

**The Impact of the University Environment  
on the Students' Entrepreneurial Intentions:  
Evidence from Khyber Pukhtunkhwa-Pakistan**

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## **Abstract**

Entrepreneurship is considered a fundamental element of social and economic development. Due to its growing importance, universities around the world are using instruments like entrepreneurship support programmes, entrepreneurship development centres and business incubators for fostering entrepreneurial intentions among students. However, the empirical research focusing on investigating the impact of the university environment including entrepreneurial offerings and contextual factors on the students' entrepreneurial intentions (SEIs) remains inconclusive and has contradictory findings. In addition, a consolidated framework that outlines both the internal and external university environmental factors remains elusive. To fill this gap, this research aims to investigate the impact of the university environment on SEIs. The main objective of this research is to identify the factors from both the internal and external environments of the universities and their impact on SEIs, with a specific focus on the Khyber Pukhtunkhwa (KP) region of Pakistan.

A review of the literature led to the development of a preliminary conceptual framework based on a robust *Luthje and Franke Model* (LFM) developed by Luthje and Franke (2003), which provided a basis for further empirical research. The data was collected in two phases: (1) quantitative data was collected in the first phase by distributing a survey questionnaire (490 Masters-Level Students); and (2) qualitative data was gathered in the second phase via semi-structured interviews (six Directors/Heads of the Business Department in universities) and through public documents. This exercise, employing triangulation, enabled wider and deeper understanding of the research phenomenon; thus, it increased the validity of evaluation and research findings.

Quantitative data was analysed using descriptive statistics and factor analysis using statistical software, followed by structural equation modelling to assess the model fit and perform theory testing. Similarly, NVivo software was used to analyse the collected qualitative data. Subsequently, linkages were made within and across the two research phases to obtain a deeper understanding of the research phenomena.

Results from the quantitative data showed that eight independent variables (Entrepreneurial Networking and Support, Entrepreneurship Clubs, University's Linkages with Society, Capital Availability, Economic Environment, Regulatory Environment, Structural Support and Workforce Availability) were positively and significantly related to the dependent variable, i.e., SEIs. However, four variables (Entrepreneurship Education, Supportive Faculty, Entrepreneurial Resources and Government Policies) were not significantly related to SEIs. The qualitative data also confirmed these results. Primary data from interviews and surveys and secondary data also highlighted two more factors, i.e., Triple Helix (University-Industry-Government Collaboration) and Law and Order Situation, to be affecting SEIs. Overall, the results of the current study show that the proposed model has a good explanatory power and is therefore robust in predicting the impact of the university environment on SEIs in Pakistan.

This study will enrich the existing body of literature and may provide guidelines to policy makers for assessing, designing, initiating, and implementing entrepreneurship support programmes successfully. Moreover, this research contributes to the knowledge through examining the factors that might encourage or impede the SEIs among Pakistani students.

## **Dedication**

*To my parents who consented extraordinary sacrifices to help me fulfil my aspirations.*

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### **In the name of Allah, the most beneficent, the most merciful**

Writing this thesis has been a significant challenge but it has been a welcomed journey, providing me with the opportunity to interact with many interesting people-for this I am grateful.

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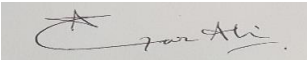
I would also like to thank my better half, Uzma Zafar, for her patience and understanding whilst bringing up our beloved daughter Alisha Zafar during my research project. Thanks to Uzma's most cheerful mindset and patience despite the enormous distractions we had to face during the PhD journey. Without Uzma's support and understanding, the thesis would have been a lot harder to complete.

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**Thank you: BABA JAN and APPA GUL.**

## Declaration

I hereby declare that no portion of this work has been submitted in support of an application for any other degree or qualification at this or any other university or institution of learning. In addition, I hereby confirm that, this thesis is solely my work and all work of others cited in this thesis has been acknowledged.

Signed: 

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## List of Abbreviations

<b>AGFI</b>	Adjusted Goodness-of-Fit Index (Model appropriateness measure)
<b>AMOS</b>	Analysis of Moment Structures (Quantitative data analysis software)
<b>AP</b>	Alpha Factoring
<b>APP</b>	Associated Press of Pakistan
<b>AVE</b>	Average Variance Extracted
<b>CA</b>	Capital Availability
<b>CFA</b>	Confirmatory Factor Analysis
<b>CFI</b>	Comparative Fit Index (Model appropriateness measure)
<b>CR</b>	Composite Reliability
<b>DAIs</b>	Degree Awarding Institutes
<b>DV</b>	Dependent Variable
<b>EDCs</b>	Entrepreneurship Development Centres
<b>ECs</b>	Entrepreneurship Clubs
<b>Eco</b>	Economic Environment
<b>EE</b>	Entrepreneurship Education
<b>EFA</b>	Exploratory Factor Analysis
<b>EI</b>	Entrepreneurial Intention
<b>EIs</b>	Entrepreneurial Intentions
<b>EN</b>	Entrepreneurial Networking
<b>ER</b>	Entrepreneurial Resources
<b>ESP</b>	Entrepreneurship Support Program
<b>EU</b>	European Union
<b>FDI</b>	Foreign Direct Investment
<b>GP</b>	Government Policies
<b>GEM</b>	Global Entrepreneurship Monitor
<b>GFI</b>	Goodness of Fit Index (Model appropriateness measure)
<b>GUESS</b>	Global University Entrepreneurial Spirit Students' Survey
<b>HEC</b>	Higher Education Commission
<b>HEIs</b>	Higher Education Institutes
<b>HRM</b>	Human Resource Management
<b>ICM</b>	Integrated Cognitive Model
<b>KMO</b>	Kaiser-Meyer-Olkin
<b>KP</b>	Khyber Pukhtunkhwa
<b>LFM</b>	Luthje and Franke Model
<b>LOS</b>	Law and Order Situation
<b>LWS</b>	Linkages with Society
<b>MA</b>	Maximum Likelihood
<b>NFI</b>	Normed Fit Index (Model appropriateness measure)
<b>PAF</b>	Principal Axis Factoring
<b>PCA</b>	Principal Component Analysis
<b>RE</b>	Regulatory Environment
<b>RMSEA</b>	Root Mean Square Error of Approximation (Model appropriateness measure)
<b>RMR</b>	Root Mean square Residual (Model appropriateness measure)
<b>SEIs</b>	Students' Entrepreneurial Intentions
<b>SEM</b>	Structural Equation Modelling
<b>SS</b>	Structural Support
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TLI</b>	Tucker Lewis Index
<b>TPB</b>	Theory of Planned Behaviour
<b>U-I-G</b>	University-Industry-Government
<b>WA</b>	Workforce Availability
<b>YAA</b>	Young Achievement Australia

# **Chapter 1: Introduction**

## **1.1 Introduction**

The chapter begins by introducing the background of the topic under investigation (section 1.2) and continues to outline the purpose of the study (section 1.3), along with a statement of the research problem (section 1.4). It then highlights the general aim of the study and presents a clear statement of the research questions and objectives (section 1.5). Next, the significance of the research is identified before ending with an overview of the structure of the thesis.

## **1.2 Background**

Entrepreneurship is considered to be a catalyst of social and economic development (Kuratko, 2005; Yusof et al., 2007; Volkmann and Tokarski, 2009). Interest in entrepreneurship is high almost everywhere in the world (Kuratko, 2005). A stream of literature suggests that entrepreneurship has contributed to the economic growth and youth employment not only in developed countries but also in developing countries (Autio et al., 20019; Delmar et al., 2003; Audretsch, 2007; Zahra et al., 2014; Rauch and Hulsink, 2015). However, despite global recognition, entrepreneurship remains limited in Pakistan, a developing country with a high unemployment rate (Tipu and Arain, 2011; Imtiaz et al., 2020; Hassan and Zaheer, 2021). This limited entrepreneurial activity is attributed to the lack of support from the government towards entrepreneurship along with a fear of failure, lack of entrepreneurial training programmes, and the cultural and social norms (GEM, 2019). Another major cause identified by the Global Entrepreneurship Monitor (GEM) is the lack of academia's contribution towards Entrepreneurship Education (EE) (GEM, 2019). This low level of attention has affected entrepreneurial interest among young people (postgraduate scholars). Similarly, Imtiaz et al. (2020) maintain that every year a large number of university graduates enter the job market; however, only a small proportion is accommodated because of the limited amount of job opportunities. This highlights the importance of EE programmes as a possible solution to tackle the unemployment problem (ibid, 2020).

The total number of universities and degree awarding institutes (DAIs) in Pakistan is 186; out of which 110 are public sector and 76 are private sector universities (HEC, 2021a). Evident concern has been shown by policy-making agencies about the lack of EE promotion plans (Ali et al., 2011; Ali and Junaid; 2016). Therefore, the Higher

Education Commission (HEC) has emphasised that universities need to include entrepreneurship as a subject, develop entrepreneurial opportunities and establish linkages with industry (Sher et al., 2017). Resultantly, EE is gaining popularity as more and more educational institutions have started contributing towards entrepreneurship development by using and diffusing new knowledge through the establishment of Entrepreneurship Development Centres (EDCs), business incubators, start-up programmes and other such initiatives (Imtiaz et al., 2020). Very limited research is available with regard to EE in the Khyber Pukhtunkhwa (KP) region of Pakistan; though the number of universities and DAIs has increased significantly in recent years. Generally, businesses in the KP possess rich opportunities to grow; however, enterprises are not performing to their full potential as human resources are largely unskilled and technical resources are limited (Noor et al., 2018). Consequently, businesses are not contributing enough to develop the economy and reduce poverty, as they are unable to create new jobs. Therefore, it can be argued that the entrepreneurial culture in the KP is immature. One of the reasons for the underdeveloped entrepreneurial culture in the KP region is that the importance of EE has not been recognised to its full potential (Muhammad et al., 2016). Whilst the prospects of EE are found to be higher in terms of economic growth, the universities in the province are failing to motivate the young graduates to be job creators or entrepreneurs instead of job seekers (Tahir and Hussain, 2016; Khan and Shah, 2020). Therefore, it is vital to identify the contextual factors in the university environment that may affect the SEIs in the KP region.

### **1.3 Purpose of the Study**

This study is set to provide insight into the impact of the university environment on the Entrepreneurial Intentions (EIs) of students (potential entrepreneurs) in the context of developing countries like Pakistan, with specific reference to the KP region. The primary aim is to identify different university environmental factors that may affect the SEIs. While doing so, the study will not only investigate different types of internal institutional factors in the form of university entrepreneurial offerings but will also explore the external environmental factors.

Existing research on the impact of various factors on SEIs remains focused on personal attributes such as age (Lee et al., 2005; Oosterbeek et al., 2010), gender (Gupta et al., 2009), personality traits and parenting style (Schmitt-Rodermund, 2004), self-efficacy (Linan, 2004; Shook and Bratianu, 2010), motivation (Lope-Pihie, 2008), creativity (Zampetakis and Moustakis, 2006) and self-image (Pilllis and Reardon, 2007). Moreover, some previous studies have focused on the impact of contextual factors such as culture (Parnell et al., 1995), legislation (Lee et al., 2005), economic conditions (Roman and Rusu, 2016b) and institutions (Walter and Block, 2016) on EIs. The literature also identified different roles of universities in fostering SEIs such as educational support, concept-development support and business-development support (Kraaijenbrink et al., 2010 and Saeed et al., 2015), and support in the form of curricular programmes, co-curricular programmes and financial resources (Kuttim et al., 2014; Perez et al., 2017; Potishuk and Kratzer, 2017). Although there has been isolated research identifying different contextual factors that affect the SEIs, a consolidated effort to develop a framework that outlines all the possible factors from both internal and external environments of the universities, as well as their theoretical explanations, remains elusive. Therefore, it is important to identify the factors that may contribute to developing SEIs in order to respond to the challenges of economic uplift and youth unemployment (Hussain et al., 2014, Karimi, 2020). This research will thus explore different internal and external environmental factors through a literature review, based on which a conceptual framework and a set of hypotheses will be developed, which will then be tested in the KP setting. This study will thus provide a holistic view of both internal and external environmental factors in the form of a consolidated framework.

There is also a lack of consensus among previous studies about factors that may influence SEIs (Nabi and Linan, 2013; Karimi et al., 2017). This lack of agreement on the set of factors or a particular theoretical model/framework may be because of the differences in context, as each country has its own environment and specific set of circumstances, opportunities and problems. Hence, the EE models adopted from developed countries may not fit in the context of developing countries (Blenker et al., 2012; Mayhew et al., 2012). Pakistan, as a developing country, also has its own set of issues and problems; thus, a 'one-size-fits-all' approach may not be suitable (Hussein et al., 2010). To date, a consolidated contextual model that portrays the critical factors

(both internal and external environmental factors) in the Pakistani settings is missing. To fill this knowledge gap, this study will therefore attempt to develop a 'university entrepreneurial environment model' for the KP context.

Literature suggests that most of the studies relating to EIs use students as the sample object of analysis, ignoring other stakeholders such as academics, mentors, guest speakers, role models, etc. (Wang and Wong, 2004; Lee et al., 2005; Thompson, 2009; Goyanes, 2015). In addition, most available research is quantitative based, focusing only on evaluating attitudes of students (Gupta et al., 2009; Kumara, 2012; Sharma, 2015; Perez et al., 2017). Hence, this research will not only assess the perceptions and views of students but also other key stakeholders involved, including Head/Directors of the Business departments in the universities in KP region to form a comprehensive picture of the issues related to EE at these universities.

Finally, it is hoped that findings from this study will be useful for policy makers at both the government and university levels, to guide them towards entrepreneurship development in general and EE in particular.

#### **1.4 Statement of the Problem**

Owing to its socio-economic importance, both governments and universities around the world have focused on the importance of EE. Universities worldwide are increasingly introducing EE programmes and those in Pakistan are no exception. Pakistan embarked on an educational reform programme at the beginning of the 21<sup>st</sup> century. The main objectives of the programme included establishment of the HEC, an autonomous institution of primary funding, overseeing, regulating and accrediting the higher education efforts in the country (HEC, 2021b). Among other efforts, the HEC has shown increased concern about entrepreneurship promotion and emphasised that universities need to include entrepreneurship as a subject in the curriculum along with developing entrepreneurial opportunities and providing flexibility among their graduates (Ali et al., 2011). Aslam et al. (2012) pointed out that the positive behaviour of policy makers encouraged more educational institutions to start contributing towards entrepreneurship development by establishing business incubators, start-up programmes, EDCs and other such initiatives. To date, little research has been undertaken to investigate how these initiatives have influenced the

SEIs in the country. In addition, studies that examine and establish the extent to which these efforts have affected the SEIs in the KP region are scarce.

With the promulgation of the 18<sup>th</sup> Amendment to the Constitution of Pakistan in 2010, higher education became primarily a provincial issue as 15 ministries were devolved at federal level and transferred to the provinces (APP, 2010). Since then, the successive governments of the KP province have focused on higher education (KP-HED, 2021). KP universities have concentrated on the development of entrepreneurship by using and diffusing new knowledge through the establishment of business incubators, industry linkages and implementing Entrepreneurship Support Programmes (ESPs). In order to understand the effects of these entrepreneurial efforts, it is important to measure the extent to which the students are influenced by the university environment. Again, no consolidated study which examines these critical environmental factors and their impact on SEIs in the context of the KP region has been conducted. As a result, studying the extent and scope of EE at the universities in a developing country context is deemed to be worthwhile, especially with the absence of any comprehensive studies using the KP context. Therefore, the proposed study will attempt to fill the gap by exploring both the internal and external environmental factors of the university environment and their perceived impact on the SEIs in the context of the KP region. The next section explains the aims and objectives of the study.

### **1.5 Research Aim and Objectives**

The aim of this research is to generate insights into the impact of the university environment on the EIs of students in the context of developing countries like Pakistan, with specific reference to the KP region.

Based on the overall aim, this study seeks to address the following research objectives:

- 1) To critically explore different types of internal environmental factors (university offerings) affecting SEIs.
- 2) To critically explore different external environmental factors affecting SEIs.

3) To construct an explanatory model relating to the overall impact of the university offerings and external environmental factors on SEIs.

4) To validate the applicability of the proposed model in explaining and predicting the impact of the university environment on SEIs.

### **1.5.1 Research Questions**

In order to identify different kinds of university environmental factors impacting the SEIs in the KP region, the present study tries to answer the following questions:

1. What internal university environmental factors affect SEIs?
2. What external university environmental factors affect SEIs?
3. How effective is the proposed model in predicting and explaining the influence of the university environment on SEIs?

### **1.6 Significance of the Study**

Pakistan has one of the world's largest youth populations i.e. almost two-thirds of its population (68.4%) is below the age of 30; however, the majority of young people appear to lack entrepreneurial skills as only 8.3% percent are reported to be self-employed outside the agriculture sector (ESP, 2021). The growing youth population may result in a change to the age structure of the labour force in the coming years as youth unemployment is increasing (Sher et al., 2017). Whilst universities are producing an increased number of graduates, only a small proportion get a job or become self-employed. Equipping the youth with entrepreneurial skills and providing them with entrepreneurial exposure can help to enhance economic activity, which in turn will improve people's lives (ESP, 2021). Therefore, the important factors contributing towards and affecting SEIs in universities need to be identified in the Pakistani context. This will help the leaders and policy makers to implement ESPs successfully. Moreover, there are other contributions in both academic and practical terms, which are as follows:

1. The results enrich the existing body of literature relating to the effect of the university environment on the SEIs by developing a conceptual framework, which may be useful in future research on the relationship of university environment with SEIs.

2. The study discovers the level of the support available at universities for entrepreneurship development and entrepreneurial intentions in the Pakistani context. This will contribute to the literature in the field of entrepreneurship education and entrepreneurial intentions (globally) and the wider role of universities in imparting EE in developing countries.
3. The study explores the influence of the university's environment on the students' intentions whilst of importance to the Pakistani and the developing countries context generally, which may provide new knowledge for developed countries as well.
4. This investigation makes a practical contribution by providing academics, researchers, students and entrepreneurship educators with information and guidance on how the university environment can help in fostering SEIs.
5. The study provides empirical evidence about fostering entrepreneurial intention among students, which can be used by policy makers, universities and other governmental organisations. This may also enhance teaching programme efficacy and efficiency.

### **1.7 Structure of the Thesis**

The thesis consists of eight chapters, the contents of which are summarised below.

#### Chapter 1: Introduction

The first chapter introduces the research background, the nature of research problem, the research aim, objectives, and questions. The chapter also highlights the significance of the research and contribution to knowledge. Finally, the outline of the study is provided.

#### Chapter 2: Literature Review

The existing literature on entrepreneurial intentions is reviewed, providing an overview of existing theories, and their applicability in explaining SEIs. It also provides information about the university environment and different factors that influence the SEIs. Finally, a gap in the research is identified and discussed.

#### Chapter 3: Research Framework

This chapter establishes the conceptual framework for the study, which is based around critical factors influencing the SEIs in the context of a developing country.

Justification for using the framework is provided and factors/sub-factors are explained. The main purpose of the proposed conceptual framework is to be used as a road map for empirical data collection and analysis, and to establish a comprehensive overview of the impact of the university environment on SEIs in a Pakistani context.

#### Chapter 4: Research Methodology

The research methodology, adopted in this study, is introduced. The chapter starts with a general overview of research methodology. It discusses the philosophical stance taken by the researcher, and proceeds to highlight the research approach before discussing the methods used for the collection of quantitative data (via survey questionnaire) and qualitative data (via semi-structured interviews). The data gathering process is fully described, including that associated with the pilot study. Issues relating to validity and reliability of data collection are discussed. Moreover, the target population and sampling strategy in each phase are described, and data analysis techniques are presented. Ethical considerations made in the study are discussed at the end.

#### Chapter 5: Quantitative Data Analysis

This chapter presents the analysis and findings of phase one of the research (questionnaire-based survey). The researcher uses the Statistical Package for Social Sciences (SPSS 24) to run tests on the questionnaire responses. The chapter begins with data management, data screening, demographic characteristics, factor loading, exploratory factor analysis and multiple regression analysis. The last part provides a detailed discussion of the structural equation model, assessment of model fit, results of the hypothesis testing and conclusion

#### Chapter 6: Qualitative Data Analysis

This chapter presents the analysis of the qualitative data gathered through semi-structured interviews with the Heads/Directors of the business department of the universities in the KP region and offers further confirmation of the research model. It also provides explanations for the results obtained. The chapter begins by presenting the demographic profiles of the interviewees, and then proceeds to report the findings relating to the factors that influence the SEIs in Pakistan. Finally, the chapter presents

a model of 'university entrepreneurial environment' based on qualitative findings using NVivo software.

#### Chapter 7: Discussion

This chapter provides an interpretation of the main findings of both research phases (quantitative and qualitative) in light of the literature reviewed in Chapter 2 and Chapter 3. It concentrates on how these findings provide answers to the research questions, and thus satisfy the objectives of the study.

#### Chapter 8: Conclusion

The final chapter summarises the key findings of the research, draws a conclusion based on these findings, discusses the limitation of the research, presents theoretical and managerial implications, and highlights the contribution to the existing body of knowledge. Finally, suggestions for future research directions are offered.

Having outlined the purpose and significance of this study, the relevant aspects of our current knowledge of the impact of the university environment on SEIs will be considered next, in the literature review chapter.

# **Chapter 2: Literature Review**

## **2.1 Introduction**

The previous chapter provided a brief background setting of the study. This chapter reviews existing literature on the issues that have a direct effect on students' entrepreneurial intentions along with identifying different factors influencing SEIs. The chapter aims to review the literature related to entrepreneurship research, entrepreneurial intentions and university environment in line with the objectives set for this study. It is important to evaluate the existing literature to contextualise the intended research, identify the research gaps and clarify how the students' entrepreneurial intentions have already been studied. The current literature review is therefore aimed at providing a broad overview of current theoretical models of entrepreneurial intentions, the chosen model for this study along with the justification and university environment.

The review of literature demonstrates a clear understanding of the research topic, identifies the major studies related to the research area, establishes the importance and relevance of the research problems, and draws a clear and appropriate conclusion. The chapter begins with an overview of entrepreneurship research and entrepreneurial intentions. It continues with a description of the theoretical models of entrepreneurial intentions along with a description of the university environment and its impact on the students' entrepreneurial intentions. The research gaps are progressively identified with each topic.

## **2.2 Entrepreneurial Research: An Overview**

Entrepreneurship has proved to be an emerging force in global economic growth (Kennedy et al., 2003; Sanchez-Escobedo et al., 2011; Kovarova and Simsova, 2019; Shah and Lala, 2021). The development of entrepreneurship is viewed as a national priority by governments all over the world, due to its positive effects on productivity, the promotion of innovation and the generation of employment opportunities, along with creating social and economic capital in a country (Wong et al., 2005; Wu and Wu, 2008; Sartori et al., 2015; Karimi et al., 2016; Farani et al., 2017). The governmental interest in entrepreneurship is evident from the designing and implementing of such policies and strategies that are aimed at the promotion of entrepreneurship (Shane and Venkataraman, 2000; van Stel et al., 2007; Alvarez et al., 2011; Farani et al.,

2017). This simultaneously has also led to academics becoming interested in the phenomenon of entrepreneurship.

Historically, two broad approaches (economic and behavioural) have been adopted in the literature on entrepreneurship research (Landstrom, 1999, McStay, 2008; Lohrke and Landstrom, 2010; Mirjana et al., 2018). A brief description of these approaches is provided as under.

### **2.2.1 The Economic Approach**

The economic approach to entrepreneurship research focuses on the role of the entrepreneur in the economy (Cope, 2005). The central theme of this approach is the economic function of the entrepreneur, who acts as an agent, gathering information and allocating resources to profit from the opportunities arising from the gaps in supply and demand in the market (Atiti, 2012). This approach depicts different roles of the entrepreneur – as an organiser of resources, a project manager, and a manager of uncertainty and a risk-bearer (Mwiya, 2014).

The beginning of the economic approach can be traced back to Richard Cantillon (1680-1734), who introduced the concept of entrepreneurship into the literature of economic science (De-Klerk and Kruger, 2002). Cantillon defined the role of the entrepreneur in economic development as that of a risk taker, who would buy products at a definite price and sell them at an unpredictable, uncertain price (Landstrom, 1999). His notion of an entrepreneur as a risk-bearer was extended by a French economist, Jean Baptiste Say (1767-1832), who gave an empirical description of what the entrepreneur does as well as an analysis of the entrepreneurial function in the economy. Say saw the entrepreneur as a 'broker' who combines the means of production with the aim of producing goods on his own account, i.e., by taking the risk (Lohrke and Landstrom, 2010). In this way, Say recognised the managerial role of the entrepreneur by both acting as a leader and a manager. Another major contribution in this regard was made by an American economist, Frank Knight (1885-1972), who argued that the entrepreneur bears the responsibility and consequences of making decisions under uncertainty and risk, and that the skill of the entrepreneur lies in his/her ability to handle the uncertainty that exists in each society (Landstrom, 1999). He further expanded Cantillon's concept by making a distinction between risk and

uncertainty, i.e., insurable risk and non-insurable uncertainty. For him, risk is insurable as it implies knowledge of the probability that an event will occur. By contrast, uncertainty is immeasurable and, therefore, not insurable. The author stresses that, because of the unique uncertainty of entrepreneurship, it cannot be insured, capitalised or salaried (Mwiya, 2014). These scholars (Cantillon, Say and Knight) saw entrepreneurship as a way of managing resources, risk, and uncertainty to improve the efficiency of an economy and meet market needs, thus depicting the entrepreneur as an organiser and a manager under conditions of risk and uncertainty (Meeks 2004; Reynolds et al., 2005; Mwiya, 2014). However, these scholars place entrepreneurs in a particular, stable environment and not in a vibrant environment, thus overlooking their innovative role, which disturbs the equilibrium in the economic system (Landstrom, 1999; Landstrom et al., 2012).

The innovative role of entrepreneurs was highlighted by an economist, Joseph Schumpeter (1883-1950), who stated that equilibrium is predominant in the economic system and the entrepreneurs, through innovation, produce economic change and create disequilibrium in the economy; these innovations are introduced in the forms of: a) new products, b) new methods of production, c) opening of new markets, d) discovery of new sources of supply, and e) development of new ventures. This phenomenon of the deliberate dismantling of established processes to make way for improved methods of production was termed 'creative destruction' (Schumpeter, 1934 cited in Landstrom, 1999). In contrast to Schumpeter, Kirzner (1973 cited in Kirzner, 2015) viewed the entrepreneur as a seeker of imbalances who restores equilibrium by increasing the efficiency of resource allocation when acting on profit-making opportunities previously overlooked in the market. Kirzner's work focuses solely on opportunity discovery, entrepreneurial alertness, and opportunism (McStay, 2008). According to Kirzner (1973 cited in Kirzner, 2015), it is fundamental for an entrepreneur to show alertness in identifying and dealing with opportunities for profit making (entrepreneurial alertness). Thus, an entrepreneur is a person who is alert to identify imperfections in the market by means of information about the needs and resources of the different actors and accordingly coordinates resources in a more effective way, thereby creating equilibrium (Landstrom, 1999). These two theories (of Schumpeter and Kirzner) indicate a form of conceptual stagnation with regard to entrepreneurship research in the field of economics as no one has succeeded in

advancing the front line of research to any considerable extent (Lindstrom, 1999; Lohrke and Landstrom, 2010). However, one exception to this is Mark Casson (1982), who highlighted an additional entrepreneurial function of an entrepreneur as a ‘coordinator’ of limited resources. Advancing Kirzner’s concepts, Casson (1982) emphasises the importance of information and argues that an entrepreneur has the capacity to combine information in a way that creates opportunities for profit. This entrepreneurial function as a coordinator of limited resources also has the capacity to deal with transaction costs that arise.

In summary, the economic approach to entrepreneurship research is based on the effects of entrepreneurship and the entrepreneur’s role in the development of the economic system. These entrepreneurial roles, in view of the above discussion, can be summarised in Table 2.1.

<b>Role of Entrepreneur</b>	<b>Advocates</b>
Risk-taker/Risk-manager	Richard Cantillon (1680-1734)
Coordinator of means of production	Jean Baptiste Say (1767-1832)
Innovator (Creative destructor)	Joseph Schumpeter (1883-1950)
Alert seeker of opportunities	Israel Kirzner (1973)
Coordinator of limited resources	Mark Casson (1982)

**Table 2.1 Entrepreneurial Roles, based on Economic Approach**

Source: Adopted and adapted from Landstrom (1999)

Though the theories by Schumpeter and Kirzner put entrepreneurship at the core of economic science, after Schumpeter attention in society moved further away from trying to explain entrepreneurship towards developing entrepreneurship (Landstrom, 1999; Alvarez et al., 2010; Audretsch, 2012; Mwiya 2014), thus placing more importance on the availability of entrepreneurial ability towards economic development. For example, in the 1950s (after World War II) it became vital to identify the individuals with entrepreneurial skills to stimulate them to start businesses and get development in society underway (Lindstrom et al., 2012). As economists could not play a useful role in identifying and developing entrepreneurial skills, researchers from behavioural science started taking an interest in entrepreneurial research and theoretical development. This led to the emergence of the behavioural approach

towards entrepreneurship research. The economic approach was also criticised for focusing heavily on the occurrence of an entrepreneurial action, irrespective of who the actor is (Davidsson, 2003; McMullen and Shepherd, 2006; McStay, 2008). Scholars (such as Shane, 2003; Cope, 2005; Mwiya, 2014) also criticised this approach for its failure to assess the impact of the institutions (environment) on the entrepreneur's behaviour. The behavioural approach towards entrepreneurship research focused on the individual entrepreneur along with the social and psychological processes related to the activity of entrepreneurship (Gartner et al., 1994; McStay 2008). A brief description of this approach is provided in the next section.

### **2.2.2 The Behavioural Approach**

The central theme of the behavioural approach (also called the psychological approach) is based on the entrepreneur as an individual and the factors that influence his/her behaviour towards entrepreneurship. It aims not only at defining who the entrepreneur is, but also at showing how entrepreneurs differ from other groups of leaders (Lindstrom, 1999; Meeks, 2004). The entrepreneurial behaviour is generally linked to the Schumpeterian notion of an entrepreneur, identifying two key elements, i.e., recognition of an opportunity and exploitation of that opportunity (Venkataraman, 1997; Alvarez et al., 2010; Audretsch, 2012). In an attempt to describe the entrepreneurial behaviour and answer why some people recognise and exploit these opportunities, while others do not, scholars (such as McStay, 2008; Marques, 2012; Terjesen, et al. 2013; Marvin and Flora, 2014; Mirjana et al., 2018) have identified three distinct streams, namely trait/personality, demographic and cognitive approaches. The behavioural approach not only provided the entrepreneurship research with a theoretical focus but also empirical support (Lohrke and Landstrom, 2010). The three streams are reviewed briefly below:

#### **Trait/Personality Approach**

The trait approach to studying entrepreneurship is perhaps the most widely used approach in entrepreneurial behaviour research (Paco et al., 2011). This approach focuses on the personality traits and personal characteristics of the founding entrepreneurs (Meeks, 2004). The trait approach has been pursued by many researchers to identify personality traits that contribute to venture establishment and

characteristics that would differentiate entrepreneurs from non-entrepreneurs (for example, Hancock and Fitzsimons, 2004; Gurol and Atsan, 2006; Paco et al., 2011; Munir et al., 2019). However, although literature has identified several personality traits, there is no agreement on the traits specific to the entrepreneur, or their validity (McStay, 2008; Linan and Fayolle, 2015; Munir et al., 2019). The most used traits in the entrepreneurial behaviour research along with an empirical support are summarised in Table 2.2.

<b>Personality Trait</b>	<b>Empirical Studies</b>
<b>Innovativeness</b>	Thomas and Mueller (2000); Gurol and Atsan (2006); Hamidi et al., (2008); Chaudhary (2017)
<b>Locus of control</b>	Oosterbeek et al. (2010); Schjoedt and Shaver (2012); Caliendo et al. (2014); Shirokova et al. (2016)
<b>Need for achievement</b>	Diaz-Casero et al. (2012); Ferreira et al. (2012); Chaudhary (2017)
<b>Proactivity</b>	Seibert and Kraimer (2001); Zampetakis (2008)
<b>Risk-taking propensity</b>	Zhao et al. (2005); Segal et al. (2005); Nabi and Linan (2013)
<b>Self-confidence</b>	Gurol and Atsan (2006); Raposo et al. (2008), Chaudhary (2017)
<b>Tolerance for ambiguity</b>	Markman and Baron (2003); McMullen and Shepherd (2006); Chaudhary (2017)

**Table 2.2 Summary of Personality Trait and Empirical Evidence**

Source: Developed by the author

The trait/personality approach to entrepreneurship has made important contributions in identifying the key personality traits which influence the entrepreneurial decisions and behaviour of entrepreneurs. Empirical research examining the various personality traits that influence the entrepreneurial inclination of individuals abounds in the literature (Zhao et al., 2005; Gurol and Atsan, 2006; Diaz-Casero et al., 2012; Shirokova et al., 2016; Chaudhary, 2017; Munir et al., 2019). However, these empirical studies have shown mixed results. For example, Gurol and Atsan (2006) reported higher levels of confidence and esteem in entrepreneurs when compared to non-entrepreneurs. Ferreira et al. (2012) reported a negative correlation between self-confidence and entrepreneurial inclination. Similarly, Ferreira et al. (2012) and Marques et al. (2012) reported a significant correlation between the trait of need for achievement and the entrepreneurial inclination of students. Contrarily, Davidsson and Wiklund (1999) and Chaudhary (2017) pointed out that the trait of need for achievement has little role to play in determining entrepreneurial behaviour.

The possible justification for these mixed results, as suggested by scholars, is that of the differences across individuals (Stevenson and Jarillo, 1990) and the differences of the business contexts (Davidsson, 2003; Audretsch, 2012). An important response to these weaknesses of the trait/personality approach has been to look at the business creations within their respective contexts (Davidsson, 2003), thus paving the way for using demographic variables to explain the observed variations in the entrepreneurial behaviour relating to venture creation.

### **Demographic Approach**

This approach to entrepreneurial behaviour utilises demographic characteristics as the research foundation. It groups people by personal, family and social background, along with everyday social and human experiences (Meeks, 2004; McStay, 2008). The demographic approach assumes that, if the demographics of a known entrepreneur can be identified, these characteristics can be used to predict entrepreneurship in an unknown population (Ahmed et al., 2019). Many researchers (for example, Zhao et al., 2005; Wu and Wu, 2008; Hatak et al., 2015, Chaudhary, 2017; Munir et al., 2019) have investigated potential demographic variables for entrepreneurship under this approach in an attempt to separate entrepreneurs from non-entrepreneurs. These variables included family background and experiences such as age, gender, marital status, race, role models, previous work experience, educational level, etc. One of the many questions that this approach also tries to answer is why do some regions exhibit a greater degree of entrepreneurial activity than others? The set of studies (such as Audretsch and Keilbach, 2007; Parker, 2009; Audretsch et al., 2015; Kuratko et al., 2015) pointing out this question tries to move the unit of analysis from individuals to regions. The most commonly used demographic variables in the entrepreneurial behaviour research along with empirical support are summarised in Table 2.3.

<b>Demographic Characteristics</b>	<b>Empirical Studies</b>
<b>Age</b>	Fung et al. (2001); Pruett et al. (2009); Hatak et al. (2015)
<b>Education Level</b>	Wu and Wu, (2008); Jones et al. (2008) ; Marques et al. (2012); Chaudhary (2017) ; Nguyen (2018)
<b>Family Background</b>	Marques et al. (2012); Solesvik (2013); Hatak et al. (2015); Chaudhary et al. (2017)
<b>Gender</b>	Zhao et al. (2005); Lu and Tao (2010); Haus et al. (2013); Hatak et al. (2015); Chaudhary (2017)
<b>Previous Experience</b>	Barringer et al. (2005); Basu and Virick (2008); McStay (2008); Saleh and Salheih (2014); Nguyen (2018)

**Table 2.3 Summary of Demographic Characteristics and Empirical Evidence**

Source: Developed by the author

The demographic approach to entrepreneurship has made important contributions in identifying the key personality traits that influence the entrepreneurial decisions and behaviour of entrepreneurs. Empirical research examining the various demographic factors that influence the entrepreneurial inclination of individuals abounds in the literature (Zhao et al., 2005; Saleh and Salheih, 2014; Hatak, et al., 2015; Chaudhary, 2017; Nguyen, 2018; Munir et al., 2019). However, like personality traits, the empirical studies of demographic factors also have shown mixed results. For instance, previous studies (for example, Wang and Wong, 2004; Solesvik, 2013; Chaudhary, 2017) found family background to influence the entrepreneurial interest. Contrarily, Marques et al. (2012) and Hatak et al. (2015) found no significant influence of family business background on entrepreneurial inclination. Similarly, previous studies (for example, Zhao et al., 2005; Lu and Tao, 2010; Hatak et al., 2015) reported lower levels of entrepreneurial inclination amongst women due to perceived gender-specific barriers. In contrast, some studies (such as Wilson et al., 2007; Pruett et al., 2009; Chaudhary, 2017) showed no meaningful difference between men and women in terms of interest in starting a business.

Research on personality characteristics and demographic variables has enabled the identification of significant relationships between certain demographic features and characteristics of individuals and putting entrepreneurial behaviours into practice

(Linan and Chen, 2009). However, both approaches have come under criticism for a number of reasons, an account of which is given below:

### **Overall Critique of Personality and Demographic Approaches**

Research attempting to develop personality and demographic profiles of the entrepreneur has been criticised by scholars (such as Ajzen, 1991; Chell, 2000; Kristiansen and Indarti, 2004; Shinnar et al., 2012) for a number of reasons. Firstly, these approaches are criticised for failing to reach high predictive power (Heuer, 2012). The existing literature shows that efforts to predict entrepreneurial behaviour through personality or demographic characteristics have yielded weak or non-significant results with a small explanatory power (Low and McMillan, 1988; Izquierdo and Buelens, 2011). Secondly, it is not clear whether entrepreneurs possess these traits from birth or acquire them because of a) being an entrepreneur (Chell, 2000); b) being in a cultural setting that favours entrepreneurship (Shinnar et al., 2012); or c) by grasping entrepreneurship knowledge or skills (Rasheed and Rasheed, 2003). Thirdly, entrepreneurs may possess some, but not necessarily all, of the traits highlighted in the literature, bringing the conclusion that not one stereotypical personality model fits (Chell, 2000). Another problem with this line of research is that it focused on ex-post situations, i.e., on entrepreneurs who had already started a firm, and by doing so diminished the importance of different contingencies in a person's behaviour (Autio et al., 2001; Mwiya, 2014; Mirjana et al., 2018). Scholars also pointed out that psychological and demographic approaches by themselves are insufficient in explaining entrepreneurship behaviour, as individuals have to interact with their environment. Therefore, they increasingly advocate for theoretical models that reflect that an individual's behaviour may be determined by interactions between individual factors and situational/environmental factors (Shepherd, 2011; Iakovleva et al., 2014; Mwiya, 2014; Foo et al., 2016). Similarly, scholars also identified that the decision-making regarding venture creation involves cognitive processes and factors (Ajzen, 1991; Krueger et al., 2000; Mitchell, et al., 2002; Linan et al., 2011), which the personality and demographic approaches fail to consider. These critiques thus shifted the unit of analysis from personal and demographic characteristics to the cognitive factors that precede individual behaviour. This approach is discussed in detail below.

## **Cognitive Approach**

The foundations of this line of entrepreneurial research approach are based upon entrepreneurial cognitions, which are defined as “the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth” (Mitchell, et al., 2002, p. 97). Scholars have assumed that cognition has a great potential to make significant contributions to entrepreneurship studies as it is the way in which individuals perceive their ability to play a role in an entrepreneurial process (Teixeria et al., 2018). For example, those who develop positive perceptions about their entrepreneurial ability are more likely to initiate entrepreneurial activities than those who do not (Mitchell et al., 2002; Townsend et al., 2010; De Clercq et al., 2011; Teixeria et al., 2018).

Research on entrepreneurial cognition has seen substantial developments, both in theory and empirical testing (Lim et al., 2010). The theoretical cognitive models have better explanatory power than the trait and demographic approaches in entrepreneurship, as behaviour is considered to be a consequence of person-situation interactions (Linan et al., 2011). Additionally, cognitive models have provided the researchers with tools that contribute to the scientific understanding of the entrepreneurial career decision and behaviour (Mitchell et al., 2002; Baron, 2004; Karimi et al., 2107). Similarly, researchers following cognitive approaches have also empirically established that entrepreneurs have knowledge structures that are different from those of non-entrepreneurs, and that these influence the decisions regarding venture creation (Mitchell et al., 2002; De Clercq et al., 2011; Paco et al., 2015; Farini et al., 2017).

Scholars following a cognitive approach assume that entrepreneurial intention is one of the most relevant elements within the individual cognitive process leading to the start of a new venture (Krueger et al., 2000). They argue that, as from the moment when the decision to become an entrepreneur appears plausible, it would seem reasonable to analyse just how such a decision is taken. Hence, intentions would be a preceding and determining factor for engaging in business behaviours (Zhao et al., 2005; Kolvereid and Isaksen, 2006; Iakovleva and Kolvereid, 2009; Marques 2012; Farani et al., 2017). Ajzen (1991) argued that the intention to undertake a specific behaviour depends on individual attitudes to such behaviour. More favourable

attitudes will foster more viable intentions to implement a specific behaviour and vice versa (Linan and Chen, 2009). Based on this latter approach, some intention-based research models emerged which propose cognitive premises for explaining such phenomena. The next section provides a detailed discussion on these entrepreneurial intentions and the related theoretical models.

### **2.3 Entrepreneurial Intentions**

Entrepreneurship literature shows that concrete intentions play a crucial role in making the decision to start a new business (Bird, 1988; Krueger et al., 2000; Kolvereid and Isaksen, 2006; Cha and Bae, 2010). Forming an intention to develop an entrepreneurial career is presumed to be the first step in the often-long process of venture creation (Gartner et al., 1994); therefore, it has been considered as a key element in understanding the new business creation process (Bird, 1998). In the literature, entrepreneurial intentions have been defined by citing the mental states that arguably precede entrepreneurial actions, such as:

- “It is a state of mind that directs a person’s attention, experience, and behaviour toward entrepreneurial objectives or methods of behaving.” (Bird, 1998, p. 443)
- “It is the cognitive state immediately preceding [entrepreneurial] action” (Krueger, 2005, p. 19)
- “It is a conscious and planned determination that drives the actions necessary to launch a business” (Thompson, 2009, p. 671)
- “It is an aroused state of entrepreneurial motivation to complete the entrepreneurial journey toward opportunity realization” (Cha and Bae, 2010, p. 31)

Based on the above definitions, intentions represent the cognitive state prior and immediately proximate to an action and are frequently seen as substantial to the deliberate human behaviour (Krueger, 2005). They indicate how hard people are willing to try, to perform the actual behaviour in question (Ajzen, 1991), and thus stand for the inspiration (conscious plan or decision) of an individual to make an effort (Conner and Armitage, 1998). Ajzen (1991) argues that, when behaviour is rare, difficult to observe and involves time lags, intentions offer critical insights into the underlying processes such as opportunity recognition. Since the entrepreneurial

process of venture creation involves time lags and the entrepreneurial behaviour of an individual in this regard is hard to observe, therefore entrepreneurial intentions have proved particularly important in predicting a specific entrepreneurial behaviour (Krueger et al., 2000; Krueger, 2005). Thus, intentions probably appear to be the most crucial psychological characteristics to understand the way individuals act (Fayolle et al., 2005).

As a key construct in psychology for modelling and studying the drivers of human behaviour, intentions can be applied to a specific activity like entrepreneurship, providing a very useful tool for decision-makers to optimise their actions towards encouraging or discouraging that activity (Heuer, 2012). Literature suggests that an individual's entrepreneurial intentions are substantially important in understanding their entrepreneurial behaviour (Krueger et al., 2000; Davidsson, 2003; Peterman and Kennedy, 2003; Zhao et al., 2005; McStay, 2008; Farini et al., 2017). Some of the advantages of focusing on entrepreneurial intentions are presented below:

Firstly, entrepreneurial behaviour will never be predicted precisely by distal variables like personality traits. Instead, intention-based approaches offer sound, theory-driven models of how exogenous factors such as environmental or demographic variables influence the intentional antecedents and by that intentions and finally behaviour (Davidsson, 2003; Heuer, 2012). Secondly, the intention-based approach focuses on factors that make potential entrepreneurs turn into real entrepreneurs, along with delivering information which is valuable in decision-making. By doing so, it avoids identifying as determinants of entrepreneurial behaviour those individual characteristics that represent a consequence of entrepreneurial experience (Heuer, 2012). Additionally, the intention-based models prove particularly useful when the behaviour in question is hard to observe, rare, or involves unpredictable time lags (Krueger, et al., 2000), as is the case for venture creation.

An important point raised by Ajzen (2005) in this regard is that intentions are dynamic and can change over time; this can affect the accuracy with which they are able to predict the behaviour in question. As the disruptive effects of unforeseen events may lead to a change in intention, therefore, the bigger the time interval between the measurement of the intention and the observation of the behaviour, the less precise

the prediction will be (Ajzen, 2005). Despite this, scholars argue that, as becoming an entrepreneur is clearly an activity of planned behaviour and a strong intention can influence this behaviour, therefore entrepreneurship can be described as a type of planned behaviour, which can be analysed with the help of intention-based models (Sarasvathy, 2004; Mueller, 2011; Tomy and Perdede, 2020).

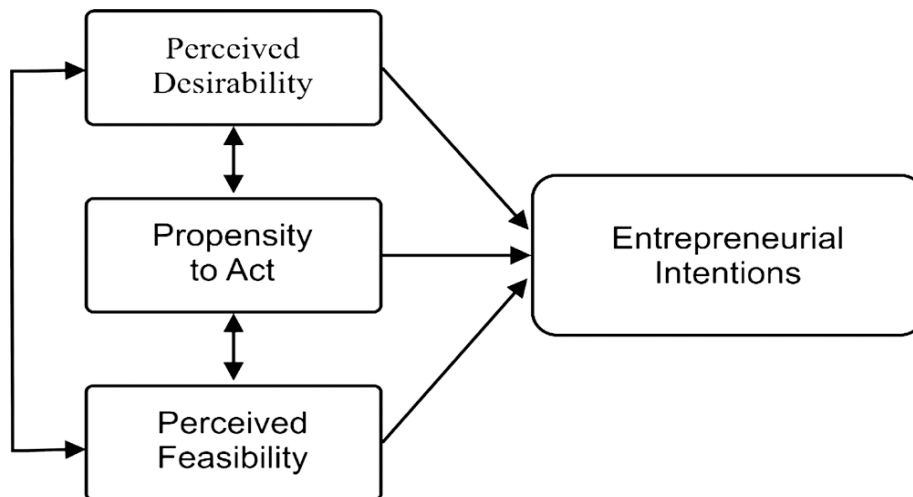
A brief discussion of the most important models is provided in the next section.

### **2.3.1 Entrepreneurial Event Model (EEM)**

This model was developed by Shapero and Sokol (1982) and is considered as the first intention model specific to entrepreneurship. This model is based on the premise that the creation of a business is an event, which can be explained in the context of the interaction of variables that influence an individual's perception. It posits that entrepreneurial intentions depend on the perceptions of desirability and feasibility and the propensity to act, whereby:

- Perceived desirability refers to the degree to which an individual feels attracted towards a career as an entrepreneur,
- Perceived feasibility refers to the degree to which an individual feels confident to start a business and considers the possibility feasible, and
- Propensity to act refers to the degree to which an individual has the disposition to act on his or her decision (Shapero and Sokol, 1982).

The EEM is presented in the following figure:



**Figure 2.1 Entrepreneurial Event Model**

Source: Shapero and Sokol (1982)

To consider how entrepreneurial intentions influence the ‘entrepreneurial event formation’, Shapero and Sokol (1982) looked at life path changes and their impact on the individual’s perceptions of desirability and perceptions of feasibility related to new venture creation. The critical life changes (displacement) precipitate an event or trigger that causes a change in entrepreneurial intention and subsequent behaviour by influencing the individual’s evaluation of alternatives and selection of options. These trigger events may be positive (such as financial support) or negative (such as loss of job). The selection of entrepreneurship therefore must be viewed as a desirable and feasible option, bearing in mind that individuals must have a proclivity towards the selected alternative (Peterman and Kennedy, 2003).

Several scholars (such as Peterman and Kennedy, 2003; Thompson, 2009; Urban and Kujinga, 2017; Ranga et al., 2019; Bui et al., 2020) have applied EEM to provide empirical support for the relationship of perceived desirability, perceived feasibility and propensity to act with entrepreneurial intentions. A summary of some recent studies using EEM to find the significance of various factors on entrepreneurial intentions in different countries is given in the following table:

Studies	Context	Research Focus
Ali et al. (2016)	Thailand	Perceived desirability, perceived feasibility, self-efficacy and EIs using EEM
Ranga et al. (2019)	India	Three fundamental variables i.e. perceived desirability, perceived feasibility and propensity to act
Bui et al. (2020)	Vietnam	Four fundamental variables i.e. perceived desirability, propensity to act, leadership and adversity, and searching and planning
Chen et al. (2020)	China	Entrepreneurial Education, perceived desirability, perceived feasibility, perceived risk and EIs
Mikic et al. (2020)	Croatia	Fundamental variables of EEM i.e. perceived desirability, perceived feasibility and propensity to act
Soomro et al. (2020)	Pakistan	Perceived desirability, perceived feasibility, self-efficacy and EIs
Ramchander, M. (2021)	South Africa	Entrepreneurial Intention in view of EEM factors i.e. perceived desirability, perceived feasibility and propensity to act

**Table 2.4 Summary of Recent Studies on EIs using EEM**

Source: Developed by the author

In literature, the EEM has been tested with different factors acting as entrepreneurial events or triggers such as role models (Krueger, 1993), entrepreneurship education (Peterman and Kennedy, 2003; Turker and Selcuk, 2009), self-efficacy (Zhao et al., 2005; Ali et al., 2016; Soomro et al., 2020), social norms (Linan and Chen, 2009), need for independence (Barba-Sanchez and Aienza-Sahquillo, 2018) and perceived risk (Chen et al., 2020). However, EEM has come under criticism in the way that this model is limited to measurement of entrepreneurial events considering the so-called displacement but not entrepreneurial behaviour in a holistic way. These scholars (Sarasvathy, 2004; Bacq et al., 2017; Rai et al., 2017) argue that an individual who has interacted in the social and cultural environment of entrepreneurship may adopt entrepreneurship as his/her career option without facing any displacement in his/her life, e.g., individuals who have grown up with a family business background effortlessly land up with the entrepreneurial event. This event may not be due to any displacement in their life; it may simply be due to their interaction with that social and cultural environment (Rai et al., 2017). Thus, it is argued that this model may not capture the resultant entrepreneurial behaviour of an individual in the absence of any significant life-changing event.

On the same line of focusing on the antecedents of the entrepreneurial intentions, another intention model has also been extensively used in the entrepreneurial

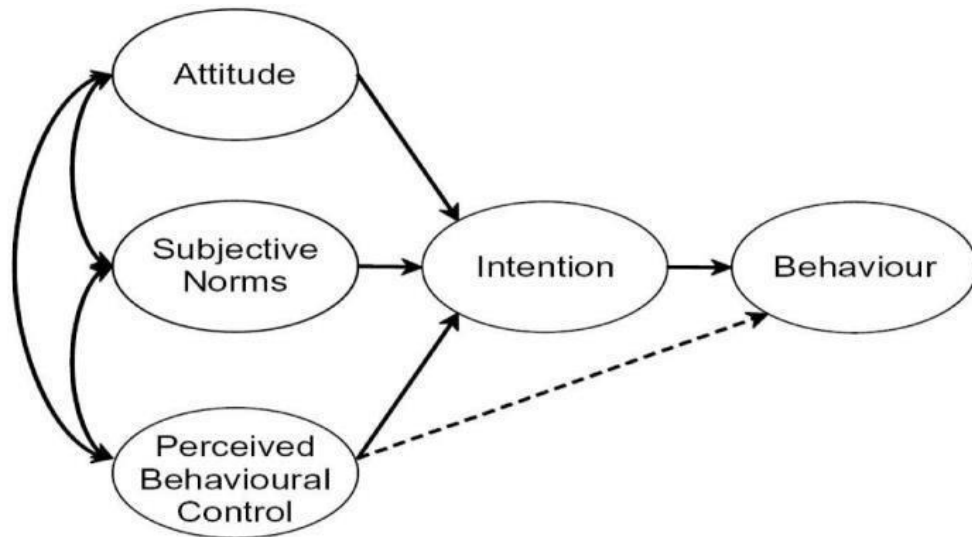
literature for understanding of the entrepreneurial behaviour, which is discussed in the next section.

### **2.3.2 Theory of Planned Behaviour (TPB)**

Ajzen (1991) presented the Theory of Planned Behaviour, the fundamental assumption of which is that humans behave rationally and consider available information and the consequences of their action. TPB postulates that intention is a reliable predictor of planned behaviour in various situations (Ajzen, 1991). As such, entrepreneurship is classed as a planned behaviour whereby the opportunity identification and realisation involve a lot of thinking and planning (Krueger et al., 2000). Thus, among all the determinants examined as potential predictors for entrepreneurial behaviour, the entrepreneurial intention has proved to be the strongest one (Gartner, 1985; Krueger et al., 2000). Ajzen (1991) posited that entrepreneurial intentions depend on three independent determinants or antecedents, namely attitudes towards the envisaged behaviour, subjective norms and perceived behavioural control, whereby:

- *Attitude towards behaviour* refers to the individual's evaluation of the behaviour and the level of favourability towards the behaviour.
- *Subjective norms* refer to the individual's perception of the social pressure of performing a particular behaviour.
- *Perceived behavioural control* refers to the individual's perceptions of their ability to execute a specific behaviour (Ajzen, 1991).

The TPB is presented in the following figure.



**Figure 2.2 Ajzen's Theory of Planned Behaviour (TPB)**

Source: Ajzen (1991)

The TPB is regarded as the most statistically robust model which has been empirically tested for explaining entrepreneurial behaviour (Fayolle et al., 2011; Linan and Fayolle 2014; Al-Jubari et al., 2018), and is more influential than other intention models because it offers a coherent framework that enables a better understanding and prediction of entrepreneurial intention (Krueger et al., 2000). Its applicability to various domains including entrepreneurship is well documented (Paco et al., 2011; Zhang et al., 2014; Rai et al., 2017; Alam et al., 2019; Mamun et al., 2019). Several scholars (such as Anjum et al., 2018; Ibrahim, et al., 2018; Soomro et al., 2018; Arafat et al., 2020; Karimi, 2020) have used TPB to provide empirical support for the relationship of perceived behavioural control, attitude and subjective norms with entrepreneurial intentions. A summary of some of the recent studies using TPB for finding the significance of various factors on entrepreneurial intentions in different countries is given in the following table:

Studies	Context	Research Focus
Sankar (2017)	India	Impact of Personal attitude, social norms and perceived behavioural control on EIs using TPB
Al-jubari et al. (2018)	Malaysia	Tests roles of basic psychological needs of autonomy, competence and relatedness in relation to TPB antecedents i.e. attitude, social norms and perceived behavioural control.
Soomro et al. (2018)	Pakistan and Thailand	Comparison of the EIs between the students of two countries based on the antecedents of TPB
Gonzalez et al. (2019)	Spain	The mediating role of TPB between university environment and EIs
Munir et al. (2019)	China and Pakistan	Personality traits and TPB for comparison of EIs between an emerging economy and a developing country
Arafat et al. (2020)	India	Understanding EIs among youth aspiring for self-employment, using TPB
Dao et al. (2021)	Vietnam	Effect of academic majors, perceived risks and personalities on EIs of engineering and business students, using TPB antecedents

**Table 2.5 Summary of Some Recent Studies on EIs using TPB**

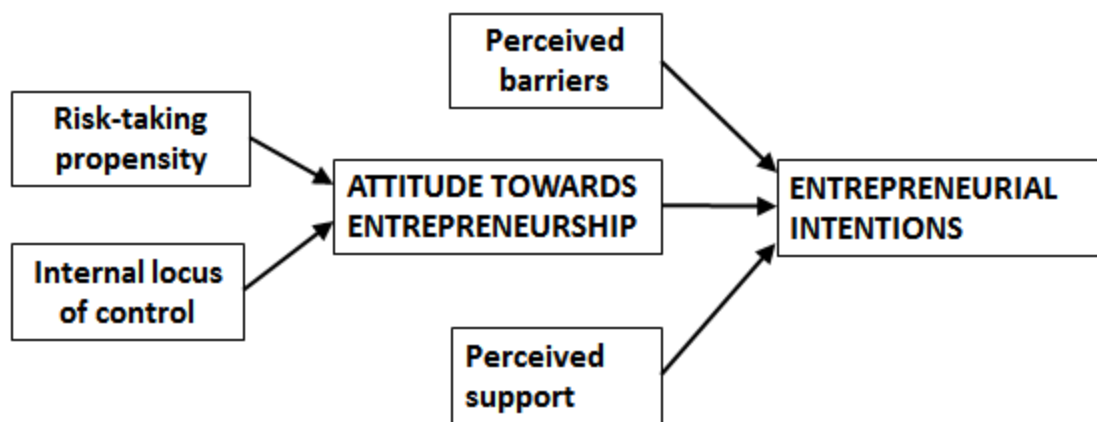
Source: Developed by the author

Although both Ajzen's and Shapero's models have proved useful frameworks in guiding the research into the development of an individual's entrepreneurial intentions and behaviour, scholars have criticised them for a number of reasons. Firstly, entrepreneurship is a complex behaviour which is not completely under the control of nascent (would-be) entrepreneurs (Brannback et al., 2007). These models rely heavily on the attitude and intentions, thus ignore other important factors. Similarly, scholars have found that the subjective norm, a key element of both these models, is not always significant in explaining EIs (Autio et al., 2001). This suggests that neither the cognition-based theories nor the personality traits, by themselves, adequately explain the development of EIs (Trebar, 2014). This calls for a theoretical model which encompasses both the personality characteristics and environmental factors. Such a model is discussed in the next section.

### **2.3.3 Luthje and Franke Model (LFM)**

Both the above-mentioned intention models (EEM and TPB) emphasise the perceptions of feasibility and desirability, behavioural control, and self-efficacy for the explanation of entrepreneurial intentions and subsequent behaviour. While doing so, they ignore the effect of the environment in which entrepreneurs exist and which may have an impact in shaping their perceptions about entrepreneurship. This led Luthje

and Franke (2003) to find out whether EI was determined primarily by personality characteristics (which are hard to change) or external factors (which policymakers may have the power to change). They believed that the answers could have a profound effect on which policies are chosen to encourage entrepreneurial behaviour. Therefore, they developed their own intention model (LFM) by combining the personality characteristics and environmental factors (barriers/support) in reviewing the determination of entrepreneurial intentions. The LFM model is presented in the following figure.



**Figure 2.3 Luthje and Franke Model of EI**  
 Source: Luthje and Franke (2003)

In their model (Figure 2.3), 'risk-taking propensity' and 'locus of control' are personality-related, while 'perceived barriers' and 'perceived support' can both potentially be affected by policy actions. Thus, Luthje and Franke (2003), through their model (LFM), established that exogenous factors work through an individual's perceptions of desirability and feasibility, such as environmental factors can either facilitate or hinder EIs and behaviour when an individual decides whether or not to pursue an entrepreneurial career.

Empirical research based on the LFM also identified a range of contextual barriers and support factors affecting SEIs (Nabi and Linan, 2013; Mustafa et al., 2016; Karimi et al., 2017). The LFM offers a sound framework for assessing antecedents of SEIs (Nabi et al., 2010). Many researchers have used it to examine the impact of demographics (Kristiansen and Indarti, 2004), psychological variables (Taormina and Lao, 2007),

attitudes (Schwarz et al., 2009), personality traits (Sesen, 2013), institutional factors (Grimaldi et al., 2011), personality and context (Karimi et al., 2017), climate (Bergmann et al., 2018), and personality and environment (Mohammad, 2020) on the SEIs. The robustness of the LFM in predicting antecedents of EIs has also been established by research carried out in both developed and developing countries. The following table provides a list of a selection of studies that have used LFM as a research framework.

Studies	Context	Research using LFM Framework	Research Focus
Kristiansen and Indart (2004)	Indonesia and Norway	Identifying determinants of EI among young people	Demographic factors, personality traits and attitudes, access to capital and information
Schwarz et al. (2009)	Austria	Effect of attitudes and perceived environment conditions on SEIs	Attitudes towards money, change and competitiveness, university environment and regional infrastructure
Nabi and Linan (2013)	UK and Spain	Role of risk perception and economic context in shaping EIs	Risk as opportunity and risk as threat, personal attitudes and perceived behavioural control
Sesen (2013)	Turkey	Individual and environmental factors affecting EIs	Locus of control, self-efficacy, social networks, access to capital
Mustafa et al. (2015)	Malaysia	Influence of university support and proactive personality on SEIs	Education support, concept development support and business development support
Karimi et al. (2017)	Iran	Testing relationship between personality characteristics, contextual factors and EIs	Need for achievement, risk taking, locus of control, perceived barriers and support
Bergman et al. (2018)	Germany	Climate for entrepreneurship at higher education institutions	Drivers of student's perceptions of entrepreneurial climate, university entrepreneurship measures, background, gender
Mohammad (2020)	Malaysia	Testing relationship between personality traits and environmental factors with EIs	Need for achievement, locus of control, self-efficacy, students, lecturers, curriculum, co-curriculum, support resources and campus conditions

**Table 2.6 Key Research using LFM Framework**

Source: Developed by the Author

Since the objective of this research is to investigate the effect of university environment on the entrepreneurial intentions of students, therefore, to find out whether various environmental factors influence their decision to engage in entrepreneurship, this research will use LFM as a theoretical base for the investigation of the significance of university environment on the students' entrepreneurial intentions. The justification for this is given below:

#### **Justification for using LFM as the theoretical framework in this research**

Traditionally, literature related to SEIs has been based on the above-mentioned two theories (EEM and TPB), which focus on the antecedents that lead to intentions and

subsequent behaviour. For example, Shapero's (1982) EEM proposes that EIs are dependent upon three elements, namely perceived desirability, perceived feasibility, and propensity to act. Similarly, Ajzen's (1991) TPB states that entrepreneurial behaviours are a result of intentions, which are the functions of attitudes, subjective norms, and perceived behavioural control. Both these models perceive that intention and behaviour are not affected by external factors, but scholars have criticised these models due to their failure to consider the effect of situational/environmental factors from the environment in which the entrepreneurs interact (Krueger et al., 2000; Luthje and Franke, 2003; Nabi et al., 2010; Sesen, 2013; Mohammad, 2020). Therefore, a more robust model of LFM, which combines both the personality characteristics and environmental factors in the form of perceived barriers and support, has been suggested by certain scholars (Nabi et al., 2010; Sesen, 2013; Mustafa et al., 2015; Bergman et al., 2015; Mohammad, 2020) while studying the impact of environment on EIs.

Additionally, LFM has also proved to be a good predictor in identifying the factors that influence the EIs (Kristiansen and Indart, 2004; Schwarz et al., 2009; Nabi and Linan, 2013; Sesen, 2013, Karimi et al., 2017). Likewise, this research assumes that EIs are directly affected by the environmental factors, which is best described by the LFM, instead of EEM or TPB that consider EIs or behaviours to not be directly affected by exogenous factors (Krueger et al., 2000). Therefore, this study will use the LFM to identify the impact of a university's environmental factors on the students' entrepreneurial intentions.

Although LFM included personality traits and environmental factors, whereby personality traits have indirect impact on the EIs while environmental factors directly influence the EIs (Nabi and Linan, 2013; Mustafa et al., 2016; Karimi et al., 2017). However, the research objectives of this study aim at exploring the impact of university environment on the SEIs, therefore, LFM is partly used for this study (see figure 2.3).

Before discussing the university environment, it is important to describe the students' entrepreneurial intentions.

## **2.4 Students' Entrepreneurial Intentions (SEIs)**

In entrepreneurship standings, Students' Entrepreneurial Intention (SEI) refers to “a conscious awareness and conviction by a student that they intend to setup a new business venture and plan to do so” (Nabi et al., 2010, p.538). The literature on SEIs indicates that venture creation or students' choice of entrepreneurial career is a planned behaviour (Katz and Gartner, 1988; Kruger and Brazeal, 1994; Linan, 2004). Any planned behaviour is best predicted by observing intentions towards that behaviour, instead of observing personality traits, demographics, attitudes or beliefs (Bagozzi et al., 1989; Krueger et al., 2000; Schwarz, 2009; Izquierdo and Buelens, 2011; Uysal and Guney, 2016). In this context, this is mainly because SEIs are conceived as immediate antecedents of the actual behaviour, i.e., venture creation, which is hard to observe and involves time lags (Ajzen, 1991). Similarly, Lent et al. (1994) found SEIs to be the primary predictor of behaviours such as career choice that even have time lags. Hence, SEIs predict entrepreneurial behaviour while SEIs themselves are predicted by certain attitudes that derive from exogenous factors (Ajzen, 1991). In addition, exogenous factors indirectly effect SEIs, either by driving attitudes or by moderating the relationship between intentions and behaviour. Therefore, psychology-related intention models are mainly used for studying entrepreneurial activity among students, which offer a great opportunity for increasing our understanding due to their predictive ability and high explanatory power (Krueger et al., 2000; Linan, 2004; Fayolle and Gailly, 2004).

Empirical studies on SEIs illustrate that a number of factors such as demographics (Delmar et al., 2003), locus of control (Mueller and Thomas, 2001), self-efficacy (Kristiansen and Indarti, 2004), family support (Carr and Sequeira, 2007), personality traits (Fini et al., 2012) and risk-taking propensity (Nabi and Linan, 2013) influence SEIs. Another key instrument to enhance entrepreneurial attitudes of both potential and nascent entrepreneurs, as identified by literature, is EE as it strongly influences the SEIs (Peterman and Kennedy, 2003; Byabashaija and Katono, 2011; Bae et al., 2014; Shirokova et al., 2018). Although the majority of studies have established a positive relation between EE and SEIs, some differences in findings are also highlighted in the literature. For instance, researchers such as Galloway and Brown (2002), Lee et al. (2005), Oosterbeek et al. (2010) and Von Graevenitz et al. (2010) found that EE had a negative effect on SEIs. Similarly, Shamsudin et al. (2017) argued

that the role of EE in enhancing SEIs is uncertain. Such conflicting findings and contradictory results were also found for other factors that influence SEIs, a summary of which is given in Table 2.7.

Reference	Context	Determinants Used	Methodology Adopted	Findings
Engle et al., 2008	12 different countries	Attitudes, Social Norms, Behavioural Control and SEIs	Quantitative Research using Theory of Planned Behaviour	Significant contributing element differ by country but <b>social norms have significant impact of SEIs in each country</b>
Schwarz et al., 2009	Austria	Attitudes, Environmental conditions and SEIs	Questionnaire based survey among 2124 students	Both attitudes and university environment have <b>significant effect</b> on SEIs
Von Graevenitz et al., (2010)	Germany	EE and SEIs	Ex-ante Ex-post survey	EE has <b>negative impact</b> on SEIs
Diaz-Casero et al., (2012)	Portugal and Spain	Institutional Environment and SEIs	Survey Sample of 516 Spanish and 527 Portuguese	Institutional environment has <b>significant impact</b> on SEIs in Spain; <b>no significant impact</b> of institutional environment on SEIs was found in Portugal.
Bae et al., (2014)	----	Various factors and SEIs	Meta-analysis of 73 studies	<b>Significant</b> impact of EE on SEIs.
Yurtkoru et. al., (2014)	Turkey	Educational, Relational, Structural Support and SEIs	Questionnaire based survey among 425 students	Educational and Structural support were <b>insignificant</b> ; relational support was <b>significant</b>
Al Bakari and Mehrez, (2017)	4 Gulf States	Demographic variables and SEIs	Quantitative Research among 1500 students	Age, Academic major and work experience were <b>insignificant</b> ; Country, gender and academic level <b>significantly</b> influence SEIs
Canever et al., (2017)	Brazil	University Environment and SEIs	Quantitative Research among 566 students	University environment, whether public or private, has <b>no significant impact</b> on SEIs
Miranda et al., (2017)	Spain	Attitudes, Social Norms, Behavioural Control and SEIs	Quantitative Research using Theory of Planned Behaviour	<b>Attitude towards entrepreneurship significantly impact SEIs</b> which in turn are influenced by creativity, perceived utility and previous experience
Marques et al. (2018)	Portugal	EE, Family Background, Gender and SEIs	Online Questionnaire based survey	All factors having <b>significant</b> impact on SEIs
Karimi (2020)	Iran	Attitudes, Behavioural Control, Entrepreneurial Passion and SEIs	Quantitative Research using Theory of Planned Behaviour	<b>Significant indirect</b> relationship between entrepreneurial passion and EIs via TPB's cognitive antecedents

**Table 2.7 Different factors influencing SEIs**  
Source: Developed by the author

As shown in the above table, there is a lack of general agreement on the impact of different factors on SEIs, which makes the generalisability of the much-published research on this issue difficult, thus calling for further research in the area.

Historically, the literature related to the SEIs has categorised these factors as demographic-related factors, personality-related factors and contextual/environmental factors. However, compared to demographics and personality traits, environmental factors are under-researched (Zhang et al., 2014; Davey et al., 2016; Canever et al., 2017, Karimi, 2020). Therefore, this study is only focused on the university environmental factors, which are discussed in detail in the next section.

## **2.5 University Environment**

The environmental context refers to the surroundings of an organisation in which it operates (Kelly and Ashwin, 2013). Considering this, the University Environment refers to the institutional elements, variables, characteristics and interventions, including educational programmes and students' experiences with these interventions (Trebar, 2014). Generally, academic staff, physical infrastructure, curriculum, financial resources, research and innovation, and campus conditions form the university environment (Othman et al., 2012a). According to Ostroff et al. (2003), the meaning attached to policies, practices and procedures that individuals at university experience and their shared perceptions along with the expected behaviour constitute the university environment. Moreover, various studies have included external bodies in the university environment, such as regulatory system (Lim et al., 2010), economic system (Gohmann, 2012), infrastructure (Begley et al., 2005) and educational system (De Clercq et al., 2013). These external factors can be either positive or negative forces in the moulding of entrepreneurial desires. More specifically, the environment in which the entrepreneur operates includes macro-forces that both facilitate (e.g., availability of capital, well-developed infrastructure and availability of skilled workforce) and constrain (e.g., high interest rates, high inflation and complex regulations) entrepreneurial behaviour. The environment also provides the specific set of conditions that create the opportunity for a particular entrepreneurial concept (Kuratko, 2015).

The institutional environment influences the formation of intentions by shaping the perceptions and beliefs that individuals hold about behaving in a particular way (Franke and Luthje, 2004; Fishbein and Ajzen, 2010; Linan and Nabi, 2013). In the context of university settings, empirical research has shown that the environment in which the students interact daily not only influences their EI but also its antecedents (see for example: Luthje and Franke, 2003; Taormina and Lao, 2007; Linan and Nabi, 2013; Karimi et al., 2017; Shah and Lala, 2021). The university environment thus plays a critical role in encouraging SEIs by providing a supportive entrepreneurial environment (Kraaijenbrink et al., 2010; Mustafa et al., 2016; Shirokova et al., 2018). Yurtkoru et al. (2014), while highlighting the importance of a supportive institutional environment for the development of entrepreneurial activity, carried out a study on 425 students in Turkish universities. They concluded that an academic environment at universities that supports entrepreneurship may encourage students to engage in entrepreneurial activities, as it was found to have a positive effect on their entrepreneurial intentions. However, the composition and quality of support that the university environment offers vary significantly (Othman et al., 2012b). Therefore, the university environmental analysis is vital to understand and examine different forms of support which can have a positive or negative influence on the SEIs and the entrepreneurship activity (Luthje and Franke, 2003; Fini et al., 2012; Linan and Nabi, 2013; Canever et al., 2017).

Due to the socio-economic importance of entrepreneurship, an increased number of universities are offering specialised entrepreneurship programmes. Many universities now strive to develop and expand a supportive entrepreneurial environment by designing unique and challenging curricula and adopting more entrepreneurial offerings (Rasmussen and Sorheim, 2006; Diaz-Casero et al., 2012; Shirokova et al., 2018). These offerings specifically aim at supporting and fostering entrepreneurial spirit among the students. Similarly, governments around the world are also focusing on providing a conducive environment for the potential entrepreneurs to establish new ventures and thus help in the economic growth (Walter and Block, 2016). The steps taken in this regard include easy access to capital (De Clercq et al., 2013), structural support (Begley et al., 2005), and state subsidies and incentives (Mwasalwiba et al., 2012). Despite the increasing interest of both academics and governments in entrepreneurship and venture creation, there are a limited number of studies available

that consider the influence of environmental factors on SEIs at university level (Wang and Wong, 2004; Zhang et al., 2014; Davey et al., 2016; Canever et al., 2017). Moreover, the research findings at the intersection of university environment influence on SEIs are inconsistent due to the heterogeneity of the environment and research methods (Kritslaya, 2015). Therefore, there is a need to focus on a wider range of university environmental factors to form a holistic picture of the influence of university environment on SEIs.

The key university environmental factors – i.e., internal environmental factors (university entrepreneurial offerings) and external environmental factors – that may enhance SEIs are discussed in the next chapter.

## **2.6 Summary**

The key objective of this chapter was to review the literature and find out how entrepreneurship has been studied in the past and what approaches have been taken in the entrepreneurial research, with the view of having a better understanding of the entrepreneurial intentions of the students. Considering this review, it can be concluded that entrepreneurial research has adopted different routes in describing the phenomenon of entrepreneurial behaviour. These include the study of entrepreneurship in economic and psychological disciplines. The psychological approach started with an emphasis on the study of personality traits and demographic characteristics as the factors differentiating entrepreneurs from non-entrepreneurs. Following the limitations with these approaches, the literature identified the cognitive approach which focuses on the entrepreneurial intentions that precede the entrepreneurial behaviour. Moreover, the contextual/environmental factors are under-researched as compared to personality traits and demographic characteristics. Also, there is a lack of general agreement on the impact of different environmental factors on the entrepreneurial intentions, which makes the generalisability of the much-published research on this issue difficult, thus calling for further research in the area. These different environmental factors and the research framework for this study are discussed in the next chapter.

# **Chapter 3: Research Framework**

### **3.1 Introduction**

This chapter begins with a detailed review of the university environmental factors [both internal environmental factors in the form of entrepreneurial offerings (section 3.2) and external environmental factors (section 3.3)] having an impact on SEIs. Along with identifying research gaps and hypothesis development, the chapter also includes a discussion on the development of a preliminary conceptual framework (section 3.4), which will provide a base for further empirical research.

### **3.2 University Entrepreneurial Offerings**

A supportive entrepreneurial environment at university can provide students with the necessary knowledge, skills and networking opportunities that are vital to develop SEIs (Ooi et al., 2011; Saeed et al., 2015). Empirical studies attempting to identify different offerings by universities, in supporting and fostering entrepreneurship among students, remain limited (Walter et al., 2006; Davey et al., 2016; Perez et al., 2017; Ju and Zhou, 2020). Some studies, however, have attempted to identify university offerings that foster entrepreneurial spirit among students and boost their entrepreneurial actions. For example, Kraaijenbrink et al. (2010) identified that universities go beyond EE in supporting student entrepreneurship and proposed three aspects of university support, which are perceived educational support, perceived concept-development support and business development support. They developed and validated a new scale for entrepreneurial support by collecting data from 2417 students of one Australian and four European universities, and statistically concluded that these universities provide a great deal of educational support, some concept-development support and little business development support. Similarly, research conducted by Saeed et al. (2014), using a sample of 805 undergraduate students in Pakistan, concluded that the education and concept-development support provided by universities are perceived by students as highly influential on their EIs. Similarly, Kuttim et al. (2014) identified three basic types of roles played by universities in relation to entrepreneurship and start-up activities: curricular programmes (including lectures and seminars about entrepreneurship), co-curricular programmes (including networking and coaching opportunities) and financial resources (for venture creation). The different forms of university offerings and support towards fostering SEIs, as suggested by the literature review are summarised in the following table.

Sources	Entrepreneurial Offerings/Support at Universities		
Hytti and O'Gorman (2004)	Lectures	Seminars	Media Campaigns
Souitaris et al. (2010)	Learning	Inspiration	Incubation Resources
Kraaijenbrink et al. (2010)	Perceived Educational Support	Perceived Concept Development Support	Perceived Business Development Support
Kuttim et al. (2014)	Curricular Programmes	Co-curricular Programmes	Financial Resources
Davey et al. (2016)	Entrepreneurship Education	Entrepreneurial Support	Networking
Potishuk and Kratzer (2017)	Taught Component	Business Planning Component	University Support
Shirokova et al. (2018)	Workshops/Networking with Successful Entrepreneurs	Contact Platforms with Investors	Business Plan Contests

**Table 3.1 Types of University Entrepreneurial Offerings/Support**

Source: Developed by the author

As shown in the above table, the entrepreneurial support at universities is considered an important tool for increasing awareness of and interest in the entrepreneurial career path and starting new ventures. In order to understand the effect of university entrepreneurial offerings, it is important to measure the extent to which the students are influenced by these offerings. This can be done by measuring students' perceptions regarding university offerings (Kraaijenbrink et al., 2010). Recently, Bergmann et al. (2018) studied students' perceptions of the entrepreneurial environment in universities and found that university entrepreneurial measures have a positive but small effect on SEIs. A further review of the literature identified the main offerings (Entrepreneurship Education, Entrepreneurship Support Programmes, Entrepreneurial Networking, Supportive Faculty, Entrepreneurship Clubs, Entrepreneurial Resources, and Linkages with Society) provided by universities for the development of entrepreneurship among the students. Each is discussed next.

### 3.2.1 Entrepreneurship Education (EE)

Entrepreneurship Education is an entrepreneurial environment for the students where the curriculum is designed to fulfil their demand to become entrepreneurs (Ooi et al., 2011). EE includes both formal and informal education that equip the student with functional knowledge and the ability to build up the attitude and vision required to become an effective entrepreneur (Othman et al., 2012a; Gautam and Singh, 2015). Moreover, EE plays an important role in developing an environment that promotes

innovation (Tamizharasi and Panchanatham, 2010). Welsh (2014) states that EE has flourished as a source of educating the new workforce by developing their skills to adopt any discipline and be more innovative and entrepreneurial. Thus, it implies that EE is aimed at the development of the entrepreneurial tendencies among students for which the programmes and curricula are designed, to help the students become entrepreneurs (Sajjad, 2007). Byabashaija and Katono (2011) point out that the effect of general education has been explored but only a few studies have looked at EE, particularly at the university and tertiary institution level. In addition, Tanveer et al. (2013) maintain that, though the importance of EE has been recognised in the literature, limited empirical studies have been carried out to analyse the impact of entrepreneurship education separately from general education, specifically at the university level. This suggests a need to review entrepreneurship education within universities.

In general, literature suggests a positive and significant impact of EE at universities on the entrepreneurial tendencies of students (Peterman and Kennedy, 2003; Souitaris et al., 2007; Gerba, 2012; Zhang et al., 2014; Potishuk and Kratzer 2017; Boubker, et al. 2021). Hytti and O’Gorman (2004) established that providing EE through lectures and seminars across all levels of the education system (primary, secondary and higher) effectively increases the awareness and understanding of entrepreneurship. Kraaijenbrink et al. (2010) further confirmed the significant relationship between EE and SEIs. They used a six-item scale to measure students’ perceptions of the entrepreneurship education provided at universities and included statements like ‘my university offers project work focused on entrepreneurship’. Most recently, Perez et al. (2017), in their study on the role of universities in fostering entrepreneurial intentions among 630 Spanish university students, identified that almost 52% of the students perceived that education and training at the university equipped them with the necessary knowledge and skills required to establish their own businesses. This further emphasises the role of universities as providers of entrepreneurship education in fostering an entrepreneurial spirit among students.

Although the positive impact of EE provided by universities on the level of entrepreneurial interest has been highlighted in the literature, some studies have put it to a considerable debate by presenting conflicting results. For example, Audet (2004)

assessed the effect of enrolment on a compulsory entrepreneurship module at undergraduate level in a Canadian university. The 107 respondents estimated the probability of starting their own venture in the next three years at only 25%, which shows that EE had a low or insignificant effect on their perception of the desirability of launching their own business. Similarly, Olomi and Sinyamule (2009) found that participation on entrepreneurship courses had no significant effect on the start-up inclinations of a sample of 508 students from 12 different vocational training centres in Tanzania. In addition, Franco et al. (2010) found no or only weak influence of EE on entrepreneurial interests among students in Germany and Portugal. More recently, Sharma (2015) found no significant difference in the career choice preference between students who studied EE and those who did not. In his study, the majority of the sample of 500 students from different higher education institutes (HEIs) showed poor knowledge and awareness about opportunities for entrepreneurship as a career choice. A selection of studies relating to EE and SEIs are summarised in the following table.

Sources	Variables to measure	Results
Galloway and Brown (2002)	Entrepreneurship Education at university: a driver in the creation of high-growth firms	<b>Unclear</b> , effect of EE will be long term
Peterman and Kennedy (2003)	Entrepreneurship Education: influencing students' perception of entrepreneurship	EE <b>strongly</b> influences SEIs
Souitaris et al. (2007)	Entrepreneurship programmes for raising EI among science and engineering students	EE influences SEIs <b>significantly</b> (positive impact)
Olomi (2009)	Entrepreneurial Intentions of vocational education students	Participation in Entrepreneurship courses has <b>no significant effect</b> on SEIs
Oosterbeek et al. (2010)	Impact of EE on entrepreneurship skills and motivation	Effect of EE on the intention to become an entrepreneur is <b>negative</b>
Von Graevenitz et al. (2010)	Effects of Entrepreneurship Education	Intentions <b>decline</b> after studying Entrepreneurship and Business Planning courses
Martin et al. (2013)	Formation of Human Capital in Entrepreneurship: EE outcomes	Reported <b>positive</b> impact of EE on SEIs
Shamsudin et al. (2017)	Factors affecting EIs among Malaysian university students	Impact of EE on SEIs remains <b>uncertain</b>
Shirokova et al. (2018)	Role of culture in relationship between university entrepreneurial offerings and student start-up activities	Found a <b>positive</b> role of EE at universities in the development of SEIs

**Table 3.2 Summary of literature studying the impact of EE on SEIs**

Source: Developed by the author

These conflicting arguments in the literature call for further research to test the arguments made about the impact of EE on the career choice as an entrepreneur.

This study will thus test the following hypothesis in the Pakistani settings:

*H1a: EE has a significant relationship with SEIs.*

### **3.2.2 Entrepreneurship Support Programme (ESP)**

Entrepreneurship Support Programmes at universities include entrepreneurship-friendly activities such as business plan competitions, seminars, workshops, counselling, coaching and guest speakers, all of which are aimed at developing entrepreneurial skills among the students (Basu and Virick, 2008). An emerging stream of literature suggests a relationship between a university's ESP and the entrepreneurial activities of its students (Souitaris et al., 2007; Nabi et al., 2010; Saeed and Muffato, 2012; Bae et al., 2014). Basu and Virick (2008) maintain that the spirit of an educational place, its shared values and beliefs, can affect the entrepreneurial actions of its students. Similarly, Nabi and Linan (2011) argue that entrepreneurially aspiring students highly value the support and encouragement provided by universities through ESPs. Souitaris et al. (2007) maintain that ESPs can improve the ability to identify opportunities and enhance SEIs. In addition, Morris et al. (2015) point out that an ESP is among those factors, which may equip students with the relevant skills required to become entrepreneurs.

Several empirical studies have focused on investigating the effect of ESP's on SEIs. Quantitative-based studies have used different scales for measuring the effect of ESP on the attitudes towards entrepreneurship among students. For example, Kraaijenbrink et al. (2010) used statements like 'my university provides students with ideas to start a new business' with a five-point Likert scale. Peterman and Kennedy (2003) found that particular ESPs were effective in encouraging entrepreneurs to create a venture or to improve their business performance. They adopted a pre-test-post-test control group design for measuring the change in respondents' perceptions about entrepreneurship education. Both the control group and the group who participated in the Young Achievement Australia (YAA) enterprise programme were

analysed over a period of five months. At the completion of the YAA programme, the participants reported increased perceptions of the desirability and feasibility of starting a business (ibid, 2003). Similarly, meta-analysis carried out by Lorz et al. (2013) using a sample of 39 impact studies found a positive relationship between ESP's and SEIs. On the contrary, Souitaris et al. (2007) found no significant relationship between learning on an ESP and intentions. In addition, Walter et al. (2006) could not find any significant link between ESP and SEIs. On the other hand, Oosterbeek et al. (2010), using a longitudinal survey of 562 students, found that the ESPs at the institutions under study had a negative effect on the SEIs. Similarly, Von Graevenitz et al. (2010) also suggested an inverse relationship between ESP and SEIs. Most recently, Nabi et al. (2018), through their study of 150 students who participated in an ESP at a British university, suggested mixed findings. They suggested that, though the ESP participants demonstrated higher entrepreneurial learning and inspiration, the change in EIs from the beginning to the end of the year was not significantly different between the ESP and non-ESP participants. Thus, the studies investigating the relationship of ESP and SEIs have conflicting results and contradictory findings. Therefore, there is a need to investigate the relationship (positive or negative) of ESP and SEIs in different contexts. In this regard, the following hypothesis will be tested in the Pakistani context:

*H1b: ESP has a significant relationship with SEIs.*

### **3.2.3 Entrepreneurial Networking (EN)**

Entrepreneurial Networking (EN) involves the engagement of different stakeholders both inside and outside the university, such as academic faculty, student clubs, entrepreneurs and businesses, all of which are agents for promoting entrepreneurial actions (Groen, 2005). Some scholars, such as Potishuk and Kratzer (2017), term EN as 'Interaction with Practice', which includes networking events, visits, university-business partnership and collaborations with practitioners. The importance of EN has been highlighted in several studies (Kuratko, 2005; Groen, 2005; Walter and Dohse 2012; Shirokova et al., 2018). Ronstadt (1987) found that entrepreneurship success depends on both knowledge and a network of individuals with whom entrepreneurs are connected, i.e. entrepreneurship programmes at universities should also introduce students to successful entrepreneurs who may encourage them. Florin et al. (2003) maintain that EN not only allows the students to build their social capital by having

greater access to potential customers, suppliers, distributors, investors and other significant means, but also lets them learn how to interact with these groups. Access to resources and acquisition of knowledge are generally the main objectives of EN (Hughes et al., 2007). Morris et al. (2017) found that networking as a co-curricular activity promotes start-up activities and recommends that universities provide mentorships and networking opportunities for students. Therefore, to enhance the entrepreneurship knowledge and skills of students, it is vital for the students to connect with entrepreneurs such as through networking events and business linkages.

In order to investigate the impact of EN on SEIs, Mueller (2008) carried out a mixed study involving a sample of 465 students from 17 different universities from four German-speaking countries. Using ex-ante/ex-poste questionnaires, among other factors, the students were asked to evaluate the effectiveness of EN at their universities. Using a five-point Likert scale, three different items were used to conceptualise the utility of networking, e.g. 'During the class, I was able to get to know potential co-founders'. The study indicated the positive effect of networking on the entrepreneurship intentions of the students, along with other factors such as role models, business planning and knowledge (ibid, 2008). Similarly, Shirokova et al. (2018) studied the effect of different entrepreneurship-related offerings by universities on student start-up activities by using quantitative data collected for GUESS 2011 (the Global University Entrepreneurial Spirit Students' Survey) from a sample of 93,265 students at 489 universities in 26 different countries. Using multiple regression analysis, they found that an educational environment that enables social contacts and introduction to social networks has a significant positive effect on the scope of start-up activities undertaken by students. These results (positive relationship) need further testing in the Pakistani context.

Based on the above discussion, the following hypothesis can be formulated:

*H1c: EN has a significant relationship with SEIs.*

### **3.2.4 Supportive Faculty (SF)**

Faculty members at universities can play a significant role in promoting entrepreneurship education to foster young entrepreneurs (Gautam and Singh, 2015). Within the internal university environment, the qualifications and efficacy of lecturers involved in entrepreneurship education and training are important, as they must possess wide knowledge and experience in their respective fields (Murphy 2002; Heinonen 2007). Several studies have thus focused on the level of qualifications and the positive attitudes of lecturers, which are required to cultivate entrepreneurship among university students (Murphy, 2002; Heinonen, 2007; Othman et al., 2012a; Posavec, 2017; Black and Mischel, 2020; Allahar, 2021). Lecturers can play a significant role in fostering interest and developing entrepreneurial thinking among students (Othman et al., 2012a). Thus, experienced and knowledgeable lecturers should impart knowledge and skills relating to business and entrepreneurship to the potential entrepreneurs, i.e. students (Ladzani and Vuuren, 2002). Faculty members at universities not only need to be trained in idea-generation exercises but also in critical thinking and proposal writing skills so they in turn can develop students' entrepreneurial competencies (Ullah et al., 2017). In the same vein, Nabi et al. (2018) identified 'strong inspiration from faculty' as strongly affecting SEIs. Similarly, in the context of Sri Lankan universities, Perera and Igel (2017) confirmed that the influence of the faculty members or university lecturers on encouraging students to consider entrepreneurship is considerably high. On the other hand, Wibowo et al. (2018), through their study using a sample of 743 students at a vocational institute in Indonesia, found that teachers' creativity has no significant effect on SEIs. Therefore, it can be seen that the previous studies offer conflicting results in different contexts. The following hypothesis will thus be tested in the Pakistani settings:

*H1d: SF has a significant relationship with SEIs.*

### **3.2.5 Entrepreneurship Clubs (ECs)**

Entrepreneurship Clubs are mostly run by students; they involve different activities that are aimed at fostering an entrepreneurial spirit and furthering understanding of entrepreneurship and initiating small businesses. Compared to a formal lecture-based learning environment, ECs have proved to be slightly different and less structured

(Powell, 2013). Previous studies consider ECs vital in developing managerial skills (Rubin et al., 2002; Montes and Collazo, 2003; Pittaway et al., 2010). Self-directed and self-selected experiential activities at ECs may enhance students' involvement as compared to a traditional classroom setting and increase their experience in dealing with uncertainty (Othman et al., 2012a; Powell, 2013). Educational institutes including schools and universities can also play a role in entrepreneurship development by supporting students' ECs, which are also a way of providing students with an opportunity to engage in entrepreneurial activities (Ruskovarra et al., 2016). ECs at universities often serve as centres of excellence in helping students to establish their own ventures (Othman et al., 2012a).

Empirical research on the impact of ECs on the entrepreneurial activities of students has generally shown a significant relationship. Rubin et al. (2002), through their study on a sample of 600 undergraduate students, found that participants who were members of ECs exhibited teamwork, decision-making, initiative and superior communication skills compared to non-members. Moreover, Pittaway et al. (2010), through their qualitative study carried out in a UK-based university, reported that being involved in ECs provides greater opportunities for students to 'learn by doing' through action, and subsequent experience is gained. Although ECs are becoming more relevant to students' entrepreneurial activities, more studies are needed to mark their role and importance in different contexts (Penaluna et al., 2012; Pittaway et al., 2015). In addition, the existing literature evaluating their effectiveness and impact is limited (Jones et al., 2021).

Based on the above discussion, the following hypothesis can be formulated:

*H1e: ECs have a significant relationship with SEIs.*

### **3.2.6 Entrepreneurial Resources (ER)**

In EE-related literature, different types of resources that are available at universities for the development of student entrepreneurship have been identified. These include venture financing (Kuratko, 2005), incubator facilities (Hughes et. al., 2007), start-ups (Mueller 2008), seed funds (Saeed et al., 2014) and market research resources

(Potishuk and Kratzer, 2017). Several studies have investigated the role of these resources in enhancing SEIs. For example, Mueller (2008) identified that start-ups initiated by universities engage more people and play a significant role in transferring processes and technical innovations from research to business. Similarly, Brush et al. (2008) studied the effect of start-up activities on venture creation and found that the prospects of successful new venture creation are greater when the entrepreneurs are engaged in more start-up activities at early stages. Largely, research on the effect of different entrepreneurship-related resources available at universities on the student start-up activities, indicates that students who are engaged in more start-up activities are more likely to start a business (DeTienne and Chandler 2004; Brush et al., 2008; Pittaway et al., 2010; Volery et al., 2013; Nguyen et al., 2021). Guerrero et al. (2017) also found a significant impact of a university's business incubators on their students' start-up intentions. Contrary to these findings, many researchers (for example: Klyyer and Schenkel, 2013; Shirokova et al., 2018) found that the seed funding (university financial support) has a negative impact on the scope of students' start-up activities. These conflicting results need further investigation, particularly in the context of a developing countries such as Pakistan.

This discussion lends support to the following hypothesis:

*H1f: ER have a significant relationship with SEIs.*

### **3.2.7 Linkages with Society (LWS)**

Better linkages with the wider society in terms of networking and mentoring support are significantly important in improving SEIs (Fielden and Hunt, 2011). These linkages may include collaboration with local businesses/SMEs, government institutions and regional development agencies, and exchanges with other universities. Many researchers have identified that a university's links to external bodies assist students in accessing the resources available outside the university (Vohora et al., 2004; Mosey and Wright, 2007; Rasmussen and Borch, 2010). Prior research further indicates that universities with closer links to industry exhibit more entrepreneurial activity such as faculty involvement in new firms, greater number of spin-offs, university equity participation in start-ups and academics consulting with industry (Landry et al., 2006;

Prodan and Drnovsek, 2010; Ashraf et al., 2018; Lopes et al., 2020). Therefore, collaboration with other universities and governmental agencies is not only useful for objective academic assessment of proposed projects but also for bringing-in synergy (Ullah et al., 2017). Moreover, industrial linkages can bring financial resources closer to prospective students. Gulbrandsen and Smeby (2005), in their study including 1967 Norwegian academics, using logistic regression analysis, found that co-operation between university and industry has a significant and positive impact on the establishment of firms and patenting as an output of research and development activities. Similarly, Walter and Doshe (2012), through their study on a sample of 1949 students in German universities, found that a university's collaboration with regional industry has a significant role in shaping, motivating and facilitating entrepreneurial activity among students.

Based on the above discussion, the following hypothesis can be made:

H1g: LWS have a significant relationship with SEIs.

A selection of studies discussing the above-mentioned factors from the university's internal environment can be summarised as follows:

Factors	References	Context	Findings
Entrepreneurship Education (EE)	Peterman and Kennedy (2003)	Australia	EE <b>strongly</b> influences SEIs
	Olomi and Sinyamule(2009)	Tanzania	EE has <b>no significant effect</b> on SEIs
	Oosterbeek et al. (2010)	Netherlands	EE has <b>negative</b> impact on intentions to become entrepreneur.
	Sharma (2015)	India	<b>No significant</b> effect of EE on SEIs
	Shamsudin et al. (2017)	Malaysia	Impact of EE on SEIs remain <b>uncertain</b>
	Shirokova et al. (2018)	26 Different Countries	Significant <b>positive</b> impact of EE on SEIs
Entrepreneurship Support Programme (ESP)	Oosterbeek et al. (2010)	Netherlands	ESP has <b>negative</b> impact on SEIs
	Lorz et al. (2013)	Meta-Analysis	ESP has <b>positive</b> impact on SEIs
	Morris et al. (2015)	Canada	ESP <b>strongly</b> influences SEIs
	Nabi et al. (2018)	UK	<b>Mixed findings</b> about impact of ESP on SEIs
Entrepreneurial Networking (EN)	Mueller (2008)	4 German-Speaking countries	<b>Positive</b> influence of networking on SEIs was reported
	Shirokova et al. (2018)	26 Different Countries	Significant <b>positive</b> impact of EN on SEIs
Supportive Faculty (SF)	Perera and Igel (2017)	Sri Lanka	Influence of teachers in encouraging students for entrepreneurship is considerably <b>high</b>
	Wibowo et al. (2018)	Indonesia	Faculty's support has <b>no direct</b> effect on SEIs
Entrepreneurship Clubs (ECs)	Rubin et al. (2002)	America	Influence of ECs on SEIs was <b>significant</b>
	Pittaway et al. (2010)	UK	ECs have a <b>significant</b> influence on SEIs
Entrepreneurial Resources (ER)	Mueller (2008)	4 German-Speaking countries	Start-ups at universities have <b>significant</b> impact on SEIs
	Volery et al. (2013)	Switzerland	University's start-up support <b>significantly</b> influence SEIs
	Guerrero et al. (2017)	Mexico	University's business incubators have <b>positive impact</b> on SEIs
	Shirokova et al. (2018)	26 Different Countries	Seed funding from university has <b>negative impact</b> on the scope of students' start-up activities
Linkages With Society (LWS)	Gulbrandsen and Smeby (2005)	Norway	University's collaborations had <b>significant and positive impact</b> on students' start-up activities
	Walter and Doshe, (2012)	Germany	University's linkages with industry had <b>significant and positive impact</b> on students' start-up activities
	Towers et al. (2020)	UK, France, Indonesia	university–enterprise collaboration is <b>significant</b> to promote graduate employability and entrepreneurship

**Table 3.3 Summary of literature studying the impact of internal environmental factors on SEIs**

Source: Developed by the author

The above table provides a summary of the critical factors which have been studied by various researchers in different contexts. The findings show conflicting and contradictory results which signifies a need for further investigation. Moreover, the previous studies and their outcomes summarised in the above table provides justification for the hypotheses formulated above.

Along with identifying the major internal environmental factors (university entrepreneurial offerings), it is also important to point out the external environmental factors that may affect the SEIs.

### **3.3 External Environmental Factors**

As discussed in previous sections, SEIs can be enhanced by different university offerings; however, they may also depend on the characteristics of the external environmental factors (Fini et al., 2012; Walter and Block, 2016; Karimi et al., 2017). These factors include easy access to capital (De Clercq et al., 2013), structural support (Begley et al., 2005), availability of a skilled workforce (Wong and Choo, 2006) and state subsidies or incentives (Mwasalwiba et al., 2012). The next sections explain these environmental factors in detail.

#### **3.3.1 Capital Availability (CA)**

Financial capital not only serves as a direct source of equity for financing new venture creation but also facilitates access to bank loans by serving as collateral while seeking debt capital (Lofstrom et al., 2014). This led researchers (Bhide, 2000; van Stel et al., 2007; Shirokova et al., 2018) to establish that students lacking access to financial capital are more likely to become wage-earners than entrepreneurs. Apart from personal liquidity, other financial resources include formal bank financing (Bruton et al., 2009) venture capital (Li and Zahra, 2012) and financial support by family (Maden, 2015). Previous research related to personal liquidity for venture creation identified higher interest rate, too much documentation (Bruin et al., 2007), low level of initial capital and poor access to financial capital (Gundry et al., 2002) as major barriers. Similarly, Mwasalwiba et al. (2012) pointed out that apparent difficulties in arranging capital and a lack of financial resources can negatively affect the entrepreneurial intentions of students. Therefore, access to ample financial resources is required to promote entrepreneurial decisions (De Clercq et al., 2013).

Empirical research on the impact of availability of financial resources on the entrepreneurial activity by nascent entrepreneurs shows conflicting results. For example, Bowen and De Clercq (2008), using data on 40 countries over the period of 2002-2004, found that financial resources aimed at entrepreneurship significantly affect the entrepreneurial orientation among entrepreneurs. On the other side, Klyver and Schenkel (2013) and Shirokova et al. (2018) found a negative correlation between financial capital and the decision by individuals to start a business. These inconsistent results can be tested in a different context. Based on the above discussion, the following hypothesis can be formulated, which will be tested in the Pakistani context:

*H2a: CA has a significant relationship with SEIs.*

### **3.3.2 Government Policies (GP)**

Government policies represent the regulation and support that businesses get from government agencies (Shah and Lala 2021). These include any course of action that aims to improve and regulate entrepreneurship in terms of support, funding and implementation guidelines by the government (Obaji and Olugu, 2014). Pals (2006) maintains that governments need to enact policies that encourage entrepreneurship and make a conducive environment for entrepreneurs. Also, as the government is in lead for entrepreneurial development, it would provide the much-required resources within its capability including provision of conducive environment for businesses. Therefore, government policies in relation to entrepreneurial practice should be targeted at encouraging entrepreneurship by making a favourable environment for entrepreneurs (Teixeira et al., 2018). Shah and Lala (2021) argued that the government regulates the business environment through its functionaries and regulatory framework, which either supports the entrepreneurs or discourages them. Therefore, the ease or difficulty to access and exploit resources also acts as an important determinant of students' choice of pursuing entrepreneurship.

The direction of entrepreneurial activity by graduate entrepreneurs is directly influenced by government policies such as tax subsidies for encouraging venture creation (Audretsch et al., 2007). Based on the findings of an empirical study conducted in Tanzania, investigating the contextual enablers and hindrances to graduate entrepreneurship, Mwasalwiba et al. (2012) demonstrated that changes in

public institutions and government policies encourage/discourage entrepreneurial spirit. Kovarova and Simsova (2019) identified strict policies and complex administration as factors posing difficulties for students in Czech Republic in carrying out entrepreneurial activities.

Along with supportive policies, governments should not only reduce the bureaucratic procedures involved in new venture creation but also make them easier to follow (Maden, 2015; Faisal et al., 2017; Mganda, 2018). Begley et al. (2005) argue that a government's economic regulations and bureaucratic hurdles (red tape) in the form of licensing, compliance, inspections and procedural requirements discourage entrepreneurial activity. McMullen et al. (2008), through their study of entrepreneurship-related data of 37 countries, found that entrepreneurial activity is differently influenced by the government's limitation of economic freedom and the entrepreneur's intention to engage in business creation. Although generally government support is considered vital for the development of entrepreneurship, empirical research has also shown that business subsidies do not provide a significant boost for nascent ventures (Sebora et al., 2009; Koski and Pajarinen, 2013). Based upon a data set covering 11 years of data collection from two different government support programmes in two regional contexts, Bosma and Sternberg (2014) found that the government support received by nascent entrepreneurs has a weak impact on start-up success. Similarly, Teixeira et al. (2018), based on data from 22 EU countries, found that government support and policies have no significant impact on SEIs. From the above discussion, the following hypothesis is proposed:

*H2b: GP have a significant relationship with SEIs.*

### **3.3.3 Regulatory Environment (RE)**

The regulatory environment not only includes the legal system, i.e. the formal rules and regulations concerning venture creation and its enforcement (Lim et al., 2010), but also bankruptcy laws (Lee et al., 2011). It can promote and inhibit entrepreneurship (Klapper et al., 2006; Stenholm et al., 2013) by shaping the level of risk involved in the venture creation (Baumol and Strom, 2007). An environment with low taxes, low regulations and private property rights is needed to encourage entrepreneurial activity

(Girlo and Thurik, 2005). Entrepreneurial activity is higher in economies with less regulation, low entry costs and few entry barriers (Klapper et al., 2006). In contrast, entrepreneurial activity may be hampered by unfavourable regulations as nascent entrepreneurs are less likely to create ventures in countries with strict laws regarding licensing, registration, etc. (Kim and Li, 2014).

The empirical studies on the impact of regulatory environment and entrepreneurial activity among nascent entrepreneurs show diverse results. Using a sample of 3,371,073 firms in 21 countries, Klapper et al. (2006) investigated the effect of market entry regulations on the venture creation and growth of incumbent firms. They found that entry regulations have a significant adverse effect. In contrast, Bowen and De Clercq (2008), while using data from 40 countries over a period of 2 years, did not find support for the impact of regulatory environment on the entrepreneurial activity. Using sample of 43 countries over a period of five years, Sambharya and Musteen (2014) explored the influence of cultural and regulatory environment on the type of entrepreneurial activity. They reported that the impact of regulatory quality varies depending on the type of entrepreneurial activity, i.e., it stimulates opportunity-driven entrepreneurship but does not seem to have a profound impact on necessity-driven entrepreneurship. Contrarily, Turulja et al. (2020) found that there was no significant impact of formal and regulatory support on the SEIs in Bosnia and Herzegovina. Considering the above discussion, the following hypothesis is suggested:

*H2c: RE has a significant relationship with SEIs.*

### **3.3.4 Economic Environment (Eco)**

The economic environment not only included the general economic conditions of the country but also concerns with the government economic policies and regulations (Begley et al., 2005). Literature review in this regard suggests that entrepreneurial activities in a society in general and among students specifically are influenced by the economic conditions. Various researchers (such as Van Stel et al. 2007; Schwarz et al. 2009; Wang et al., 2013; Roman and Rusu, 2016b) argued that the level of country's economic development has its impact on the entrepreneurial activities being carried out by the nascent entrepreneurs. Similarly, Wennekers et al. (2010) pointed

out that entrepreneurial venture creation rates are higher in poor countries and decline as economies become wealthier. Government economic policies including its expenditures on economic affairs are also identified to have an important role in promoting entrepreneurial activities among students (Kim et al., 2010). Literature also identified unemployment (Thurik et al., 2008), national and regional economic conditions (Bosma and Schutjens, 2011), foreign direct investment (FDI) (Albulescu and Tamasila, 2014) and economic stability (Sayed and Slimane, 2014) to have impact on the entrepreneurial activities.

The empirical studies on the impact of economic environment on the student's choice of selecting entrepreneurship as their career after graduation generally show contradictory findings. Kim et al. (2010) noted that an increase in the public expenditure for stimulating start-ups increases the level of entrepreneurial activity. Awang et al. (2014) proved that favourable economic environment has significant influence on the entrepreneurial intentions of students in Malaysia. Similarly, various studies (such as Gurbuz and Aykol, 2008; Schwarz et al. (2009); Turker and Selcuk, 2009) also provide empirical evidence that justify economic environment to have positive impact on the entrepreneurial intentions of students. On the other hand, Amoros et al. (2019) showed that economic development positively relates to opportunity-driven entrepreneurship and negatively associated with necessity-driven entrepreneurship. Similarly, Tang and Koveos (2004) found that economic growth in high-income countries negatively affect entrepreneurship while mixed findings were reported for middle- and low-income countries. Albulescu and Tamasila (2014) while investigating the influence of FDI on entrepreneurial activity in 16 European countries, concluded that FDI do not have an impact on the overall entrepreneurial activity. In view of the above observations, the following hypothesis can be formulated:

*H2d: Eco has a significant relationship with SEIs.*

### **3.3.5 Structural Support (SS)**

The structural support available to the nascent entrepreneurs may be in the form of well-functioning physical infrastructure, entrepreneurial support services, consulting firms and well-developed road networks, etc. (Niosi and Bas, 2001; Foo et al., 2005;

Bosma and Sternberg, 2014). These structural support mechanisms may nurture entrepreneurial activity (Begley et al., 2005) and help in developing entrepreneurship for sustaining economic growth (Mganda, 2018).

Empirical studies linking structural support for entrepreneurship and an individual's career choice also provide inconsistent results. Begley et al. (2005), from their study which comprised a sample from 13 different countries, found that entrepreneurship is stimulated by a supportive infrastructure which includes business-related support, educational resources, and training programmes along with physical infrastructure such as universities, technical institutes, and vocational centres. Similarly, Denanyoh et al., (2015) find a consistent positive relation between SEIs and educational, family, and structural support in Ghana. Contrarily, Schwarz et al. (2009), from a study of 2124 students from different disciplines in Austrian universities, concluded that structural support did not have any significant impact on SEIs. Building on the above discussion, the following hypothesis is proposed:

*H2e: SS has a significant relationship with SEIs.*

### **3.3.6 Workforce Availability (WA)**

New venture creation and entrepreneurial success highly depends on the availability of a skilled workforce (Baker et al., 2005; Begley et al., 2005; Lim et al., 2010; Shirokova et al., 2018). Countries with a higher-quality education system have thus a more entrepreneurially munificent environment because of the presence of skilled human resources (Begley et al., 2005). Institutional arrangements such as entrepreneurial and technical training produce skilled and knowledgeable human capital, which significantly influences the allocation of entrepreneurial efforts in a society (Bowen and De Clercq, 2008). Similarly, Estrin et al. (2016) pointed out that education and training increase an individual's skills and knowledge, including those necessary for recognising entrepreneurial opportunity, thus augmenting the range of entrepreneurial activities. Lack of skilled and experienced human capital also hinders entrepreneurial spirit (Baker et al., 2005). Using a sample of 11,320 individuals from 32 countries for their study on the outcomes of entrepreneurship education, Walter and Block (2016) found that scarcity of skilled human resources leads potential

entrepreneurs to decide against engaging in entrepreneurial activity. Therefore, it is important for governments and policy makers to implement training programmes to enhance the skills and abilities of the workforce (Lim et al., 2010 and Estrin et al., 2016). In view of the above observations, the following hypothesis can be formulated:

*H2f: WA has a significant relationship with SEIs.*

Some of the studies discussing all the above-mentioned factors from the university's external environment can be summarised as follows:

Factors	References	Context	Findings
Capital Availability (CA)	Bowen and De Clercq (2008)	40 Different Countries	Financial resources aimed at entrepreneurship <b>positively</b> affect the entrepreneurial orientation among entrepreneurs.
	Klyver and Schenkel (2013)	41 Different countries	<b>Negative correlation</b> between financial capital and the decision by individuals to start business was reported.
	Shirokova et al. (2018)	26 Different Countries	Seed funding from university has <b>negative impact</b> on the scope of students' start-up activities.
Government Policies (GP)	McMullen et al. (2008)	37 Different Countries	Entrepreneurial activity is <b>differently influenced</b> by the government's limitation of economic freedom.
	Koski and Pajarinen (2013)	Finland	Business subsidies <b>do not provide a significant boost</b> for nascent ventures
	Sternberg (2014)	Germany	Government support received by nascent entrepreneurs has a <b>weak impact</b> on start-up success.
	Teixeira et al. (2018)	22 EU countries	Government support and policies have <b>no significant impact</b> on SEIs.
Regulatory Environment (RE)	Klapper et al. (2006)	24 EU countries	Market entry regulations have <b>significant adverse effect</b> on the venture creation and growth of incumbent firms.
	Bowen and De Clercq (2008)	40 Different Countries	Regulatory environment have <b>no impact</b> on student's entrepreneurial activities.
	Sambharya and Musteen (2014)	43 Different Countries	Regulatory environment <b>differently</b> affects entrepreneurial activities by nascent entrepreneurs.
Economic Environment (Eco)	Awang et al. (2013)	Malaysia	Favourable economic environment has <b>significant impact</b> on SEIs
	Bux and Honglin (2016)	China and Pakistan	Perceptions of economic opportunities have a <b>positive effect</b> on SEIs.
	Amoros et al. (2019)	51 different countries	Country's level of economic development can <b>affect</b> the entrepreneurial activities.
Structural Support (SS)	Begley et al. (2005)	13 Different Countries	Supportive infrastructure <b>stimulates</b> entrepreneurial activities.
	Schwarz et al. (2009)	Austria	Structural support have <b>no significant impact</b> on SEIs.
	Kor et al. (2020)	Netherlands	Perceived structural support had a <b>significant effect</b> on SEIs.
Workforce Availability (WA)	Walter and Block (2016)	32 Different Countries	Scarcity of skilled workforce led potential entrepreneurs to decide <b>against</b> engaging in entrepreneurial activities.
	Hoda et al. (2020)	Saudi Arabia	Availability of skilled and experienced workforce has significant impact on SEIs.

**Table 3.4 Summary of literature studying the impact of external environmental factors on SEIs**

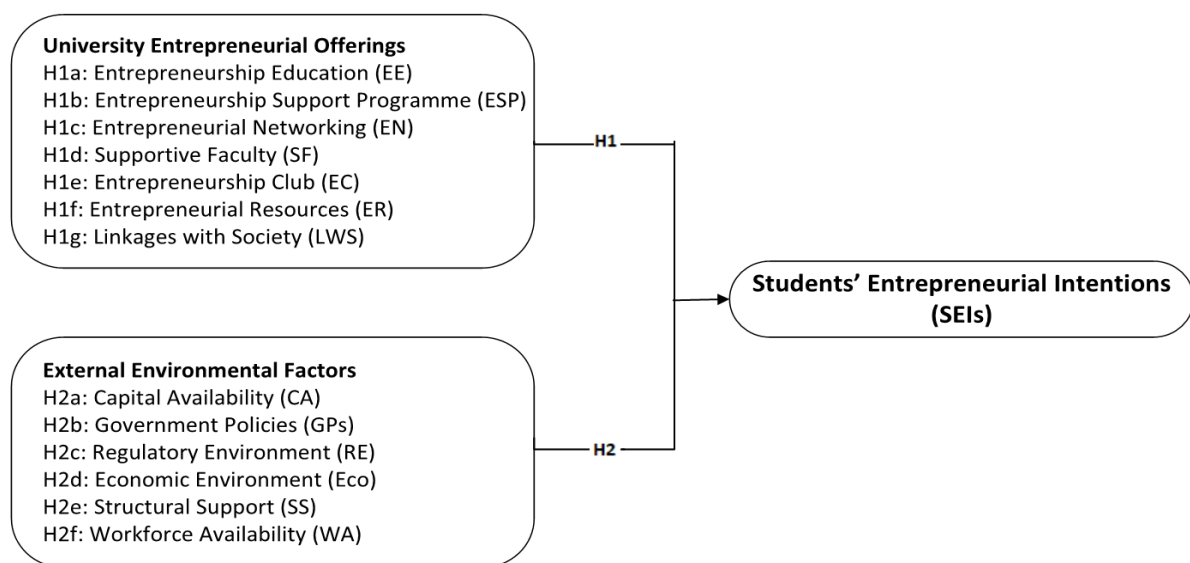
Source: Developed by the author

It can be seen from the above discussion and the table 3.4 that there is inconsistency in the findings of the pre-existing literature; therefore, more research is required to improve our understanding of the antecedents of SEIs (Schwarz et al., 2009). Particularly, developing an interactive model which aims at explaining the impact of environmental conditions on SEIs seems essential. Having now formulated the

research hypotheses, the next section explains the conceptual framework developed to achieve the research objectives outlined in Chapter 1. It is pertinent to mention that this conceptual framework is based on the Luthje and Franke Model (LFM) discussed in the preceding chapter.

### 3.4 Conceptual Framework

The conceptual framework provides a relationship between the dependent and independent variables by outlining possible courses of action or preferred approaches that the researcher may undertake in order to achieve the research objectives (Maxwell, 2013). The literature related to the impact of the university environment on SEIs highlights many intervening factors related to entrepreneurship. The literature review, in this and the preceding chapter, revealed the limited number of studies examining these issues and factors in the developing country context. In addition, most of the previous research on EIs studied the impact of demographics, age, gender, role models, culture, social norms and institutional dimensions on EIs, but the current research aims to study the impact of the university environment on SEIs. This addresses the need to develop a conceptual framework by gathering the identified themes from the literature. Having reviewed the related literature and the various rationales given for adding several factors of the university environment, the potential causal relationships among the independent variables (internal and external environmental factors) and the dependent variable (SEIs) can be exhibited as below.



**Figure 3.1 Proposed Conceptual Framework**

Source: Developed by the author

Based on the related literature, the proposed model in Figure (3.1) postulates seven ‘internal environmental factors’ and six ‘external environmental factors’ that may have a significant impact on SEIs. The conceptual framework is expected to achieve the research objectives by not only identifying different university offerings but also exploring different external environmental factors and their impact on SEIs.

Based on the literature review and developed framework, the presumed relationships among all research variables through the research hypothesis can be drawn as follow:

<b>H1: Internal Environmental Factors/ University Entrepreneurial Offerings and SEIs</b>	
<b>H1a</b>	EE has a significant relationship with SEIs.
<b>H1b</b>	ESP has a significant relationship with SEIs.
<b>H1c</b>	EN has a significant relationship with SEIs.
<b>H1d</b>	SF has a significant relationship with SEIs.
<b>H1e</b>	EC have a significant relationship with SEIs.
<b>H1f</b>	ER have a significant relationship with SEIs.
<b>H1g</b>	LWS have a significant relationship with SEIs.
<b>H2: External Environmental Factors and SEIs</b>	
<b>H2a</b>	CA has a significant relationship with SEIs.
<b>H2b</b>	GP have a significant relationship with SEIs.
<b>H2c</b>	RE has a significant relationship with SEIs.
<b>H2d</b>	Eco has a significant relationship with SEIs.
<b>H2e</b>	SS have a significant relationship with SEIs.
<b>H2f</b>	WA has a significant relationship with SEIs.

**Table 3.5 Set of Hypotheses for the Research**  
**Source: Developed by the author**

### 3.5 Summary

This chapter has reviewed several empirical studies of EIs in order to establish a theoretical framework and to identify the factors that are considered important antecedents of SEIs in Pakistan. While doing so, both the internal and external environmental factors were identified that have major influence on the SEIs. The hypothesised relationships among the model factors were established. The conceptual framework postulates seven ‘internal environmental factors’ and six ‘external environmental factors’ that may have a significant impact on SEIs. Having developed a research framework and set of hypotheses, the following chapter discusses the methodology and method adopted by the study for achieving the research aim and objectives.

# **Chapter 4: Research Methodology**

## **4.1 Introduction**

This chapter begins with an introduction of the research methodology, followed by discussion regarding the philosophical stance adopted for the study (section 4.3). Section 4.4 deals with the research paradigms. The research approach and strategy are discussed in sections 4.5 and 4.6 respectively before a detailed discussion of the research methods used to obtain quantitative and qualitative data appears in section 4.7. A detailed description of phase one of the quantitative data collection, research instrument development, pilot study, population, sampling and statistical tests utilised to analyse the collected data is presented in section 4.8. Similarly, a detailed description of phase two of qualitative data collection, sampling, interview design and data analysis is provided in section 4.9. Section 4.10 clarifies the ethical considerations taken into account by the researcher in conducting the study, and finally, a brief summary is offered in section 4.11.

## **4.2 Research**

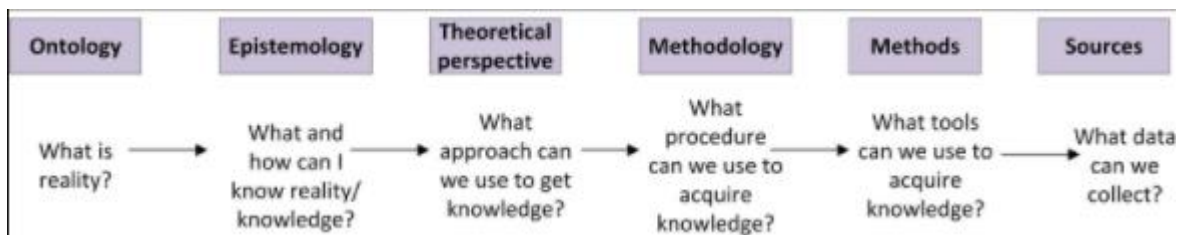
Research is the rational investigation to find an answer to a question as it helps to identify and understand the issue or problem under investigation by evaluation (Burns, 2000). To achieve objectives, researchers use different methods. Patton (2002) maintains that a well-defined research methodology should direct any type of research. This well-defined research methodology includes outlining the research philosophy, research approach, research strategy and data collection and its subsequent analysis for achieving the desired research objectives. To investigate the impact of the university environment in fostering EIs among business students at universities in the KP region of Pakistan, it is important to define a methodology to achieve the research objectives. The purpose of this chapter is to communicate this.

## **4.3 Research Philosophy**

Research philosophy describes the way a researcher thinks about the development of knowledge and its nature. Researchers in social sciences must start their research design by recognising the theoretical and philosophical assumptions supporting their investigations (Saunders et al., 2015a). It has been recognised as a set of basic beliefs and perceptions that support the researcher's viewpoint about a certain phenomenon; the truth behind its presence, how to learn more about it, and the theories that the

researcher uses in defending that perspective. It represents a researcher's basic beliefs about how they see the world and guides any research project, from the point of choosing a suitable research design, through data collection and analysis methods, to the way in which the findings are reported (Collis and Hussey, 2014).

This section is thus concerned with the philosophical stance of the researcher, in which the method to be adopted for the research is decided. Crotty (1998) identified that choosing research method can be bewildering as it is often difficult to make sure the appropriateness of the selected method and its consistency with the theoretical perspective undertaken for the research. Therefore, any academic research and more specifically social research should follow a logical sequence by firstly identifying the philosophical stance taken for the development of knowledge, followed by the methodology and the methods adopted for achieving the research objectives. This research follows a robust research process suggested by Crotty (1998) as shown in the following figure.



**Figure 4. 1 Research Process**

Source: Crotty (1998)

In the above process diagram, ontology refers to the reality that researchers are investigating, whilst epistemology refers to the relationship between that reality and the researcher; the particular set of techniques that a researcher uses to investigate the reality in question is considered to be the methodology (Trochim and Donnelly, 2006). A brief discussion on the ontological and epistemological stances taken for this research is given here.

#### **4.3.1 Ontology and Epistemology**

To any academic research, two major questions are fundamental. The first asks how we know what reality is and the second asks how we can acquire and know that we

possess valid knowledge. These questions relate to the ontological and epistemological stances undertaken by the researcher.

The ontological question addresses the form and nature of reality and what can be known about these. Ontology, therefore, refers to the nature and form of the reality that can be discovered (Eriksson and Kovalainen, 2014). Duberley et al. (2012) explain that 'ontological assumptions deal with the essence of phenomena and the value of their existence' (p7). Hanson et al. (2005) stated that ontology within the social sciences refers to those primary principles that individuals hold about the nature of the research issue. They considered that ontology relates to the researcher's belief in predicting the operation of social behaviour in a way that is similar to that of the natural world, arguing that the term refers to the belief of a researcher about whether society is inanimate or a living thing. An ontological perception can be either objective or subjective. Objectivism refers to a view of reality in which objects exist independently of social actors, while subjectivism, dealing with social phenomena, suggests that the interaction of social actors forms reality (Johnson and Duberley, 2000). An objective ontological view regards the world and reality as independent and distinctive from the individuals, while a subjective ontology argues the existence of a link and dependence between the reality and people (Eriksson and Kovalainen, 2014). Denzin and Lincoln (2005) argue that ontology relates to the question of whether reality is single, objective and concrete or whether it is subjective, multiple and created by people. Therefore, it relates to meaningful questions of how things really are and how things really work.

On the other hand, the epistemological question asks how knowledge is acquired, and how we know what we know. Epistemology, therefore, is concerned with the nature of knowledge and different methods of gaining knowledge. It can be described as the philosophy of knowledge, especially with regard to its methods, validity, nature, sources, limits and scope (Jonker and Pennink, 2010). The epistemological approach not only considers the link between the researcher and the subject under investigation (Guba and Lincoln, 1994) but it also considers what can be termed as valid knowledge (Hussey and Hussey, 1997). Creswell and Clark, (2017) described that the term epistemology refers to the part of philosophy that unearths the answers to questions such as 'How does a researcher acquire the sought-after knowledge?' and 'What does it mean to know?'. This set of philosophical beliefs held by the researcher is called

research paradigm. Although researchers vary in terms of their philosophical stance to the research, Denzin and Lincoln (2005) suggest two major paradigms, named positivism and interpretivism. Whereby, positivist sees the world as a single reality and believes that knowledge can only be acquired objectively, directly and through tangible form. While, interpretivist believes that reality exists in multiple forms, and that knowledge is acquired subjectively and is socially constructed by the way we interact with each other in daily life (Collis and Hussy, 2014). A detailed discussion of which is given in the section 4.4.

The ontological position of this research is based on the assumptions that knowledge can be attributed in part to be in possession of people and at the same time a result of interactions (Jonker and Pennink, 2010). This study considers the impact of the university environment on the entrepreneurial intentions of students. This reality is seen to be external to the researcher and thus can be observable and objectively measured (quantified) through the operationalization of the students' entrepreneurial intentions (as available in the literature). However, it is also believed that as the quantifying of the student's behaviour (phenomenon) is through perception-based questions such as Likert Scales. Therefore, the involvement of some form of subjectivity can't be ruled out. As for epistemological position, the belief is that the research and what is researched are totally independent from each other. Thus, mainly the objectivity of the investigation will be pursued with the quantitative analysis of the study's variables, with no interference from the researcher.

#### **4.4 Research Paradigms**

Paradigms are basic belief systems based on ontological, epistemological and methodological assumptions (Guba and Lincoln, 1994). Willis et al. (2007) define the paradigm as a 'comprehensive belief system, world view, or framework that guides research and practice in a field' (p.8). Historically, two views or paradigms dominate the literature on social science studies: interpretivism and positivism (Collis and Hussey, 2014; Aliyu et al., 2014). To select the appropriate method for undertaking this research, it is necessary to understand and explain both paradigms.

#### **4.4.1 Positivist Paradigm**

First proposed by a French philosopher, Auguste Comte (1798 – 1857), the positivist paradigm defines a worldview to research, which is grounded in what is known in research methods as the scientific method of investigation (Kivunja and Kuyini, 2017). Positivist scholars hold the view that reality is objective and independent of the researcher's control. Hence, the researcher should be isolated from the observed phenomenon and remain neutral towards the people being investigated (Aliyu, et al. 2014; Collis and Hussey, 2014; Easterby-Smith et al., 2018).

In its broadest sense, positivism holds that the goal of knowledge is simply to describe the phenomena that we experience. The purpose of science is simply to stick to what we can observe and measure (Trochim, 2000). As such, positivists separate themselves from the world they study, while researchers within other paradigms acknowledge that they have to participate in real-world life to some extent so as to better understand and express its emergent properties and features (Healy and Perry, 2000). According to the positivist philosophy, science is seen as the way to get at truth, to understand the world well enough so that it might be predicted and controlled. It is chosen as the preferred worldview for research which tries to interpret observations in terms of facts or measurable entities (Fadhel, 2002). Research located in this paradigm relies on deductive logic, formulation of hypotheses, testing those hypotheses, and offering operational definitions and mathematical equations, calculations, extrapolations, and expressions to derive conclusions (Kivunja and Kuyini, 2017). It aims to provide explanations and to make predictions based on measurable outcomes. Similarly, Alharahsheh and Pius (2020) explained that the researcher would aim to find causal relationships between the data gathered to further enable the creation of law-like generalisations. Furthermore, the researcher would use and include key universal rules and laws to support and explain the studied behaviour or event within groups (Kivunja and Kuyini, 2017; Alharahsheh and Pius, 2020).

On the other hand, some scholars have criticised positivism for its inability to consider the characteristics of the human elements in the organisation and it has been labelled 'unrealistic' (Aliyu et al., 2014; Uduma and Sylva, 2015). Moreover, statistical data can be misused, leading to misinterpretation within research if incorrect tests are performed. Furthermore, the results of the test as well as its significance are largely

dependent on the sample size (Aliyu et al., 2014; Kivunja and Kuyini, 2017; Alharahsheh and Pius, 2020). Similarly, positivism is more reliant on the status quo, with more of the research findings being descriptive. Therefore, it might be challenging for researchers to gain further insight into in-depth issues to be included in their research (Wilson 2014; Alharahsheh and Pius, 2020). To conclude, this paradigm helps positivist researchers clearly understand the objects by empirical tests and methods such as sampling, measurement, questionnaire and focus group discussion. This suggests that insights provided by positivist researchers may have a high standard of validity and reliability (Cohen et al., 2011) and can be generalised to the larger population (Johnson and Onwuegbuzie, 2004). However, as already mentioned, positivism has often been criticised for its inability to consider the characteristics of the human elements in the organisation, and so the interpretivist paradigm has been put forward as an alternative.

#### **4.4.2 Interpretivist Paradigm**

Taking account of various scholars, it is theoretically understood that the interpretivist paradigm allows researchers to view the world through the perceptions and experiences of the participants (Thanh and Thanh, 2015). The interpretivist paradigm is originally rooted in the fact that methods used to understand knowledge related to human and social sciences cannot be the same as those used in physical sciences because humans interpret their world and then act based on such interpretation (Hammersley, 2013); i.e., it is founded on the premise that the social world consists of meaningful actions (Tombs and Pugsley, 2020). Consequently, interpretivists adopt a relativist stance in which a single phenomenon may have multiple interpretations rather than a truth that can be determined by a process of measurement. Virtually, with an interpretivism perspective, researchers tend to gain a deeper understanding of a phenomenon and its complexity in its unique context instead of trying to generalise the base of understanding for the whole population (Creswell, 2013). Similarly, to understand what is occurring and make sense of it, researchers must achieve a degree of empathy to allow them to interpret the different meanings that individuals and groups attach to both their activities and their accounts of these activities and interactions. However, it is vital for the researcher to be rational and not emotional in their understanding, as this allows for empirical verification of their observations and

inferences and provides rigour and authenticity to the research process (Hammersley, 2013; Tombs and Pugsley, 2020).

Unlike positivists, interpretivist researchers believe that reality is subjective, complex, multiple and continuously changing (Creswell, 2013; Collis and Hussey, 2014), i.e. interpretivism as a paradigm assumes that reality can differ considering different individuals (Alharahsheh and Pius, 2020). Therefore, interpretivism is a more subjective and qualitatively inclined approach whose view can help to acquire a better understanding of groups from the perspective of the practical experiences of group members. Interpretivist researchers can not only describe objects, humans or events, but also deeply understand them in a social context. In addition, researchers also can conduct these types of research in natural settings, utilising key methodologies such as grounded theory, ethnography, case study or life history to gain the in-depth insights into the research objects (Tuli, 2010), to provide them with more authentic information related to the research object. For example, during an interview, researchers can probe an interviewee's thoughts, values, prejudices, perceptions, views, feelings and perspectives (Wellington and Szczerbinski, 2007). Thus, valuable data collected during interviews provide researchers with better insights for further action later (Pham, 2018).

However, despite the various advantages associated with the interpretivism approach and the fact that interpretivism became an increasingly important perspective in social research during the twentieth century (Creswell, 2013), it has disadvantages which have been highlighted by various critics, objecting fundamentally to the reliability of the 'knowledge' produced. As interpretivists' knowledge about the real world is usually based on their research subjects' worldviews, the results are built on diverse and subjective judgements about the world, which in turn leaves no chance to assess the truthfulness of such knowledge (Alvesson and Sköldberg, 2009; Creswell, 2013). Furthermore, different researchers worry about the lack of ability to generalise the findings of interpretivist research to broader social contexts. They claim that findings are mostly based on different people's perspectives in different settings over different time frames, and with different personal interests, which makes generalisations deceptive and misleading (Alvesson and Sköldberg, 2009; Creswell, 2013; Easterby-Smith et al., 2018).

To conclude, positivism is a well-known scientific approach and is generally quantitative, whilst interpretivism is non-scientific and mostly qualitative. Positivists believe that a good and reliable understanding of a group can only be achieved by studying the group’s activities scientifically using quantitative techniques, while interpretivists argue that, because human beings are involved, groups can be understood better by qualitative evaluation of the practical experiences of the group subjects (Uduma and Sylva, 2015). Similarly, Wilson (2014) identified that, in positivism, the researcher has minimal interaction with the research participants; the research moves from theory to observation, and the analysis of these observations is quantifiable and objective in nature. On the other hand, interpretivism seeks the involvement of the researcher in the social world of what is under study. This involves analysis of the social actors within their traditional setting by observations that are qualitative and subjective in nature (Wilson, 2014).

Based on the above discussion, the following table provides the key features and differences between the two paradigms.

Criteria	Positivism	Interpretivism
<b>Definition</b>	A sociological approach that states that human behaviour and society should be studied using scientific methodology	A sociological approach that states it is important to understand or interpret the beliefs, motives and actions of individuals in order to understand social reality
<b>Behaviour</b>	Believes that human behaviour is based on social norms as society shapes individuals	Believes that individuals are complex and that each have different experience and view the same reality in different ways
<b>Aim</b>	Discovers the law that govern human behaviour	Gains an insight into individuals; understand why people behave in certain ways
<b>Methods</b>	Quantitative methods such as surveys and questionnaires	Qualitative methods such as participant observations and unstructured interviews
<b>Researcher</b>	Allows researcher to remain detached from the respondents	Allows researcher to have close interaction with respondents

**Table 4.1 Differences between Positivism and Interpretivism**  
 Source: Adopted and adapted from Hasa (2011) and Thompson (2015)

Evidently, these two paradigms present different perspectives and methodological choices, and it is the questions being asked which determine the suitability of the paradigm chosen (Wildemuth, 1993; Ryan, 2006; Creswell, 2013). Hence, the

research questions and objectives of this study are the driving force in the choice of philosophical paradigm. Given that the prime intention of the study is to explore the effect of the university environment on students' entrepreneurial intentions and to identify both the internal and external environmental factors through testing the validity of a proposed model, a positivist paradigm is more appropriate. However, it is further recognised that, as the aim of the study is also to explore some unobservable aspects of the research problem relating to students' beliefs and experiences, the traditional positivist approach with its quantitative instrumentation will not be effective, and hence the researcher believes a modified version of the positivist paradigm often known as post-positivism would be more suitable. The further explanation and justification for choosing post-positivism is provided below.

#### **4.4.3 Post-positivist Paradigm**

Post-positivism assumes an interrelated relationship between an individual's attitudes and behaviour, socio-cultural aspects, and external environment (Crossan, 2003). To obtain a clearer view of what is happening, post-positivism sees the need to compare multiple observations and measures from different data sources and methods to confirm the research findings (ibid, 2003); to develop a comprehensive understanding of phenomena (Patton, 2002). This process of multiple observations and measurements is called 'triangulation', which not only provides deeper understanding and helps in overcoming practical constraints but also ensures the quality of results by crosschecking the findings (Bryman and Bell, 2015). Creswell and Clark (2017) term triangulation as the use of multiple data collection methods for collecting quantitative and qualitative data in order to understand the phenomenon at hand. Triangulation is also viewed as a research strategy for testing and increasing the validity through convergence of the relevant data from different sources (Giles, 2002; Carter et al., 2014; Creswell and Clark, 2017). Moreover, triangulation of secondary and primary data is applied in the final analysis, in order to increase the reliability and robustness of the proposed model (Marshall and Rossman, 2011). Along with its contribution to the validity of research, triangulation is also not only used to resolve the limitations of any single research method in understanding the complex phenomena (Hammersley, 2008) but also to optimise the strengths of each method (Denzin, 2012). Various researchers (such as Shih, 1998; Hussein, 2009; Yeasmin and Khan, 2012) pointed out that triangulation is also used for confirmatory purposes (when qualitative results

are validated by quantitative studies and vice versa) and completeness purposes (when researchers use triangulation to increase their in-depth and understanding of the phenomenon under investigation by combining multiple methods and theories). By contrast, the disadvantages associated with triangulation relate to the costs and time as multiple methodologies require larger budgets and analysing different dataset is more time-consuming respectively (Thurmond, 2001; Cowman, 2008).

As researchers struggled with the understanding that many of these characteristics cannot be fully applied in contexts where humans are involved – that the social world cannot be studied in the same way as the natural world; that the social world is not value free; and that it is not possible to provide explanations of a causal nature – modifications were made to relax some of the assumptions associated with the positivist paradigm (Kivunja and Kuyini, 2017). This led to a derivative of this paradigm, known as the post-positivist paradigm. The latter accepts that reality is imperfect, and that truth is not absolute but probable. It allows for observations without experimentation or formulation of hypotheses to be tested. Guba and Lincoln (1994) say that, whereas the positivist paradigm maintains the belief that reality is out there to be studied, captured, and understood, its post-positivist counterpart accepts that reality can never be fully understood but, at best, only approximated. Accordingly, the post-positivist paradigm has tended to provide the worldview for most research conducted on human behaviour typical of organisational contexts (Kivunja and Kuyini, 2017).

In methodological terms, post-positivism aims to overcome traditional criticisms by directing the research to more social settings, gathering more contingent qualitative data, restoring the role of grounded theory in the research, and presenting diverse perspectives as a means to understand the meanings people assign to their reality (Denzin and Lincoln, 1994; Guba and Lincoln, 1994). Obviously, achieving all that calls for the incorporation of qualitative methods into an inquiry. This type of approach which uses more than one research method or data collection technique is usually known as methodological triangulation (Polit and Beck, 2004; Hussein, 2009; Saunders et al., 2015). The use of triangulation, however, will depend on the philosophical stance of the researcher (Yeasmin and Khan, 2012).

#### **4.4.4 Justification for Choosing the Post-Positivist Paradigm**

As mentioned in the above section, the post-positivism paradigm promotes the triangulation of quantitative and qualitative methods that explores the diversity of facts researchable through various kinds of investigations, whilst respecting and valuing all findings as the essential components for the development of knowledge (Panhwar et al., 2017). Moreover, post-positivism helps to eliminate the intractable problems of a forced choice between qualitative and quantitative research methods, thus advocating the selection of multiple research methods by looking at the nature of hypotheses and research questions (Henderson, 2011; Panhwar et al., 2017). This diversity of methods helps the researcher interact with the participants. Furthermore, post-positivists study a problem by reflecting a need to examine causes that affect results; they test selected variables that form hypotheses and research questions by adopting the methods best suited to them (Morgan, 2007).

Based on the above discussion and the highlighted advantages/limitations, the current study adopts the post-positivist paradigm for three main reasons. The first is its intention to explore the current status of the impact of the university environment on students' entrepreneurial intentions after the reforms introduced by the Higher Education Commission for the development of entrepreneurial environment in the universities in the KP region of Pakistan, and to highlight the key factors that influence students' acceptance of entrepreneurship as a career. This will require the empirical testing of a proposed model (see Figure 3.1 on page 71) using both quantitative data and a semi-structured interview exercise to achieve more in-depth knowledge. The post-positivist philosophical perspective is the most appropriate in such a situation, as it provides the means for achieving the objectives whilst simultaneously allowing new theory to emerge.

The second reason is the fact that the use of mixed-methods research in this post-positivist approach will facilitate a profound understanding of the students' views and perceptions about the recent changes being introduced for the development of entrepreneurial environment in universities in the KP region of Pakistan. Therefore, a post-positivist approach has been taken in order to facilitate understanding of the causal mechanisms of SEIs and to offer insights for policy makers and practitioners.

Finally, previous SEI-related studies are based on either a quantitative approach (see for example Awang et al., 2014; Aziz et al., 2019; Lopes et al., 2020; Wambua et al., 2020) or a qualitative approach (see for example, Ghina et al., 2014; Dimov, 2017; Aicha and Abdelbaki, 2018). This research, however, will provide deeper insight by collecting and analysing both quantitative and qualitative data, which will add further to the existing knowledge (e.g., Guerrero et al., 2017; Mukesh et al., 2018; Dana et al., 2020).

#### **4.5 Research Approach**

The research approach mainly covers the path taken for data collection and the testing of the phenomenon, concept, theory or framework which is under study (Saunders et al., 2015a). The two general approaches which researchers adopt are the deductive and inductive approaches (Saunders et al., 2015b; Creswell, 2013; Hyde, 2000). Each of these approaches is individually associated with one of the main research philosophies that a researcher selects. The deductive approach is usually associated with positivism and the inductive approach is associated with interpretivism (Bryman and Bell, 2015). Saunders et al. (2015b) state that it mainly depends on the nature and scope of the research study and that the researcher should select the most appropriate research approach that suits the data to be collected. These approaches are discussed in detail below.

##### **4.5.1 Deductive Approach**

The deductive approach is the rational process of reaching an assumption from something that is previously known to be true. Sekaran (2003) emphasises that deductive research represents one of the primary methods for conducting scientific research. It is the process by which the researcher arrives at a rational conclusion based on a reasonable generalisation of pre-existing facts. Deduction entails moving from the general to the particular, as in starting from a theory, deriving hypotheses from it, testing those hypotheses, and revising the theory (Woiceshyn and Daellenbach, 2017). Thus, deductive research is referred to as moving from the broad to the narrow (Collis and Hussey, 2013). Within the deductive approach, results are shown in the form of numbers that are presented in figures. Gabriel (2013) observed that the deductive approach aims at testing existing theory; it starts with an hypothesis

and generally emphasises causality. Saunders et al. (2015a) state that the deductive research approach is considered important for three reasons: firstly, it involves the analysis of causal relationships among the research variables; secondly, through operationalising the research concepts, it offers better understanding of the research problems by reducing them into simple elements; and, finally, if its findings are based on a sufficient and representative sample, they are generalisable to the whole research population.

#### **4.5.2 Inductive Approach**

The inductive approach, in contrast, is the logical process of establishing a general assumption based on observable facts in which the researcher collects and analyses data to develop a theory (Sekaran, 2003; Zikmund, 2010). Induction is a reasoning method by which a law or a general principle would be inferred via observing specific cases. The inductive approach emphasises observation and deriving conclusions through that observation. It generally moves from specific to general, since the researcher generalises their limited observations of specific circumstances to general conditions (Zalaghi and Khazaei, 2016). Zalaghi and Khazaei (2016) further suggest that, in the induction process, the researcher as an observer should honestly, without any prejudgments and biases, and with an impartial mind, register what they observe. Then these observations form a basis on which theories and laws are constructed which make up the scientific knowledge (ibid, 2016). Thus, the main advantage of the inductive method is that there is no necessity for any prefabricated framework or model. In inductive reasoning, the researcher uses the observations in order to construct an abstract or to describe the circumstances being studied (Lodico et al., 2010). The emphasis in inductive research is on defining an event as a narrative, taking into consideration the importance of describing the context and considering the view of those who are influenced by a phenomenon when trying to assign meaning to it (Gabriel, 2013). Therefore, the inductive approach is also called the bottom-up, or hill-climbing approach, as the researcher starts a piece of research simply from an observation and then gradually moves towards explaining that idea, which eventually ends at some existing or new theory (Lodico et al., 2010). An inductive approach is concerned with the generation of new theory from the data as it uses the research question to narrow the scope of the study and usually focuses on exploring new

phenomena or uses a different perspective to explore previously researched phenomena (Gabriel, 2013).

To summarise, the emphasis in the inductive research is on defining an event in narratives, taking into consideration the importance of describing the context and considering the view of those who are influenced by a phenomenon when trying to assign meaning to it. Therefore, the inductive approach is best used to acquire in-depth information about a problem, and to reveal underlying motives, feelings, values, and perceptions (Yin, 2003; Hair et al., 2004). The inductive approach towards social science has often been criticised regarding some aspects. The main issue of the inductive method can be the researchers being influenced by their limited knowledge of the causal relations and the research problem (Neuman, 2003). Due to the absence of a pre-defined framework or model, some researchers claim that induction as a principle is falsifiable because it is based on human observations (Zalaghi and Khazaei, 2015).

#### **4.5.3 Research Approach of the Study and its Justification**

Based on the above discussion, it is evident that the deductive approach is generally associated with the positivist philosophy while the inductive approach is commonly associated with the interpretivist philosophy (Saunders et. al., 2015b). When adopting a deductive approach, a strong theoretical framework is developed at the beginning of the study which helps the researcher identify and articulate where their key theoretical contribution lies (Shaw, 2017).

Given the primary aim of the current study, which is to investigate the impact of the university environment on students' entrepreneurial intentions, deductive reasoning involving the testing of several hypothesised relationships among the proposed model variables is deemed to be the appropriate approach.

The deductive approach suggests that a study starts with an existing theoretical model, where hypotheses are derived, then the researcher observes the phenomenon (using quantitative tools) and based on results, the theory (model) is confirmed, rejected or modified (Burns and Burns, 2008; Saunders et al., 2015b). Therefore, this

research will primarily use a deductive approach to test a model based on a review of the extant literature relating to the impact of the university environment on SEIs.

Secondly, the deductive approach is used to describe causal relationships between variables, test hypotheses and generalise findings (Blaikie, 2000); the deductive approach was selected as the literature on SEIs and the university environment enabled the researcher to define a theoretical framework and develop hypotheses (see section 3.4 on page 71). The deductive approach will help to investigate causal relationships and hypotheses identified in the theoretical framework, the main objective of the study.

#### **4.6 Research Strategy**

Research strategy is a broad plan of how to answer the questions that have been set for the research (Saunders et al., 2015b) or how to achieve the determined research objectives (Noor, 2008). The six different strategies which may be employed in any kind of research are survey, experiment, grounded theory, ethnography, case study and action research (Saunders et al., 2015b). This section describes each of the above-identified six strategies along with a justification of the strategy chosen for this study.

The *survey* is a widely used method in social science research and allows access to significantly high numbers of participants (Babbie, 2004; Saunders et al., 2015b). Surveys are generally associated with the quantitative approach and allows the low-cost gathering of quantitative data that can be representative of the whole population (Easterby-Smith et al., 2018). Surveys can be carried out in person, over the phone, by post, through a website or via email (Creswell, 2013). *Experimental strategy* includes studies that take place within a designed, controlled environment and usually involves special treatment of different groups to contrast the precise relationships among variables (Galliers, 1991). Researchers carefully measure and observe the outcome of the experiment and are able to explain it as well as predicting future events (Oates, 2006). *Grounded theory*, which was originally introduced by Glaser (1999), seeks to formulate hypotheses based on conceptual ideas of 'what is going on out there' by means of empirical data. Grounded theory involves the progressive

identification and integration of categories of meaning from data. It is both the process of category identification and integration (as method) and its product (as theory) (Corbin and Strauss, 1990). *Ethnographic research* is a qualitative method where researchers observe and/or interact with a study's participants in their real-life environment (Hammersley and Atkinson, 2019). The goal here is to produce a narrative account of that environment, against a theoretical backdrop (Jonker and Pennink, 2009). *Action-oriented research* refers to practical business research which is directed towards a change or the production of recommendations for change. It is a participatory process which brings together theory and practice, action and reflection (Oates 2006; Somekh, 2006). The project is often carried out by insiders. This is because it is grounded in the need to actively involve participants for them to develop ownership of the project. After the project, participants will have to implement the change. *Case study* focuses on an in-depth investigation of a particular case (e.g., one organisation) or a small number of cases. In case study research generally, information is sought from different sources and using different types of data such as observations, survey, interviews, and analysis of documents. Data can be qualitative, quantitative or a mix of both. Case study research allows a composite and multifaceted investigation of the issue or problem (Yin, 2013). Research based on case study can either be positivist or interpretive, depending on the underlying philosophical paradigm of the researcher (Oates 2006). In the present research, the survey strategy and the case study strategy seem to be appropriate for quantitative phase and qualitative phase respectively; thus, they are adopted. An account of which is given below.

#### **4.6.1 Research Strategies for this Study**

Taking influence from the nature of the study and research questions, this research study measures the relationship between independent variables (Entrepreneurship Education, Entrepreneurship Support Programme, Entrepreneurial Networking, Supportive Faculty, Entrepreneurship Club, Entrepreneurship Resources, Linkages with Society, Capital Availability, Government Policies, Regulatory Environment, Economic Environment, Structural Support, Workforce Availability) and dependent variable (Students' Entrepreneurial Intentions). However, in order to achieve the research objectives and answer the questions effectively, it was more appropriate to use 'surveys' and 'case study' for different research stages. In the first stage of the study, a survey strategy will be selected to collect primary data efficiently, accurately,

inexpensively, and quickly (Zikmund, 2010). In the second stage, case study approach will be used to gain an in depth understanding of the university environment and entrepreneurial intentions.

The combination of survey and case study strategy may assist in enhancing the understanding of the research problem itself (Johnson and Onwuegbuzie, 2004; Creswell, 2014; Creswell and Clark, 2017). Moreover, one of the key reasons for choosing a two-fold research approach was to facilitate the triangulation of results and to ultimately enrich the credibility and strengthen the conclusions of the research (Hesse-Biber, 2010). In addition, most of the SEI-related studies either adopted a case study-based approach or a survey approach to investigate the impact of university environment on SEIs. The current two-fold strategy approach may help to formulate a deeper understanding of the relevant issues.

#### **4.7 Research Method**

The research method is the way the researcher turns their research question(s) into a research project, i.e. it is the general plan of how the research will go about answering the research question(s) by identifying research objectives, data sources, data collection, ethical issues and data constraints (Creswell, 2013). Research methods mainly include the techniques or procedures used to gather and analyse data related to a research question or hypothesis (Yin, 2013). Punch (2013) suggests that research methods are types of qualitative, quantitative, or mixed methods that provide specific direction for procedures in a research study. The researcher's decision to use a particular research method is based on the research question, study phenomena, research philosophy, available resources, experience, and personal interest (ibid, 2013).

Yin (2009) describes qualitative research as generating rich, descriptive data which helps in describing and understanding social phenomena as it emphasises defining an event in narratives, taking into consideration the importance of describing the context and the views of people who are influenced by the phenomenon. Qualitative research addresses the social aspect of research and is often employed when the problem is not well understood and there is an existing desire to explore the problem thoroughly (Choy, 2014). In qualitative research, typically, a rich narrative from

participant interviews is generated and then analysed in an attempt to answer the research question, as many questions will be used to uncover the problem and address it comprehensively (Polit and Beck, 2012). Saunders et al. (2015b) are of the opinion that qualitative research is generally linked with the inductive approach and interpretivism as it aims at developing a rich theoretical perspective as compared to the already existing literature and is more subjective.

By contrast, quantitative research mainly deals with numeric data and includes any data collection technique (e.g., questionnaire) or data analysis procedure (e.g., statistics) that generates or uses numerical data (Yin, 2013). Quantitative research may be used to determine relationships between variables and outcomes as it involves the development of a hypothesis: a description of the anticipated result, relationship or expected outcome from the question being researched (Polit and Beck, 2012). It is conducted in a more structured environment that often allows the researcher to have control over study variables, environment, and research questions (Rutberg and Bouikidis, 2018). A quantitative research study design may be selected for several reasons. For example, one may choose quantitative research if a lack of research exists on a particular topic; if there are unanswered research questions; or if the research topic under consideration could make a meaningful impact on the research subject (Polit and Beck, 2012). Quantitative research is commonly associated with the deductive approach and a positivist stance as it aims at using data for testing theory and is more objective (Saunders et al., 2015b).

Based on the above discussion, the following table provides the key features and differences between the two research methods.

Basis for Comparison	Quantitative Research	Qualitative Research
Research Aim	To test hypotheses, look at cause and effect, and make predictions Confirm hypotheses about phenomena	To understand and interpret social interactions Explore Phenomena
Research Objectives	Describe, explain and predict	Explore, discover and construct
Research Philosophy	Positivism	Interpretivism
Research Approach	Deductive approach	Inductive approach
Theory's Role in Research	Testing of theory	Generation of theory
Sampling	Random	Purposive
Data Format	Numerical and statistical	Textual, objects and images
Data Analysis	Identify statistical/casual relationships	Identify themes, patterns, features
Results	Recommends final course of action	Develops initial understanding

**Table 4.2 Differences between Qualitative and Quantitative Research**

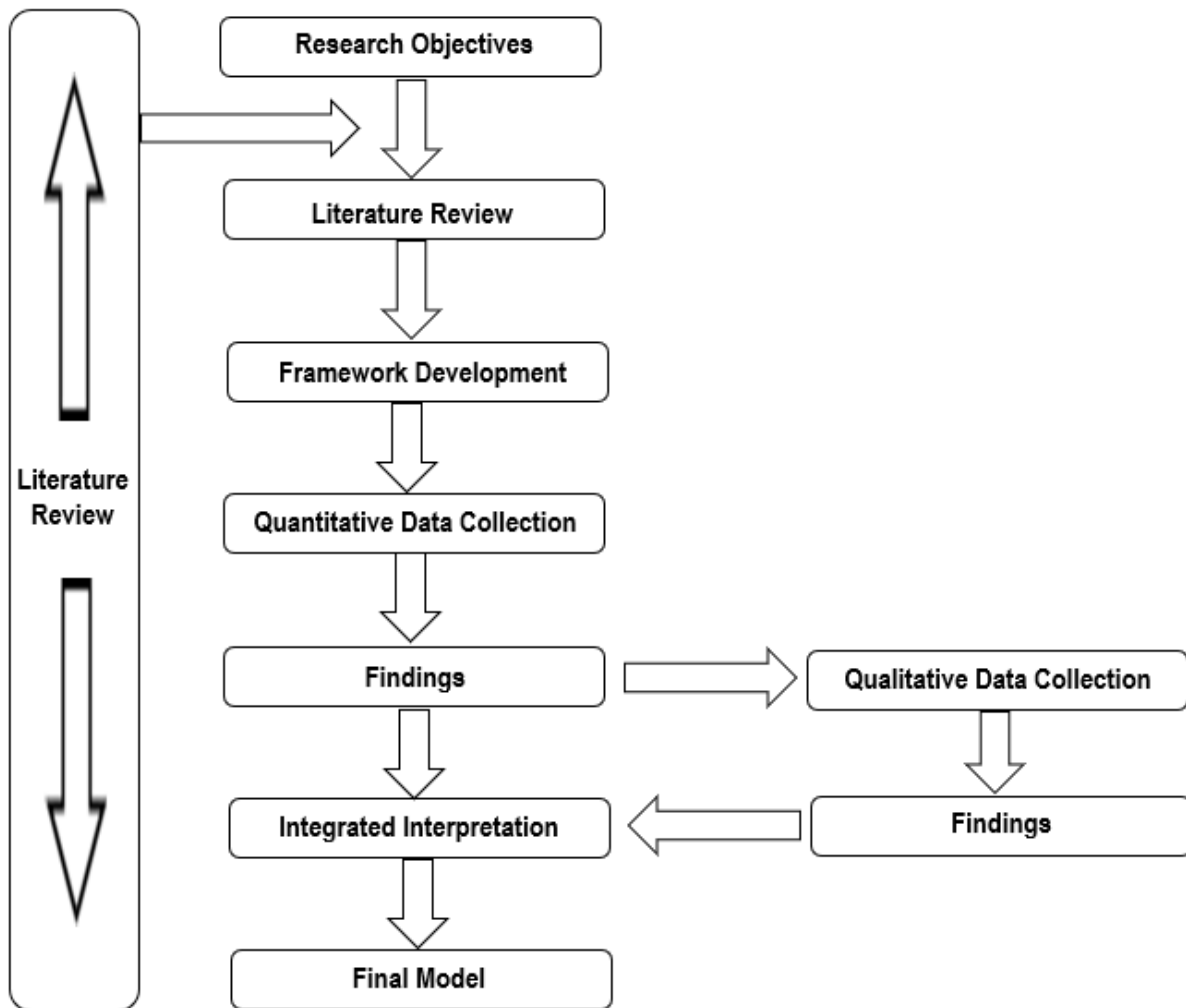
Source: Adopted and adapted from Surbhi (2018)

Based on the above discussion, and as summarised in Table 4.2, it is evident that, despite the various advantages associated with each method, there are also limitations. To overcome issues related to each method and to minimise the limitations, many researchers have advocated the use of a mixed-method approach (see for example Hussein, 2009; Yin, 2009; Silverman, 2013; Polit and Beck, 2012). Thus, to minimise the shortcomings of an individual method, a combination of both methods is recommended as, while doing so, the advantages of each methodology complement the other, making a stronger research design and resulting in more valid and reliable findings. Similarly, Doyle et al. (2009) concur that mixed method emergence was in response to the limitations of the sole use of quantitative or qualitative methods and is now considered by many a legitimate alternative to these two traditional methods. They further explain that mixed methods research is emerging as a dominant paradigm in social science research in recent years with an increase in social science researchers using this method. A mixed-method approach involving both qualitative and quantitative research designs is used when the researcher uses qualitative data for exploring perceptions and quantitative data for numeric analysis (Yin, 2013; Polit and Beck, 2012), which is the case of the current research. Moreover, using a mixed-method approach enables the researcher to carry out triangulation, which refers to an attempt to obtain the right data by combining different ways of looking at it (Silverman,

2013). Moreover, mixed-method approach helps to enhance the validity and reliability of the study (Polit and Beck (2012).

Considering the above discussion, this research adopts a combination of both qualitative and quantitative research methods to increase the effectiveness of the study. The quantitative data will be used to test the hypotheses of the study; however, the qualitative data will be used to understand and explain the results gained from the quantitative analysis. Thus, the first phase of the research adopts a quantitative/positivist approach by using numeric data to explore the impact of university offerings and environmental factors on SEIs from the students' perspective. In the second phase, the research adopts a qualitative/interpretivist approach to investigate the impact of the university environment on SEIs from the teachers' perspective at the universities in the KP region.

The research design flow can be presented as shown below:



**Figure 4.2 Research Design Flow Diagram**

Source: Developed by the author

Both research phases of the study are explained in the following sections.

#### **4.8 Phase One: Quantitative Approach Using a Questionnaire-Based Survey**

In this study, quantitative data from 370 respondents were the target on the basis that this number would provide the researcher with sufficient data to be able to generalise his research findings to the whole research population (see sample size calculations in page 107). The limited financial and time resources available to the researcher meant that quantitative data from this number of participants could be collected most efficiently via self-administrated questionnaires. As a result, survey questionnaires were chosen by the researcher to collect the needed quantitative data in the first phase of the current study. The next section explains the questionnaire development process for the study.

#### **4.8.1 Questionnaire Development**

Researchers aiming to gather opinions and feelings from a large sample, and at relatively low cost, tend to develop questionnaires involving lists of carefully structured and pre-tested questions (Collis and Hussey, 2014). Prior to the questionnaire development, the researcher carried out an extensive review of the literature related to SEIs, EE and university environmental factors (see section 2.6 on page 45). In line with advice from Bryman and Bell (2015), the researcher employed previously validated and tested questions to develop a more credible and valid research instrument (questionnaire). In the domain of SEIs, many researchers have used survey instruments to collect data. Among them are Kolvereid (1996) who pioneered the development of a scale for measuring entrepreneurial attitudes as a predictor of self-employment intentions. Similarly, Chen et al. (1998), developed a research instrument for measuring entrepreneurial self-efficacy. Likewise, Krueger et al. (2000) built an instrument while conducting a comparative study of the Entrepreneurial Intentions Models. In the same vein, Veciana et al. (2005) developed a questionnaire while measuring university students' attitudes towards entrepreneurship. Finally, Linan and Chen (2006) developed a new instrument to test the adequacy of the entrepreneurial intention model.

In order to obtain reliability and validity of the results, all measurement scales used in this study's questionnaire, were based on a combination of previously validated instruments adopted from the above-mentioned studies (for more detail, please see the following table).

Construct	Items	Adopted and Adapted From Source(s)
Entrepreneurship Education (EE)	5 Items	Luthje and Franke (2003); Miranda et al. (2017); Potishuk and Kratzer (2017)
Entrepreneurship Support Programme (ESP)	3 Items	Kuttim et al. (2014); Hytti and O’Gorman (2014)
Entrepreneurial Networking (EN)	5 Items	Mueller (2018); Davidsson and Honig (2013); Kuttim et al. (2014)
Supportive Faculty (SF)	3 Items	GEM (2015)
Entrepreneurship Club (EC)	4 Items	Othman et al. (2012)
Entrepreneurial Resources (ER)	3 Items	Kuratko et al. (2005); Saeed et al. (2014); Miranda et al. (2017)
Linkages With Society (LWS)	3 Items	Fielden and Hunt (2011); Walter and Doshe (2012)
Capital Availability (CA)	4 Items	GEM (2015); Miranda et al. (2017)
Government Policies (GP)	5 Items	Audretsch et al. (2007); Mwasalwiba et al. (2012)
Regulatory Environment (ER)	4 Items	Chemin (2009); Kim and Li (2014); GEM (2015)
Economic Environment (Eco)	3 Items	Ali and Junaid (2016)
Structural Support (SS)	4 Items	Yurtkoru et al. (2014); Begley et al. (2005)
Workforce Availability (WA)	4 Items	Baker et al. (2005); Choo and Wong (2006)

**Table 4.3 Previously Validated Questionnaire Sources**

Source: Developed by the author

Following the above-mentioned researchers in the Table 4.3, and particularly Oppenheim (2000), a Likert scale was adopted in the survey partly because the reliability of Likert scales tends to be good and partly because of the greater range of answers permitted to respondents.

#### 4.8.2 Questionnaire Structure

The main measurement of the questionnaire was based on a five-point Likert scale to explore participants’ agreement or disagreement with the statements used. In line with the advice from Saunders et al. (2015b), a detailed survey/questionnaire was used as the population was specialised in the topic, i.e. Master’s-level business students. Similarly, as suggested by Bryman and Bell (2015), the shorter and more straightforward questions were placed at the beginning of the questionnaire. Finally, concise instructions were provided for all sections and clear question wording was used to facilitate the respondents (Sekaran, 2003). Finally, as per the LJMU’s guidelines, a covering letter was used that informed participants of the purpose of the research, importance of their participation, expected time for completion, confirmation of anonymity and confidentiality, voluntariness of participation, their right to withdraw at any time, how collected data would be treated, and finally the researcher’s contact

information in case of any further inquiries. The questionnaire was structured and arranged as follows:

**Part One – Background information about the participants.** This part consists of demographic questions such as gender, age, university status, education level, etc.

**Part Two – Environmental factors related to students' entrepreneurial intentions.** This part offers an agreement/disagreement level, in which rating was on a scale of 1-5, with 1 = Strongly Disagree and 5 = Strongly Agree; and is divided into the following three sections:

- **Section One: Internal Environmental Factors/University Entrepreneurial Offerings**  
This section is concerned with the key internal environmental factors in the form of university entrepreneurial offerings that may affect the SEIs in the context of the KP universities. In order to assist the respondents and to minimise any potential confusion during analysis, each factor's items were grouped together as follows:

1. Entrepreneurship Education (5 items)
2. Entrepreneurship Support Programme (3 items)
3. Entrepreneurial Networking (5 items)
4. Supportive Faculty (3 items)
5. Entrepreneurship Club (4 items)
6. Entrepreneurial Resources (3 items)
7. Linkages with Society (3 items).

- **Section Two: External Environmental Factors**

Students' Entrepreneurial Intentions are often affected by external environmental factors such as political and economic issues. This section is concerned with the key external environmental factors which are listed below. Again, in order to assist the respondents and to minimise any potential confusion during analysis, each factor's items were grouped together as follows:

1. Capital Availability (4 items)
2. Government Policies (5 items)
3. Regulatory Environment (4 items)

4. Economic Environment (3 items)
5. Structural Support (4 items)
6. Workforce Availability (4 items).

- Section Three: Students' Entrepreneurial Intentions

Finally, section three of the questionnaire is concerned with the dependent variable (DV) under study, i.e., Students' Entrepreneurial Intentions. Based on four items related to the DV, the students were asked to indicate their level of entrepreneurial intentions.

**Part Three – An overview of the overall impact of the university environment.**

This section offers items related to the university offerings and external environmental factors. The participants were asked to rank each item based on its importance.

**Part Four – Suggestions.** Finally, an open-ended question was asked for the respondents to suggest any further environmental factors not covered in the study.

As mentioned earlier, in developing the survey document, the first step was a thorough literature review, including close scrutiny for possible use of questions generated by other researchers on this topic. Prior to the collection of full-scale data for the research, a pilot study was carried out to test the questionnaire designed for the research. An account of the pilot study follows.

#### **4.8.3 Pilot Study**

Pilot study is defined as a small study for helping to design and develop the research instrument (questionnaire) prior to the full-scale study (Arain et al., 2010). A pilot study essentially examines the feasibility of the proposed questionnaire by presenting it to a small sample of individuals who are representative of the intended population, under the same conditions as anticipated in the full-scale study (Thabane et al., 2010). Similarly, Bryman and Bell (2015) explained that a pilot study is essential before administering the questionnaire in a full-scale survey, as it helps to detect possible shortcomings in the design. Moreover, a pilot study helps the researcher to ensure that respondents do not face any difficulties in answering questions, and to obtain early indications of the reliability of the research instrument to be used (Saunders et

al., 2015b). In addition, pilot testing the questionnaire helps in confirming that the research instrument's validity and reliability are at an acceptable level, which in turn promises that the instrument will work well when the data is collected at a later stage on a full scale (Bryman and Bell, 2015; Eldridge et al., 2016). Therefore, in order to rectify any errors, potential wording confusion and/or ambiguous information, the researcher implemented a pilot study with the questionnaire designed for this study.

#### **4.8.4 Data Collection for the Pilot Study**

In terms of the participants of a pilot study, as already mentioned, a small sample of respondents who come from the total population should be sought (Arain et al., 2010). Therefore, after reviewing and revising the questionnaire, the instrument along with the 'Participant Information Sheet' (Appendix A on page 321) was distributed among 50 randomly selected Master's-level students of four universities in the KP region of Pakistan. The participants were fully briefed by the cover letter regarding the purpose and the importance of the study. They were provided with information and instructions on how to complete the survey and were assured of confidentiality as well. The participants were also requested to complete the questionnaire and provide feedback on its clarity, content and style.

Initially, 50 students participated in the pilot study. However, only 47 responses (questionnaires) were fully completed and usable. Hence, the pilot study sample consisted of 47 respondents. The participants took an average of 15-20 minutes to answer the questionnaire. Additionally, there were no significant complaints about understanding the questionnaire's language and instructions. However, some suggestions and comments were made in order to improve the questionnaire for further data collection stages. Based on these suggestions, minor modifications were made to ensure the clarity.

#### **4.8.5 Descriptive Statistics for the Pilot Study**

This section presents the descriptive statistics gathered from part 1 (demographic information) of the questionnaire. The purpose of the descriptive statistics at this stage of the study is to generate a profile data of the respondents. The results drawn from the collected demographic data are described below and summarised in Table 4.4:

- The analysis of gender profiling of the piloted sample shows that males comprise 68% while the remaining 32% are females.
- As shown in Table 4.4 below, the majority of the participants are 21-25 years old, only two are between 26 and 30 years of age, and no respondent is aged over 31 years. This result reflects the on-the-ground reality of the Pakistani educational system, where generally students continue their education until Master's level without any gap years in between (Tanveer et al., 2013).
- The analysis of the university status profile of the piloted sample revealed that it includes participants of both public (76.6%) and private (23.4%) universities. The results reflect the overall university-wise enrolment, which is 77.43% for public universities and 22.57% for private universities in the KP region (HEC, 2018).
- In terms of educational levels, the respondents' semester profiles indicate that the participants are currently studying at different levels of their master's degree. This meets the basic inclusion criteria for this research. This is because these participants face making an immediate decision about their career choice after their graduation.
- The pilot study revealed that the respondents are from different areas of specialisation, i.e. having majors in different fields like finance, accounting, entrepreneurship, marketing and HRM, etc. This is a good indication that the study intends to find about the entrepreneurial intentions of students from a variety of educational backgrounds, as shown in the following table.

Variable	Frequency	Percentage	
Gender	Male	32	68.1
	Female	15	31.9
Age Group	21 - 25	45	95.7
	26 - 30	2	4.3
	31 or over	0	0
University Status	Public	36	76.6
	Private	11	23.4
Semester	1st	7	14.9
	2nd	4	8.5
	3rd	10	21.3
	4th	4	8.5
	5th	12	25.5
	6th	10	21.3
Area of Specialisation (Majors)	Accounting	2	4.3
	Entrepreneurship	4	8.5
	Finance	16	34.0
	General	0	0
	HRM	15	31.9
	Marketing	10	21.3
	Other	0	0

**Table 4.4 Descriptive Statistics for the Profile Data**  
Source: Developed by the author

#### 4.8.6 Validity and Reliability of the Piloted Questionnaire

##### Research Questionnaire Validity

Research validity refers to how well a research instrument (questionnaire) measures what it is intended to measure (Kumar, 2014), i.e., validity answers the question as to whether the actual measurement corresponds to the intended measurement. Golafshani (2003) argues that research should be valid, both externally and internally, whereby external validity refers to the extent to which the research findings can be generalised to a wider population while internal validity confirms that the researcher investigates what he/she claims to be investigating (Golafshani, 2003).

Different types of validity tests such as content validity, face validity and construct validity are used to determine the validity of the data collection method (Bryman and Bell, 2015; Sekaran and Bougie, 2016). However, the most widely used method among academics for measuring validity is content validity, which is referred to as the extent to which all sides of a given research construct are represented by questions in

the research instrument (Sekaran, 2003; Saunders et al., 2015b; Sekaran and Bougie, 2016). Content validity of a research instrument can be enhanced by undertaking certain steps. These involve outlining the research topic through an intensive literature review, using a panel of experienced individuals to judge the adequacy of the questionnaire for measuring the intended concepts, and, finally, accepting feedback and suggestions from the participants of the pilot study (Bryman and Bell, 2015; Sekaran and Bougie, 2016; Saunders et al., 2015b).

To ensure the validity of the current research instrument in general and the content validity in particular, the above-mentioned steps were taken as shown in the following table:

Steps	Actions	Comments
Step 1	Validated Questionnaires	The research instrument was developed after an intensive review of the related literature on Entrepreneurial Intentions. The questions used in the questionnaire were chosen from previous studies and adapted to fit the current research context and environment. Thus, the designed questionnaire is mainly based on the related literature and previously validated questionnaires.
Step 2	Experienced Reviewers	A panel of four experienced individuals (two research experts from LIMU and two research experts from academia in KP, Pakistan) have reviewed the questionnaire. These experts provided suggestions and recommendations, which were incorporated in modifying the questionnaire. This exercise helped in ensuring the relevance and suitability of the research questionnaire in terms of its ability to achieve the research objectives.
Step 3	Usage of Plain English	As English is the medium of instruction at all universities in the KP region, therefore, there was no need for translation into local language (Urdu). However, plain English was used to avoid misunderstanding.
Step 4	Pilot Study	A pilot study was conducted to investigate any difficulties that respondents might encounter while answering questions. Comments about questionnaire structure, wordings and clarity were considered to refine the questionnaire for later use.

**Table 4.5 Steps to ensure the Validity of the Research Instrument**

Source: Developed by the author

Having now outlined the process of ensuring validity (see Table 4.5), the next section explains the steps taken to confirm the reliability of the research questionnaire.

## **Research Questionnaire Reliability**

Reliability concerns the ability of an instrument to measure consistently (Tavakol et al., 2008). Kumar (2011) describes it as the ability to produce consistent measurements each time, i.e., if the research findings can be replicated over a number of times or when the research is conducted again. Hence, reliability ensures consistent measurement across time and across various items in the instrument (Tavakol et al., 2008; Sekaran and Bougie, 2016).

In order to confirm the consistency of an instrument's output, generally a number of reliability tests are carried out such as inter-item consistency, factor analysis and test-retest reliability estimates. However, the most widely used method among academics for measuring reliability is the internal consistency method, which can be examined through the inter-item consistency reliability test (Nunnally and Bernstein, 1994; Sekaran, 2003; Tavakol et al., 2008 and Tavakol and Dennick, 2011). Moreover, internal consistency describes the extent to which all the items in a test measure the same concept or construct and how these items correlate with one another (Tavakol et al., 2008). Cronbach's alpha (C- $\alpha$ ) coefficient is considered the most frequently used test of inter-item consistency reliability (Saunders et al., 2012). In general, higher coefficients (closer to 1) indicate better inter-item reliability that implicitly leads to a better measurement instrument. In contrast, instruments with coefficients less than 0.70 are viewed to have a poor reliability (Nunnally and Bernstein 1994; Tavakol and Dennick 2011; Saunders et al., 2015b). Therefore, to assess the internal consistency of the measures' items in the questionnaire for the current study, Cronbach's alpha coefficient ( $\alpha$ ) was generated for the 13 constructs using SPSS version 24. A summary of these results of the reliability for internal consistency of the 13 constructs obtained from the pilot study is presented in Table 4.6.

No.	Constructs	No. of Items	Cronbach's Alpha	Comments
1	Entrepreneurship Education (EE)	5	0.721	Accepted
2	Entrepreneurship Support Programme (ESP)	3	0.711	Accepted
3	Entrepreneurial Networking (EN)	5	0.720	Accepted
4	Supportive Faculty (SF)	3	0.726	Accepted
5	Entrepreneurship Clubs (ECs)	3	0.713	Accepted
6	Entrepreneurial Resources (ERs)	3	0.799	Accepted
7	Linkages with Society (LWS)	3	0.748	Accepted
8	Capital Availability (CA)	4	0.806	Accepted
9	Government Policies (GPs)	4	0.819	Accepted
10	Economic Environment (Eco)	4	0.887	Accepted
11	Regulatory Environment (RE)	4	0.722	Accepted
12	Structural Support (SS)	4	0.701	Accepted
13	Workforce Availability (WA)	3	0.737	Accepted
14	Students' Entrepreneurial Intentions (SEIs)	4	0.769	Accepted

**Table 4.6 Reliability Test Results for Questionnaire Constructs**

Source: Developed by the Author

The table demonstrates that the reliability coefficients ranged from 0.701 to 0.928, which are all above the recommended level (0.70). As all the constructs are accepted (>0.70), the instrument (questionnaire) is judged to be statistically reliable.

#### 4.8.7 Research Population

Research population is defined as the universe of units from which the sample is to be selected (Bryman and Bell, 2015). The entire set of cases from which the researcher's sample is drawn is called the population (Saunders et al., 2015b). The selection of an appropriate sample for a piece of research is significantly related to the identification of the population.

Since the study settings involve the universities in the KP region of Pakistan, the study population is to be defined at two different levels: student and institutional levels. For the student level, the population of the study comprises Master's-level students in the business departments of these universities. Likewise, at the institutional level, the directors/chairs of the Business Departments of all the universities in the KP region form the population of the study. As mentioned earlier, the quantitative data will address the student-level population and qualitative data (interviews) will be collected from the institutional level. This section, however, is concerned with the student level of the research population, which is explained below.

In entrepreneurship studies, students are often used as a unit of analysis (such as Kolvereid, 1996; Krueger et al., 2000; Autio et al., 2001; Sesen, 2013; Karimi et al., 2017; Bergmann et al., 2018; Bazan et al., 2019). The student population is mainly considered for several reasons. As students often make their career decision immediately after or even before their graduation (Krueger et al., 2000), if the university provides adequate knowledge and inspiration for entrepreneurship, the possibility of choosing an entrepreneurial career might increase among young people (Turker and Selcuk, 2009). Similarly, Linan (2004) states that, since students will have to make a choice regarding their professional career in the near future, therefore they constitute a highly suitable community and present a heterogeneous group regarding preferences and intentions. Subsequently, it is possible to study their intentions before the fulfilment of that behaviour. Moreover, prior empirical data among students shows their strong potential for entrepreneurship and higher entrepreneurial awareness (Sesen, 2013; Karimi et al., 2017; Farini et al., 2017; Boubker et al. 2021). For these reasons, we believe that examining university students' entrepreneurial intentions could provide useful findings for the KP context. Having now established the research population, the next logical step is to define the sample size and the sampling strategy.

#### **4.8.8 Research Sampling**

In general, decisions regarding the sampling and the minimum sample size required for research purposes are influenced mainly by the availability of resources; specifically, information about the research population, financial resources available to the researcher, and time available to select the sample and to collect and analyse the required data (Saunders et al., 2012). The segment of the population that is selected for investigation is called the sample (Bryman and Bell, 2015). As it is impossible to acquire information from the whole population, therefore, the selected sample must represent the population under study in order to generalise the results to the whole population (Sekaran, 2003; Saunders et al., 2015b). The use of samples as a means of studying larger populations is common in all research disciplines (Easterby-Smith et al., 2018). This process of selecting a sufficient number of elements from the population is called sampling. Sampling may be random or non-random. In random sampling, every unit in the population has an equal chance of being selected to the sample of the study while, in non-random sampling all units in the population do

not have the same chance of being selected. Various scholars (such as Sekeran, 2003; Saunders et al., 2015b and Taherdoost, 2016; Malhotra and Birks, 2018) have identified and explained different methods associated with random and non-random techniques. Moreover, they have explained the advantages/disadvantages associated with each technique, which are summarised in the following table.

Type	Strengths	Weaknesses
<b>Convenience Sampling</b>	Least expensive, least time-consuming, most convenient	Selection bias, sample not representative, not recommended by descriptive or casual research
<b>Judgemental Sampling</b>	Low cost, convenient, not time-consuming, ideal	Does not allow generalisations
<b>Quota Sampling</b>	Sample can be controlled for certain characteristics	Selection bias, no assurance
<b>Snowball Sampling</b>	Can estimate rare characteristics	Time-consuming
<b>Simple Random Sampling</b>	Easily understood, results projectable	Difficult to construct sampling frame, expensive, lower precision, no assurance of representativeness
<b>Systematic Sampling</b>	Can increase representativeness, easier to implement, sampling frame not always necessary	Can decrease representativeness
<b>Stratified Sampling</b>	Includes all important sub population, precision	Difficult to select relevant stratification variables, not feasible to stratify on many variables
<b>Cluster Sampling</b>	Easy to implement, cost effective	Imprecise, difficult to compute and interpret results

**Table 4.7 Strengths and Weaknesses of Sampling Techniques**

Source: Malhotra and Birks (2018)

In order to provide the whole population with an equal chance of being selected in the sample, a random sampling technique was employed whereby the cluster sampling method was used. In cluster sampling, the whole population is divided into clusters or groups, subsequently, a random sample from these clusters is taken and all of the units in each of those clusters are used in the final sample (Wilson, 2014). The current research population includes Master's-level Business students of 22 universities in the KP region, which are scattered over a large geographical area. Therefore, the whole KP region was divided into three clusters, namely central, northern and southern regions. Following cluster sampling, four universities were randomly selected from each cluster and all the Master's-level Business students from the selected universities were selected for the distribution of the questionnaire. Cluster sampling seems appropriate in the current situation as it was not possible for the researcher to

administer questionnaires to all the Master's-level students of these universities, which are situated in different geographical locations. Moreover, it was also difficult due to time and resource constraints. Students enrolled in the selected universities can be considered as strongly representative of the whole population as they are representing different geographical locations. Various scholars (such as Wilson, 2014; Taherdoost, 2016; Davis, 2018) are of the opinion that cluster sampling is advantageous to those researchers whose subjects are fragmented over large geographical areas as it saves time and money and also it gives each unit of the population an equal chance of inclusion in the sample.

#### **4.8.9 Sample Size**

In the KP region, the total number of universities is 28, out of which 22 are providing business education, with approximately 5000 business studies students at Master's level. Using Yamane's formula for calculating sample size, the size of the current research sample is determined to be 370 (Yamane, 1967).

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

Where n: Sample Size, N: Population and e: Sampling error (usually acceptable error is .05).

The sample size as determined above means that the minimum sample size for the same population (5000 students) at a 95% level of confidence and 5% margin of error is 370. However, this sample size decision is also influenced by other considerations such as the sample's adequacy for performing statistical tests (Field, 2013; Zikmund, 2010; Hair et al., 2017). Moreover, the researcher has to ensure the appropriateness of the sample size as the current research employed several sophisticated multivariate statistical techniques such as Factor Analysis (EFA/CFA) and Structural Equation Modelling (SEM). Various scholars have suggested different measures for selecting the sample size for collecting data in relation to multivariate analysis. For example, Tabachnick and Fidell (2019) suggest that sample size should be greater than  $50 + 8m$ , where  $m$  is the number of predictor variables when using multivariate statistics. Since this study has 13 predictor variables, thus,  $50 + (13 \times 8) = 154$  observations

should be considered as an adequate sample size. In addition, Hair et al. (2018) suggest that a sample of 100 to 400 observations is adequate for multivariate analysis. Therefore, the sample size ( $n=370$ ) of this research seems adequate to undertake sophisticated statistical analysis and represent the research population.

#### **4.8.10 Quantitative Data Collection and Analysis**

A quantitative approach can collect data by using predetermined instruments that yield statistical data (Silverman, 2013); for this purpose, a survey method is widely used in the form of questionnaires to collect data for testing the research hypotheses (Zikmund, 2010). In this research, a self-administered questionnaire was distributed among the students to collect the quantitative data required to investigate the impact of the university environment on their EIs. The data was mainly collected with the assistance of the gatekeeper (University's administrator). Empirical data collected using validated survey instrument was imported to the robust statistical software SPSS for further analysis.

The main purpose of the analysis of the quantitative data was to determine the causal effect of independent variables on dependent variables and make inferences about the population. Therefore, inferential statistics such as Structural Equation Modelling were used to accept/reject the proposed research framework and hypotheses. However, prior to the inferential analysis, it was important to manage, clean and process the data to reduce errors. Thus, the researcher ensured that there is no missing data, outliers or multicollinearity issues within the data, which can cause errors in the results (more detail about the data management process is provided in Chapter 5). The researcher used Cronbach's alpha, EFA, CFA, convergent validity and discriminant validity to improve the reliability of the instrument within the context of KP. A more detailed description of the quantitative data collection, management and analysis is provided in Chapter 5.

#### **4.9 Phase Two: Qualitative Strategy Using the Case Study Method**

A case study approach was adopted in the second phase of the research for collection of the qualitative data. Various methodologists such as Yin (2003), Baxter and Jack (2008), and Taherdoost (2016), illustrate that case studies provide the means, by which a phenomenon can be studied with consideration of the context in which it

occurs. Moreover, the case study method allows researchers to explore a phenomenon within its real-life context (Baxter and Jack, 2008). Case studies have been largely used in the social sciences and have been found to be especially valuable in practice-oriented fields such as education, management, public administration and social work (Starman, 2013). Although case studies have often been considered to be part of qualitative research and methodology, they may also be quantitative or contain a combination of qualitative and quantitative approaches. This study, however, has used a case study to collect the qualitative data for the second phase of the study.

The case study method for phase two of this research was adopted with the researcher's hope of contributing to the limited number of documented case studies that have addressed the university environment and its impact on SEIs (Starman, 2013). Moreover, according to Yin (2003), a case study approach is more appropriate when the research seeks answers to 'how' and 'why' questions which are being asked about a contemporary set of events over which the researcher has little or no control. Furthermore, case studies are important for evaluation research as they can explain causal links in real-life interventions that are too complex for analysis by experimental or survey methods (Taherdoost, 2016). In context of the case study approach, Rubin and Rubin (2005) identified that interviews are one of the most important sources of evidence, as they usually deal with human affairs and interaction. Stemming from an interest in a thorough understanding of human behaviour, social scientists tend to use qualitative research with the aim of accumulating a detailed account of human behaviours and beliefs within the contexts in which they occur (Rubin and Rubin, 2005; Alshenqeeti, 2014). Also, interviews serve the purpose of obtaining multiple realities of one single case. Therefore, in this research it was important to conduct interviews with the key stakeholders from the university environment who are currently involved in the development of students' entrepreneurial intentions.

#### **4.9.1 Data Collection Procedure Using Semi-Structured Interviews**

Qualitative data is 'most often' collected through interviews as they are useful in eliciting narrative data that allows researchers to investigate people's views and perceptions in greater depth (Kvale, 2003; Alshenqeeti, 2014). Interviews are a key qualitative data collection method for social research (Easterby-Smith et al., 2018). This method is useful as the researcher can ask in-depth questions about the topic

and also follow-up on the topic with the participants (Saunders et al., 2015a). Interviews are useful and important as they have the potential to create deep, rich data as they explore topics in considerable detail in comparison to surveys and questionnaires, which are generally superficial (Sarantakos, 2013). Unlike surveys and set questionnaires, interviews allow the interviewer to respond to and probe responses, depending upon how the conversation develops during an interview (Ibid. 2013). Likewise, Burgess (2002), while highlighting the benefits of using interviews in qualitative research, argues that the interview provides an opportunity for the researcher to probe deeply and uncover new dimensions of a problem under investigation as respondents share their experiences. Researchers have categorised interviews as structured, semi-structured and unstructured (Patton, 2002; Saunders et al., 2012; Alshenqeeti, 2014).

The *structured interview* is aimed at collecting qualitative data via a set of standardised questions asked of all participants. This type of interview is usually employed as an alternative to a self-administered questionnaire (Saunders et al., 2015a). On the other hand, the *semi-structured interview* is a more flexible approach, which still involves the researcher asking a list of questions about a particular theme but allows them to change their sequence and their wording, to include new questions and/or omit some of the questions they intended to ask, depending on how the conversation develops (Remeyi et al., 2005; Goodell et al., 2016). Thirdly, the *unstructured interview* is an encounter in which the researcher aims to explore aspects of a given research problem in more depth. In an unstructured interview, there may not be any pre-planned sequence or specific type of question, as most of the questions emerge from the immediate conversation setting (Easterby-Smith et al., 2018; Saunders et al., 2012; Goodell et al., 2016). Unstructured interviews are much more exploratory than semi-structured interviews as they allow the researcher to gain insight into a topic without having formed any prior beliefs and understandings (Goodell et al., 2016). In qualitative research, semi-structured interviews are the most frequently used methods for data collection as here the goal is to understand the nature of relationships among all variables in a more specific research context (Bryman and Bell, 2011; Saunders et al., 2015a; Easterby-Smith et al., 2018).

Given these observations, and consistent with the current research objectives, this study opted to choose semi-structured interviews mainly because the study is based on a deductive approach (for more details, see section 4.4.3 on page 87). Moreover, semi-structured interviews were suitable because the research is testing pre-identified themes and an existing theory in the KP context. Thus, a semi-structured interview for the study was designed in line with the pre-identified themes/variables such as EE, ESP, EN, ES, EC and SF, etc. The main purpose of the interview themes was to discuss the quantitative results and to obtain a deeper insight into the situation. For this purpose, business school department heads were interviewed. In the next section, interview sampling is discussed before explaining the design of the interview.

#### **4.9.2 Interview Sampling**

For the selection of interviewees, a non-random sample was adopted, since there exist various stakeholders in the entrepreneurship field, and so it was impractical to obtain a random sample (Patton, 2002). In order to achieve the research objectives, a purposive sampling was adopted to obtain the required information. Creswell and Clark (2017) identified purposive sampling as being appropriate when the researcher intends to choose respondents with the purpose of gaining in-depth knowledge or deep understanding of the main phenomenon. The researcher paid great attention to the selection of appropriate informants for the interviews. The targeted research population were key stakeholders (business school department heads) involved in the universities and their entrepreneurship ecosystem. The population of this study consists of the 22 heads of the business schools included in the research. There are no specific guidelines for choosing an accurate sample size in qualitative studies; thus, the sample size relies on what the researcher knows, the purpose of the inquiry, usefulness and credibility of information, and what can be done within the available time and resources (Patton, 2002). De Vaus (2002) identified two main factors affecting the selection of the required sample size. These are the degree of accuracy required for the sample and the extent to which there is a variation in the population in regard to the key characteristics of the study. The available time and financial resources also influence the selection of the sample size. In this research, the sample size was based on informational considerations, as the purpose of the interview was to maximise the available information acquired from the literature review and analysis of the quantitative data. Moreover, when choosing interviewees, one should consider

a sample that best represents the diverse stakeholders and opinions of those stakeholders (Boyce and Neale, 2006). Therefore, based on a purposive sampling technique, six highly experienced and key policy makers from different universities were selected who adequately reflect the specialised research population. They were the most suitable people to reflect perceptions about the available entrepreneurial support provided by the universities and government and to outline the environment that may impact SEIs in the KP context. The demographic profile of the interview participants is provided in the following table:

Participants	Designation	Level of Education	University Status	Teaching Experience (Years)
P1	Director	PhD	Public	16
P2	Director	PhD	Public	12
P3	Head of Department	PhD	Private	14
P4	Director	PhD	Public	13
P5	Director	PhD	Private	12
P6	Director	MPhil	Public	17

**Table 4.8 Demographic profile of the interview participants**

Source: Developed by the author

The general rule about interviewing is that you will know when you have done enough when you hear the same information from a number of stakeholders (Patton, 2002; Creswell and Clark, 2017). In our case, the researcher believes that the point of saturation was achieved; thus, no more interviews were required. Having identified the research participants, in the following paragraph the interview design is explained. This will be followed by an explanation of data collection and analysis.

#### **4.9.3 Interview Design**

In order to obtain valid data, right interview design is essential (Patton, 2002). According to Boyce and Neale (2006), prior to the data collection, it is important to develop an interview protocol i.e., the rules that guide the administration and implementation of the interviews. These protocols ensure consistency between interviews, and thus increase the reliability of the findings.

In line with the advice from Patton (2002), Boyce and Neale (2006), and Creswell and Clark (2017), the following protocol was adopted to conduct the interviews:

1. Develop an interview guide that lists the questions or issues to be explored during the interview and includes an informed consent form (see Appendix B on page 328).
2. There should be no more than 15 main questions to guide the interview, and probes should be included where helpful (see Appendix C on page 330).
3. Where necessary, translate guides into local languages and test the translation (no translation was required).

In addition to the above-mentioned protocol, the literature review and the initial conceptual framework provided the frame of reference for the semi-structured interview themes and the relevant research questions. A pilot interview was conducted in order to review and evaluate these interview themes. Based on the pilot interview, the themes were reviewed, and modifications were made to the questions. Questions asked in the interview were aimed at the purpose of gathering participants' views, feedback and elaboration on specific issues that were identified during the quantitative analysis stage. These questions were about a general overview of the entrepreneurial support available to the students at the universities, the role of the Higher Education Commission (HEC) in enhancing entrepreneurship in the universities, different environmental factors affecting SEIs and the results of the quantitative stage of this study (Appendix C on page 330).

The researcher prepared a list of questions and themes in order to guide him through the interview process. Moreover, it was important to ensure that the questions were clear and free from any bias (Boyce and Neale, 2006); thus, they were refined several times and were designed in a logical and coherent order. In order to offer the interviewees, the chance to provide their own views and perspectives on topics that are of interest to the researcher, some follow-up questions were also included. The main themes included in the interview guide were as follows:

1. General information about the research.

### **Background information**

2. the interviewees university.
3. the entrepreneurial support available to the students.

### **Interviewees' perceptions of**

4. the university environment and its impact on SEIs.
5. the Entrepreneurship Education and its impact on SEIs.
6. the Entrepreneurship Support Programme and its impact on SEIs.
7. the Entrepreneurial Networking and its impact on SEIs.
8. the Faculty support and its impact on SEIs.
9. the Entrepreneurship Clubs and their impact on SEIs.
10. the available Entrepreneurial Resources and their impact on SEIs.
11. the University's linkages with outside organisations and their impact on SEIs.
12. the availability of Capital for entrepreneurs and its impact on SEIs.
13. the Government's policies towards entrepreneurship development in general and specifically in the universities and their impact on SEIs.
14. the Economic Environment and its impact on SEIs.
15. the Regulatory Environment and its impact on SEIs.
16. the Structural Support and its impact on SEIs.
17. the availability of Workforce and its impact on SEIs.
18. additional environmental factors not covered by this study and that may affect SEIs.

It can be seen from the interview themes that they not only cover the internal factors from the university environment but also include factors that are external to the university environment. Moreover, the themes are aligned with the proposed framework (figure 3.1 on page 71), which suits the deductive approach adopted for the study.

#### **4.9.4 Qualitative Data Collection and Analysis**

Due to COVID-19 situation, the researcher set up online interviews. The purpose of the interview, and the expected duration of the interview was explained prior to the interviews (Boyce and Neale, 2006). Moreover, the informed consent and recording permission was obtained and confidentiality measures were explained. The information obtained from the interviews, formed the basis of the findings and conclusion of the study relating to the overall impact of the university environment on SEIs in the KP region. In addition, the author also collected more qualitative data from

secondary sources such as university reports and HEC publications, which was then incorporated into the overall analysis.

Saunders et al. (2015b) argue that there are two main approaches to qualitative data analysis: inductive and deductive. An inductive approach seeks to develop a theory that is grounded in the data. A deductive approach, on the other hand, relies on an existing theory to outline the research process and analysis. Thus, qualitative data analysis can be performed by carrying out either inductively based analytical procedures or deductively-based ones (Saunders et al. 2015b). In this research, as discussed earlier, data collection (interviews) involved list of topics that were developed on the basis of the theoretical interest of the study and the related findings from the literature review and the survey results. Therefore, a deductive approach was found to be more appropriate to analyse university's environmental factors impacting SEIs.

Scholars such as Patton (2002) and Luo (2019) argued that the core meaning of qualitative data can be found by content analysis, which categorise or 'code' words, themes and concepts within the texts and then analyse the results. One of the advantages of the content analysis is that it follows a systematic procedure that can easily be replicated by other researchers, thus yielding results with high reliability (Luo, 2019). Also, it is highly flexible as it can be conducted any time, in any location, and at low cost. However, it is time intensive as manually coding large volumes of text is extremely time-consuming (Luo, 2019). In order to overcome this disadvantage, researchers can choose from a variety of software packages and save their time (Saunders et al. 2015b; Bergin, 2011). Therefore, for accelerating the analysis process, this researcher used NVivo software to assist in the categorising/coding of the themes and concepts from the data set. While doing so, all the collected data was uploaded to NVivo software in order to code the data, clarify meanings, organise and explain the data, search for relationships, and gain an understanding of the various dimensions explored. A more detailed description of the qualitative data collection procedure and its analysis appears in Chapter 6.

#### **4.9.5 Validity and Reliability of the Qualitative Data**

In order to ensure validity and reliability of the qualitative data by conducting interviews, Saunders et al. (2015a, p.328) identified the “5Ps Mantra – -referring to Prior Planning Prevents Poor Performance”, which means the interviewer must prepare beforehand in order to minimise bias (Boyce and Neale, 2006). Thus, in line with the advice from Saunders et al. (2015a), the researcher carried out prior planning before administering the interviews. For example, a list of questions and themes was prepared by the researcher in order to guide him through the interview process. Since the researcher adopted a deductive approach, the interview questions were based on pre-identified themes. To ensure that the questions were clear and free from any bias, they were refined several times and were designed in a logical and coherent order, inline (Frey, 2018).

Reliability/validity in interviews is also related to bias concerning the interviewee and interviewer. Interviewee bias is found when the interviewee is unwilling to reveal or discuss certain issues. Additionally, interview duration may also decrease the respondent’s willingness to reveal the required information and so will bias the data (Saunders et al., 2015a; Morse et al., 2002). On the other hand, interviewer bias relates to comments or non-verbal behaviour of the interviewer and to the ways the answers from the interviewee are recorded and interpreted; therefore, to ensure high reliability, all respondents need to be presented with the same wording and standardised questions (Robson, 2002; Thirsk and Clark, 2017).

To ensure the validity and reliability of the qualitative data collected via the interviews, clear and standardised procedures were followed when conducting each interview, particularly when recording the proceedings, and transcribing and interpreting the data, thus enhancing the reliability of the process (Thorne et al., 2016; Thirsk and Clark, 2017). In addition, the researcher only selected interviewees who were willing to participate in the research. Moreover, only themes supported by at least three different sources were taken into consideration, thus enhancing the validity of the process. Data triangulation was evident by the inclusion of primary and secondary data (interview transcripts, journal articles, university and HEC policy documents available on websites, etc.) in the analysis.

#### **4.10 Ethical Considerations**

In order to ensure high-quality research, a consideration of ethical issues is critical (Webster et al., 2014; Brittain et al., 2020). Zikmund (2010) referred to research ethics as the behaviour of the researcher towards the rights of individuals who are the subject of the researcher's work or who are affected by it. Business and social science studies usually have humans as their subjects; therefore, they give more consideration to ethical issues. Ethical issues are present in any kind of research, and ethical principles can be used to guide the research in addressing the initial and ongoing issues arising from the research in order to meet the goals of study as well as to maintain the rights of the research participants (Orb et al., 2001). Bryman and Bell (2015) identified key ethical research considerations, including addressing unethical research practices so as to avoid harm to participants and invasion of privacy, informed consent and avoiding the use of deception (Palmer et al., 2014). Similarly, while identifying the ethical issues that may arise during the research process, Saunders et al. (2015a) mentioned the participants' privacy, voluntary participation, withdrawal rights, consensus and dishonesty of participants, the researcher's behaviour, and the effect that the data usage, its analysis and reporting may have on the participants.

Prior to the data collection (Questionnaire and Interviews), the research design application was prepared and submitted to the university for approval by the University Ethics Committee. The research was conducted according to the prescribed LJMU guidelines, including observing confidentiality of information observed and accessed during the whole research process. The personal identifiable information of research participants was not collected and shared. Moreover, as suggested by Palmer et al. (2014), the collected data was stored in password protected computers and was only used for the research purpose. The informants at both stages of the data collection were informed of their rights to remain anonymous and to withdraw their participation whenever they so desired, and there was a statement in the consent form (Appendix A and B on page 321 and 328 respectively) advising them of such option and asserting their confidentiality. To avoid any ethical issues, all questions in both the questionnaire and semi-structured interviews were designed in a way to avoid causing any harm, embarrassment, stress or discomfort to the participants. The input of ethical committee

and experts within LJMU and universities of KP were taken into account to avoid the possible ethical dilemma.

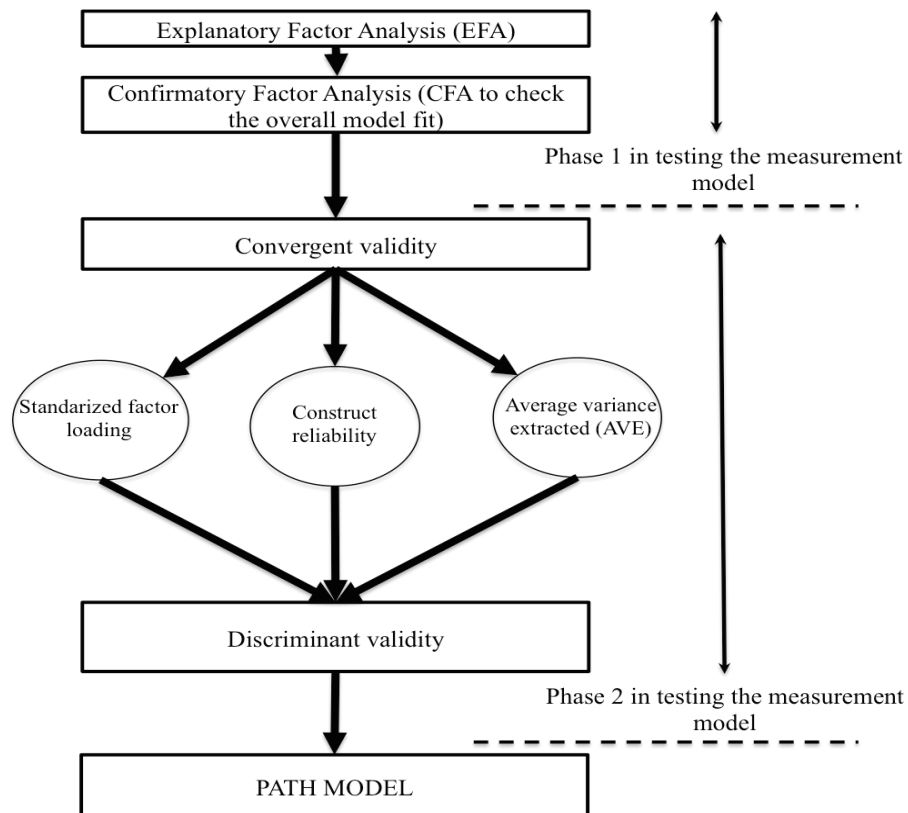
#### **4.11 Summary**

A detailed discussion of the methodology and methods adopted within the study has been provided in this chapter. After due consideration of the various alternatives, it has been shown that a mixed-methods approach was selected based on the nature of the study and the research objectives. A post-positivist philosophical paradigm was found to be the most appropriate, allowing both quantitative and qualitative data to be collected using questionnaires and semi-structured interviews, the purpose of the interviews being to elaborate on the findings from the quantitative data. All choices made in respect of methodology and data collection methods have been fully justified, and the ethical approach to the study has also been carefully detailed. The next chapter presents the findings and data analysis for phase one (quantitative data using questionnaires) of the study.

# **Chapter 5: Quantitative Data Analysis**

## 5.1 Introduction

The previous chapter provided the details about the research methodology and a significant portion was dedicated to methods used in the study. Since phase one of the study adopted a quantitative method in which a survey questionnaire was applied to obtain the data, this chapter presents results relating to the questionnaire that forms the basis of the investigation. This chapter comprises three main sections. The first section gives a description of the data management; this involves the process of data screening and cleaning as suggested by Gaskin (2016). It continues with a discussion of the demographic profile of the data sample, followed by the results of the descriptive data analysis, and ends with a preliminary reliability check of the questionnaire's main constructs. The second section deals with the hypotheses and model testing which were developed in the earlier chapters. According to Hair et al. (2018), prior to the model testing, it is important to run exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and confirm the convergent and discriminant validity. The following figure portrays these model testing stages suggested by Hair et al., (2018) and Gaskin (2016).



**Figure 5.1 Model Testing Stages**

Source: Hair et al., (2018)

## **5.2 Data Collection, Preparation and Preliminary Analyses**

Data were collected, in phase 1 of the study between November 2018 and January 2019, when the questionnaire was distributed to 490 Master's-level students of Business Studies at different universities in the KP region of Pakistan. To ensure data reliability, prudence was exercised in the handling of the data, including its storage, transmission and other ethical considerations. Data preparation is an important step in the conversion of raw data to appropriate forms suitable for analysis, including cleaning and coding (Cooper and Schindler, 2014). Therefore, for meaningful data interpretation, it is vital that the data is appropriately organised and cleaned before its analysis. Therefore, the researcher used robust Statistical Package for Social Sciences (SPSS) software to ensure the consistency and clear interpretation of the data. However, prior to transferring data in the software, columns and rows were developed by coding the items/variables. In the name column, questionnaire items were coded with numbers along with an abbreviation of the variable, while, in the label column, the item's statements were produced as such from the original questionnaire. The value section of the column was developed with '1' for 'Strongly Disagree' to '5' for 'Strongly Agree' on a five-point Likert scale along with setting the missing value at '99', portraying non-availability of information. Once the variable values were set, all responses from the participants were transferred into SPSS spreadsheets. However, prior to the analysis, it is important to perform data screening to ensure that there is no missing data or outliers and ensure that all the responses to each question/statement have been entered as per the criteria set out for the variables. Gaskin (2016) and Hair et al. (2018) point out that, to ensure that the data is useable, reliable, and valid for statistical tests, it must be cleaned. The specific issues related to the data screening often include: (i) identification of missing data; (ii) outliers; and (iii) reliability of the research instrument. Each of these issues is discussed below.

### **5.2.1 Missing Data**

Addressing the issue of missing data is an important preliminary data analysis step (Kline, 2016; Hair et al., 2017) Missing data often occurs when some information is missing for some variables/cases in an observation or when no data value is stored for the variable in a typical data set (Allison, 2002; Graham, 2012). Missing data happens when a respondent completes part of the questionnaire, leaving blank some individual questions, or even fails to complete some parts of the survey. Graham

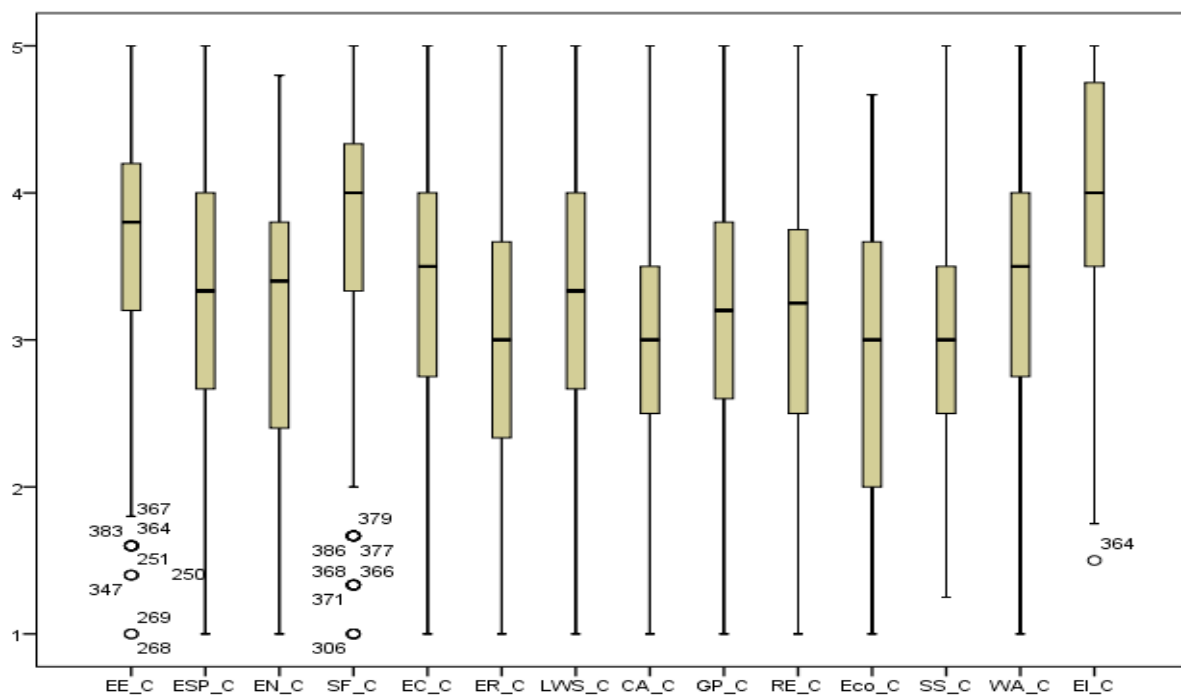
(2012) identifies a variety of reasons for the occurrence of missing data such as the respondent misses the question accidentally, or he/she does not know how to respond to the question, or the person intends to come back to the skipped question but just forgets or may leave the question blank because the topic is upsetting. Another common reason for missing data in social science research, as identified by Hair et al. (2017), is the length of questionnaires, as respondents may not answer questions near the end of a long survey due to slow reading or fatigue in general. Being a common occurrence, missing data can have a significant effect on the results inferred from the data by not only reducing the statistical power of a study and producing biased estimates but also leading to invalid conclusions (Kang, 2013;). Similarly, Tabachnick and Fidell (2019) consider that a large amount of missing data is problematic as it can affect the validity, reliability, and interpretation of the data (discussed later in this chapter, see for example section 5.2.3).

Among the 405 responses received, 19 were marked as incomplete, which makes up around 4.69% of the total received responses. Kang (2013) identifies two different ways for dealing with missing data: omission, when cases with missing data are discarded from further analysis, and Imputation, where probabilistic substitute values are provided in the place of missing data. Statisticians (such as Hair et al., 2017; Graham, 2012; Kang, 2013; Gaskin, 2016; Swalin, 2018) recommend dropping or omitting the cases with missing data, if their number is extremely small or if they relate to a very small percentage (up to 5%) of the total responses, and term this process as list-wise deletion. In line with these recommendations, the 19 questionnaires that had missing data were dropped from further analysis. Deletion of these cases amounted to 4.69% of total sample size, a percentage deemed acceptable for removal, especially given the large sample size. Thus, 386 completed questionnaires were considered valid and usable, which is an acceptable number of responses for further analysis for this study (see section 4.6.8 on page 107).

### **5.2.2 Outliers**

Outliers are cases which represent values with a unique set of characteristics which are substantially different from all other observations in a particular dataset (Gaskin, 2016; Hair et al., 2017). They represent cases with extreme data values, compared to the rest of the dataset. Kline (2016) identified data entry errors, extreme responses on

multi-point scales, flawed sampling techniques and missing values in calculations as the main reasons for outliers. Gaskin (2016) distinguished outliers as univariate and multivariate outliers. Univariate outliers are cases with extreme scores on only one variable while multivariate outliers have extreme values on several variables. In line with the advice from Gaskin (2016) and Kline (2016), a boxplot was examined for each variable to examine the univariate outliers. The following figure shows the results of univariate outlier analysis.



**Figure 5.2 Boxplot for Univariate Outliers**

(Where **EE**: Entrepreneurship Education, **ESP**: Entrepreneurship Support Programme, **ENS**: Entrepreneurial Networking, **SF**: Supportive Faculty, **EC**: Entrepreneurship Club, **ER**: Entrepreneurship Resources, **LWS**: Linkages with Society, **CA**: Capital Availability, **GP**: Government Policies, **RE**: Regulatory Environment, **Eco**: Economic Environment, **SS**: Structural Support, **WA**: Workforce Availability, **EI**: Entrepreneurial Intentions)

The boxplot (see Figure 5.2) suggests that there are 16 outliers in total. Hair et al. (2017) suggest that a few univariate outliers within a large sample should be seen as less problematic and not harmful to the data analysis and interpretations. As the univariate outliers identified above are small, therefore, the researcher decided to retain these outliers.

After detecting the univariate outliers, the next step was to look for multivariate outliers, which are unusual combinations of scores on several variables. These outliers are identified by computing the Mahalanobis distance ( $D^2$ ), which symbolises the distance

of cases from the means of the predictor variables (Field, 2013). To identify the multivariate outliers, Mahalanobis distance ( $D^2$ ) was computed using SPSS 24 with the regression procedure for the variables. The principle for multivariate outliers is Mahalanobis distance at  $p \leq 0.001$ . A case is a multivariate outlier if the probability associated with its  $D^2$  is 0.001 or less.  $D^2$  follows a chi-square distribution with degrees of freedom equal to the number of variables included in the calculation (Hair et al., 2017; Tabachnick and Fidell, 2019). Doing so, 13 multivariate outliers were detected within the data test, which are presented in Table 5.1.

Case No.	Mahalanobis Distance ( $D^2$ ) MD	Probability_MD 1-CDF.CHISQ (MD,50)	Outliers Probability_MD<0.001
348	89.08308	0.00056	1
353	88.43278	0.00066	1
355	88.65040	0.00062	1
356	90.12196	0.00044	1
361	94.91706	0.00013	1
365	89.56159	0.00050	1
366	83.98776	0.00186	0.00
367	88.60969	0.00063	1
375	88.20771	0.00069	1
380	87.86534	0.00075	1
381	74.89964	0.01285	0.00
382	101.65845	0.00002	1
383	52.54195	0.37583	0.00
384	88.22191	0.00069	1
385	118.64913	0.00000	1
386	96.40359	0.00009	1

**Table 5.1 Multivariate Outliers**

(Where **CDF.CHISQ** is cumulative distribution function for Chi-Square and **DF (50)** is degree of freedom i.e. the total number of variables)

The Mahalanobis distance ( $D^2$ ) for the identified outliers ranged from 87.865 to 118.649, which calls for further consideration as they may affect the requirements for further multivariate statistical tests like EFA, SEM, etc (Gaskin, 2016; Hair et al. 2017). Kline (2016) is in favour of the idea of retaining multivariate outliers if they are relatively small in number, as they are less problematic and harmful to the analysis. Therefore, in view of the above recommendations, the researcher decided to retain these outliers. After identifying the missing data and outliers, the next logical step is to explain the reliability of the scale.

### 5.2.3 Reliability

The reliability of a measurement instrument refers to the extent to which it yields accurate, consistent and stable responses over time (Field, 2013). Reliability concerns the ability of an instrument, a survey in this case, to measure consistently (Tavakol et al., 2008). Kumar (2014) describes it as the ability to produce consistent measurements each time, i.e., if research findings can be replicated several times or when the research is conducted again. Hence, reliability ensures consistent measurement across time and across various items in the instrument (Tavakol et al., 2008; Sekaran and Bougie, 2016).

In order to test the scale reliability, most commonly cited method is Cronbach alpha coefficient (Nunnally and Bernstein 1994; Sekaran 2003; Tavakol et al., 2008 and Tavakol and Dennick 2011). In general, higher coefficients (closer to 1) indicate better inter-item reliability that implicitly leads to an improved measurement instrument. In contrast, instruments with coefficients less than 0.70 are viewed as having a poor reliability (Nunnally and Bernstein 1994; Tavakol and Dennick 2011; Hair et al., 2017). Therefore, to assess the internal consistency of the measures' items in the questionnaire for the current study, Cronbach's alpha coefficient ( $\alpha$ ) was generated for the 14 constructs using SPSS. The summary of these results is presented in the below table.

No.	Constructs	No. of Items	Cronbach's Alpha	Comments
1	Entrepreneurship Education (EE)	5	0.787	Accepted
2	Entrepreneurship Support Programme (ESP)	3	0.797	Accepted
3	Entrepreneurial Networking (EN)	5	0.839	Accepted
4	Supportive Faculty (SF)	3	0.841	Accepted
5	Entrepreneurship Club (EC)	4	0.810	Accepted
6	Entrepreneurial Resources (ER)	3	0.813	Accepted
7	Linkages with Society (LWS)	3	0.784	Accepted
8	Capital Availability (CA)	4	0.772	Accepted
9	Government Policies (GP)	5	0.830	Accepted
10	Regulatory Environment (RE)	4	0.790	Accepted
11	Economic Environment (Eco)	3	0.818	Accepted
12	Structural Support (SS)	4	0.774	Accepted
13	Workforce Availability (WA)	4	0.822	Accepted
14	Entrepreneurial Intentions (EI)	4	0.736	Accepted

**Table 5.2 Reliability Test Results for Questionnaire Constructs**

Source: Developed by the author

The table demonstrates that the reliability coefficients ranged from 0.736 to 0.940, which are above the recommended level (0.70). As all constructs are above the threshold ( $>0.70$ ), therefore, it is concluded that no internal consistency problem was revealed up to this stage of data analysis.

After, considering the missing data, outliers and reliability of the scale, the next logical step was to explain the demographic variables of the study which are explained below.

### **5.3 Demographic Profile of the Study Sample**

The demographic information gathered from part 1 of the questionnaire includes characteristics such as age, gender, university status, semester, and area of specialisation. The demographic profile thus generated from the results drawn from the collected data is described below and summarised in Table 5.3.

- The analysis of the gender profiling of the research sample shows that males comprise 78.8% while the remaining 21.29% are females. The researcher found that this result reflects the overall gender diversity of the educated population in the KP region of Pakistan, which is 77% and 23% for males and females respectively (Haq, 2016).
- As shown in Table 5.3 below, the majority of the participants are 21-25 years old, 58 are between 26 and 30 years of age, while only four participants are aged over 31 years. This result reflects the on-the-ground reality of the Pakistani educational system where generally students continue their education until Master's level without any gap years in between (Tanveer et al., 2013).
- The analysis of the university status profile of the research sample revealed that it includes participants from both public (59.5%) and private (40.5%) universities.
- The research study sample includes not only MBA students but also students from other courses such as MSc Entrepreneurship, MA Marketing, MA HRM, etc. This reveals that respondents were from different specialisations of Business Studies.

- The data also revealed that most of the respondents (95.6%) were studying full time while only 4.4% were studying part time. This shows that generally in Pakistani society, students have a full-time mode of study, instead of studying while working.
- In terms of educational level, the respondents' semester profiles indicate that they are currently studying at different levels of their Master's degree. This meets the basic inclusion criterion for this research. It is because these participants face making an immediate decision about their career choice after their graduation.
- The research study revealed that the respondents are from different areas of specialisation, i.e. having majors in different fields like finance, accounting, entrepreneurship, marketing and HRM, etc. This is a good indication that the study intends to find about the EIs of students from a variety of educational backgrounds, as shown in the below table.

Variable		Frequency	Percentage
Gender	Male	304	78.8
	Female	82	21.2
Age Group	21 - 25	324	83.9
	26 - 30	58	15.0
	31 or over	4	1
University Status	Public	230	59.5
	Private	156	40.5
Course	MBA	315	81.6
	Other	71	18.4
Mode of Study	Full-Time	369	95.6
	Part-Time	17	4.4
Area of Specialisation (Majors)	Accounting	13	3.4
	Entrepreneurship	33	8.5
	Finance	216	56.0
	General	6	1.6
	HRM	68	17.6
	Marketing	50	13.0

**Table 5.3 Descriptive Statistics for the Profile Data**

Source: Developed by the author

### 5.3.1 Descriptive Analysis

A descriptive analysis of the data obtained from the sample is presented in this section.

The questionnaire (see Appendix A on page 321) consists of 14 major constructs, which were measured by 50 different items. The agreement or disagreement of respondents was sought by using a five-point Likert scale ranging from 'Strongly Disagree' to 'Strongly Agree'. The responses were coded as follows: number 5 indicated strong disagreement, number 4 indicated disagreement, number 3 indicated neutral, number 2 indicated agreement and number 1 indicated strong agreement with the statement. In order to make a distinction between the respondents' agreement and disagreement, 3 was chosen as the midpoint on the scale. The following section explains descriptive analysis of respondent's responses to each construct.

#### Entrepreneurship Education

	N	Minimum	Maximum	Mean	Std. Deviation
EE1	386	1.00	5.00	3.4793	.99913
EE2	386	1.00	5.00	3.6399	1.07019
EE3	386	1.00	5.00	3.6943	1.11183
EE4	386	1.00	5.00	3.7720	1.09537
EE5	386	1.00	5.00	3.3575	1.10332
Valid N (listwise)	386				

**Table 5.4 Descriptive Statistics for 'Entrepreneurship Education' Construct**

Respondents were asked to indicate the extent to which they agree about the existence of elective courses, projects, conferences and workshops related to entrepreneurship education at their universities. The results show that the mean scores of the six items used to measure EE are between 3.35 and 3.77 with standard deviation ranging from 0.99 to 1.11. It can be concluded that most of the respondents (as the mean score is more than the midpoint of 3) agreed about the EE at their universities in terms of courses, project work, conferences and workshops.

## Entrepreneurship Support Programme

	N	Minimum	Maximum	Mean	Std. Deviation
ESP1	386	1.00	5.00	3.2513	1.11731
ESP2	386	1.00	5.00	3.0363	1.18814
ESP3	386	1.00	5.00	3.2202	0.99907
Valid N (listwise)	386				

**Table 5.5 Descriptive Statistics for ‘Entrepreneurship Support Programme’ Construct**

Three items were used to measure the Entrepreneurship Support Programme at universities in this study. The mean scores were 3.25, 3.03 and 3.22, all above the midpoint of 3 on the five-point Likert scale, showing the participants’ agreement on the scale measures. Moreover, the descriptive statistics for ESP also revealed that the respondents were not very dispersed around their mean scores on individual items (standard deviations between 0.99 and 1.18).

## Entrepreneurial Networking

	N	Minimum	Maximum	Mean	Std. Deviation
EN1	386	1.00	5.00	3.2306	1.17824
EN2	386	1.00	5.00	3.3938	1.04961
EN3	386	1.00	5.00	2.9275	1.01925
EN4	386	1.00	5.00	3.0544	1.05911
EN5	386	1.00	5.00	3.6036	1.19126
Valid N (listwise)	386				

**Table 5.6 Descriptive Statistics for ‘Entrepreneurial Networking’ Construct**

Using a five-point Likert scale and five items, the Entrepreneurial Networking construct was measured. As shown above, the observed mean ratings ranged from 2.92 to 3.60 and standard deviations from 1.01 to 1.19. The average mean and standard deviations for the five items were 3.162 and 1.052, thereby indicating a significant number of respondents who believe that their universities have entrepreneurial networks that help in promoting entrepreneurial activities.

## Supportive Faculty

	N	Minimum	Maximum	Mean	Std. Deviation
SF1	386	1.00	5.00	3.6036	1.19126
SF2	386	1.00	5.00	3.7565	1.08246
SF3	386	1.00	5.00	3.8601	1.03503
Valid N (listwise)	386				

**Table 5.7 Descriptive Statistics for 'Supportive Faculty' Construct**

The findings reveal that the mean scores for the three items related to Supportive Faculty were between 3.60 and 3.86, all above the midpoint of 3 on the five-point Likert scale. Similarly, the standard deviation ranged from 1.03 to 1.19. This indicates participants' agreement on the scale measures, i.e., most of them found the faculty members to be supportive towards entrepreneurship.

## Entrepreneurship Club

	N	Minimum	Maximum	Mean	Std. Deviation
EC1	386	1.00	5.00	3.0959	1.24155
EC2	386	1.00	5.00	3.2280	1.09537
EC3	386	1.00	5.00	3.4767	1.07182
EC4	386	1.00	5.00	3.6114	1.12089
Valid N (listwise)	386				

**Table 5.8 Descriptive Statistics for 'Entrepreneurship Club' Construct**

Respondents were asked to give their opinions concerning four statements related to the degree to which they perceived the presence of entrepreneurship clubs in their universities. The findings revealed that the four items had means above 3 (i.e., midpoint), and an average standard deviation of 1.13, indicating that a relatively high level of agreement existed among respondents about this construct.

## Entrepreneurial Resources

	N	Minimum	Maximum	Mean	Std. Deviation
ER1	386	1.00	5.00	3.0720	1.03439
ER2	386	1.00	5.00	3.0596	1.02391
ER3	386	1.00	5.00	3.1969	1.08716
Valid N (list wise)	386				

**Table 5.9 Descriptive Statistics for 'Entrepreneurial Resources' Construct**

Three items were used to measure the Entrepreneurial Resources construct in this study. The mean scores were 3.05 and 3.19 (above the midpoint of 3 on the five-point Likert scale) for the items related to 'incubator facilities' and 'market research resources' at universities. This shows that most respondents are of the opinion that there are ample entrepreneurial resources to help students shape their entrepreneurial intentions.

## Linkages with Society

	N	Minimum	Maximum	Mean	Std. Deviation
LWS1	386	1.00	5.00	3.3627	1.09452
LWS2	386	1.00	5.00	3.2591	1.08842
LWS3	386	1.00	5.00	3.3187	1.17750
Valid N (list wise)	386				

**Table 5.10 Descriptive Statistics for 'Linkages with Society' Construct**

Three items were used to measure the Linkages with Society construct in this study. The mean scores were 3.36, 3.25 and 3.31, all above the midpoint of 3 on the five-point Likert scale. The average mean score was 3.30, which indicated the participants' agreement on the scale measures. Specifically, these results mean that the majority of the respondents identified that their universities have established good linkages with society, including local businesses, government institutions and other universities. Again, the average standard deviation was 1.11, indicating that respondents were not very dispersed around their mean scores on individual items.

## Capital Availability

	N	Minimum	Maximum	Mean	Std. Deviation
CA1	386	1.00	5.00	2.8057	1.07199
CA2	386	1.00	5.00	3.0803	1.04758
CA3	386	1.00	5.00	3.0415	1.02100
CA4	386	1.00	5.00	2.9016	1.01452
Valid N (listwise)	386				

**Table 5.11 Descriptive Statistics for 'Capital Availability' Construct**

Respondents were asked to give their opinions concerning four statements related to the degree to which they perceived the ease of availability of capital for venture creation in the KP region of Pakistan. The findings revealed that the four items had an average mean of 2.95, (i.e. below the midpoint), which indicated the participants' disagreement on the scale measures. Specifically, these results mean that the majority of the respondents identified lack of capital availability for venture creation.

## Government Policies

	N	Minimum	Maximum	Mean	Std. Deviation
GP1	386	1.00	5.00	3.2720	1.09596
GP2	386	1.00	5.00	3.2383	.97244
GP3	386	1.00	5.00	3.1891	1.02842
GP4	386	1.00	5.00	3.1010	1.00526
GP5	386	1.00	5.00	3.0518	1.01797
Valid N (listwise)	386				

**Table 5.12 Descriptive Statistics for 'Government Policies' Construct**

Respondents' perceptions towards the government policies in regard to the promotion of an entrepreneurial ecosystem were measured by five items, the average mean scores for which were 3.16 on the five-point scale, thus reflecting respondents' agreement with the items. In addition, the average standard deviation of 1.01 indicates a little dispersion from that mean score. Respondents agreed that the government's policies are conducive for the promotion of entrepreneurship.

## Regulatory Environment

	N	Minimum	Maximum	Mean	Std. Deviation
RE1	386	1.00	5.00	3.1528	1.02689
RE2	386	1.00	5.00	3.1036	.93400
RE3	386	1.00	5.00	3.2254	1.06587
RE4	386	1.00	5.00	2.9430	1.00485
Valid N (listwise)	386				

**Table 5.13 Descriptive Statistics for 'Regulatory Environment' Construct**

Regarding the regulatory environment construct, respondents were asked to respond to four statements in order to measure their level of agreement concerning legal requirements, registration of new ventures and the involved bureaucratic procedures. The mean scores reveal an average of 3.10, indicating a level of agreement among the respondents. Specifically, they reported high agreement on the third statement, which related to the legal requirements for establishing a business in the KP region.

## Economic Environment

	N	Minimum	Maximum	Mean	Std. Deviation
Eco1	386	1.00	5.00	2.6321	1.03918
Eco2	386	1.00	5.00	2.7824	1.08079
Eco3	386	1.00	5.00	2.9896	1.15090
Valid N (listwise)	386				

**Table 5.14 Descriptive Statistics for 'Economic Environment' Construct**

The Economic Environment construct was measured by three items on the five-point Likert scale, where 3 represents a midpoint between agreement and disagreement levels. All mean scores were below 3, reflecting a low level of agreement among the respondents, with the highest mean score of 2.98 being found for 'environment for investment', and the lowest mean 2.63 being for 'overall economy of the KP region'. Moreover, the average mean score was 2.79, with an average standard deviation of 1.08. The results suggest that respondents see the economic environment as not very conducive for new venture creation.

## Structural Support

	N	Minimum	Maximum	Mean	Std. Deviation
SS1	386	1.00	5.00	2.9404	1.02391
SS2	386	1.00	5.00	2.9689	.96380
SS3	386	1.00	5.00	2.9585	.92769
SS4	386	1.00	5.00	2.9948	1.08351
Valid N (listwise)	386				

**Table 5.15 Descriptive Statistics for 'Structural Support' Construct**

Respondents were asked to give their opinions concerning three statements related to the degree to which they perceived the support infrastructure in the KP region as well functioning. The findings revealed that the four items had means below 3 (i.e., midpoint), and an average mean of 2.96, indicating that a relatively low level of disagreement existed among respondents about this construct.

## Workforce Availability

	N	Minimum	Maximum	Mean	Std. Deviation
WA1	386	1.00	5.00	3.2176	.97197
WA2	386	1.00	5.00	3.3860	1.01608
WA3	386	1.00	5.00	3.3834	1.08263
WA4	386	1.00	5.00	3.2927	1.10008
Valid N (listwise)	386				

**Table 5.16 Descriptive Statistics for 'Workforce Availability' Construct**

The findings reveal that the mean scores for the four items related to Workforce Availability were between 3.21 and 3.38, thereby indicating that a significant number of respondents believe that there is an ample workforce available to entrepreneurs. Moreover, the descriptive statistics for workforce availability also revealed that the respondents were not very dispersed around their mean scores on individual items (standard deviations between 0.97 and 1.10).

## 5.4 Parametric/Non-Parametric Tests

The key objective of the quantitative analysis is hypothesis testing which is one of the most important concepts in statistics. However, prior to the hypothesis testing,

statistical tests are used to check whether the parametric or non-parametric tests are suitable for the data (Tyler, 2017; Field, 2013).

Parametric tests evaluate hypotheses for a particular parameter, usually the mean of a population. They require assumptions about the parameters of the population distribution from which the sample is drawn. With parametric tests, it is assumed that the population data is normally distributed, and they measure the central tendency with the mean value (Tyler, 2017; Gaskin, 2016). On the other hand, non-parametric tests evaluate hypotheses for entire population distributions, i.e., do not depend on any distribution. They measure the central tendency with the median value and do not require any assumptions (Tyler, 2017). Moreover, parametric tests are used for ratio or interval data when complete information about the population is available. On the other hand, non-parametric tests are used for ordinal or nominal data where no information about the population is available (Field, 2013).

The advantage of using a parametric test instead of a nonparametric equivalent is that the former will have more statistical power than the later (Doornik and Hansen, 2008; Kline, 2016). However, parametric tests require that some assumptions are satisfied, the most important of which is the normal distribution of the data (Gravetter and Wallnau, 2014). The next section thus explains the normality results which will determine the use of either parametric or non-parametric analysis.

#### **5.4.1 Normality**

Normality refers to the distribution of the data for a particular variable (Gaskin 2016) and is used to determine whether the data is normally distributed. Normality is assessed in different ways; however, the two most used ways are skewness and kurtosis (Ryu, 2011; Field, 2013; Gaskin, 2016), which are discussed below.

1) Skewness represents the symmetry of the data distribution. According to Gaskin (2016), when responses are heavily weighted towards one end of the scale, they do not fall into normal distribution, causing skewness of the data. In statistics, generally a normally distributed data has skewness value +1, whereby a skewness value above 1 shows right (positive) skewed data while a skewness value below -1 represents left (negative) skewed data, and the skewness value in between is considered normal

(Gaskin 2016). Some scholars (such as Doornik and Hansen, 2008; Kline, 2016; Ryu, 2011) are less conservative and recommend that even a skewness value of up to +2.2, does not pose a significant normality issue.

2) Kurtosis shows if the data distribution is flat or peaked when compared to a normal distribution (Thulin, 2014; Hair et al., 2017). Data with outliers has large kurtosis while low kurtosis represents data without outliers (Gaskin, 2016). The rule used for assessing whether or not the kurtosis can pose a problem is that an overall kurtosis score of 2.2 or less is deemed not significantly different from that of the normal distribution (Field, 2013; Gravetter and Wallnau, 2014). In the current study, the skewness and kurtosis values were computed in order to check the normality of all the individual measured items, which are shown in the table below.

Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
EE1	-.732	-.301	CA1	-.140	-.976
EE2	-.508	-.336	CA2	-.279	-.695
EE3	-.713	.032	CA3	-.054	-.650
EE4	-.833	-.051	CA4	.109	-.608
EE5	-.790	-.102	GP1	-.294	-.630
ESP1	-.358	-.595	GP2	-.339	-.467
ESP2	-.239	-.637	GP3	-.256	-.548
ESP3	-.117	-.881	GP4	-.003	-.549
EN1	-.280	-.512	GP5	-.015	-.638
EN2	-.312	-.954	RE1	-.281	-.582
EN3	-.272	-.663	RE2	-.112	-.414
EN4	.087	-.508	RE3	-.291	-.619
EN5	-.083	-.756	RE4	-.117	-.663
SF1	-.669	-.436	Eco1	.056	-.927
SF2	-.739	-.144	Eco2	.082	-.746
SF3	-1.017	.695	Eco3	-.113	-.872
EC1	-.207	-1.040	SS1	-.012	-.721
EC2	-.307	-.543	SS2	-.043	-.840
EC3	-.543	-.433	SS3	.024	-.353
EC4	-.614	-.316	SS4	-.174	-.990
ER1	.213	-.754	WA1	-.311	-.431
ER2	-.266	-.512	WA2	-.382	-.429
ER3	-.288	-.653	WA3	-.277	-.657
LWS1	-.435	-.571	WA4	-.423	-.571
LWS2	-.347	-.576	EI1	<b>-1.211</b>	<b>1.176</b>
LWS3	-.294	-.918	EI2	-.627	-.537
			EI3	-1.066	.657
			EI4	-.942	.006

**Table 5.17 Skewness and Kurtosis**

The table reveals that the maximum absolute value of skewness was -1.211 while the maximum absolute value of kurtosis was 1.176. This indicates no significant deviation from normal distribution, i.e., values for skewness and kurtosis fell between the -2 and + 2 threshold (George and Mallery, 2011; Field, 2013). Therefore, based on the above-mentioned criteria and results portrayed in Table 5.17, it is suggested that the data is normally distributed. Having established the data is normally distributed, parametric tests such as factor analysis and structural equation modelling are discussed next.

## **5.5 Factor Analysis**

Factor Analysis is a statistical technique aimed at identifying the method to help in reducing and summarising the collected data in small groups of factors (Acton et al., 2009). It consists of several statistical methods that aim to simplify complex sets of data (Kline, 2016). Hair et al. (2017) point out that factor analysis involves techniques that are used to ascertain the underlying structure in a data set, i.e. it allows the researcher to look at the patterns that underlie the correlations between large numbers of variables. Thus, it aims to address the interrelationships between variables by defining a set of common underlying fundamental dimensions/features (called factors).

There are two forms of factor analysis, namely Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Gaskin, 2016; Hair et al., 2017). EFA is used to discover a set of variables that underlie the common factors in the data based on the correlations among the variables in each factor, while CFA is used to test a hypothesis of common factors and how they are related to observed variables in order to confirm that hypothesis, which has already been identified from previous research (Watkins 2018). The intended purpose of the research identifies the type of analysis to be used. When the underlying dimensions of a data set are unknown, then EFA is appropriate, while CFA is appropriate for theory building when relationships can be hypothesised and tested, based on the structure of the data set (Gaskin and Happell, 2014). Both types are discussed in detail below.

### **5.5.1 Exploratory Factor Analysis**

EFA is designed to investigate the relations between the observed and latent variables in order to determine how and to what extent the observed variables are linked to their underlying factors (Byrne, 1998). Factor analysis is mainly used to reduce a large

number of variables or scale items to a smaller and more manageable number of factors (Pallant, 2010). Central to this is the nature of the underlying structure of items. Before performing EFA, there are certain concerns that need to be addressed such as the suitability and adequacy of the data sample, communalities, factor retention criteria, etc. These issues are discussed below.

The factorability of the data is assessed using two types of tests, i.e., Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity (Gaskin, 2016; Hair et al., 2018).

The KMO measure of sampling adequacy tests whether it is appropriate to execute a factor analysis on the data (Gaskin, 2016). When the outcome of the KMO measure is between 0.6 and 1, executing a factor analysis on the data is appropriate; however, higher values (close to 1) indicate better sampling adequacy levels (Kaiser, 1970). On the other hand, Bartlett's Test of Sphericity tests whether each variable correlates with itself and not with other variables (Gaskin, 2016). Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data (Hair et al., 2017). Therefore, before performing EFA, the KMO measure of sampling adequacy and the Bartlett's test of Sphericity were performed to ensure the appropriateness of the data set for EFA. Their use in discovering the presence of correlations among underlying variables is in line with other EI-related studies (such as Bazan et al., 2019, Karimi, 2020; Karyaningsih, 2020). The results are drawn in the table below.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.891
Bartlett's Test of Sphericity	Approx. Chi-Square	10997.472
	df	1225
	Sig.	.000

**Table 5.18 KMO and Bartlett's Test**

The above table shows that the KMO Measure of Sampling Adequacy (0.891) is above the minimum acceptable value of 0.6, thus showing no problem with the sample size. Moreover, Bartlett's test of Sphericity confirmed the significance value as  $p=0.000$ , thus leading to the conclusion that the variables do relate to one another enough to run a meaningful EFA. In this way, the quantitative data collected from the study sample supported the use of EFA.

A suitable approach needs to be determined for EFA whereby the factor extraction method, factor retention criteria and factor rotation methods are identified for the interpretation of the resulted factor loadings. The adopted approach is discussed as follows:

### **Factor Extraction**

Factor Extraction refers to removing the common variance that is shared among a set of variables in the analysis (Kieffer, 2004). It involves determining the factors that best signify the interrelations between items (Pallant, 2010). Factor extraction is used to determine provisional factor loading, i.e., initial factor solution (Gaskin and Happell, 2014). To establish the minimum number of factors that could represent the associations among the set of variables in the best way, it is necessary to choose the accurate factor extraction method (Pallant, 2010). Although there is no universal factor extraction method in social sciences, any method used should allow the purpose of using factor analysis to be achieved (Roberson et al., 2014). Different methods include Principal Component Analysis (PCA), Principal Axis Factoring (PAF), Maximum Likelihood (ML), Alpha Factoring (AF), etc. Since the primary reason for performing EFA in this study is data reduction, therefore, to reduce a large set of items to a more manageable number, PCA is used as the primary method of factor extraction in line with advice from several scholars (Henson et al., 2004; Pallant, 2010; Hair et al., 2017; Tabachnick and Fidell, 2019). PCA was also used as it is not only the most commonly used method, but it also extracts a minimum set of variables while accounting for maximum variance (Gaskin, 2016). Previously, entrepreneurship-related studies (such as Giacomini et al., 2011; van Ewijk and Belghiti-Mahut 2019) also used Principal Component Analysis (PCA) for factor extraction in their studies.

### **Factor Retention**

Factor Retention deals with approaches used to determine the number of factors that best describe the underlying relationships among the variables under study. While looking for factor retention criteria, there are various approaches for determining the number of factors which best describe the underlying relationships among the research variables. The two most common methods used for factor retention are Kaiser's Criterion and Cattell's Scree Plot tests (Gaskin, 2016).

While following Kaiser's criterion, eigenvalues for the factors are measured. Eigenvalues refer to the amount of total variance explained by a factor. An eigenvalue value of 1 or more denotes a significant amount of variance. Therefore, according to Kaiser's Criterion, factors with eigenvalues greater than 1 are retained for further analysis; hence, this criterion is also referred to as the 'Eigenvalue-greater-than-one' rule (Pallant, 2010, Field, 2013).

By contrast, under Cattell's Scree Plot tests, the eigenvalues are plotted against the number of factors in their order of extraction and the shape of the resulting curve is used to evaluate the cut-off point (Hair et al., 2017). This "elbow" of the graph where the eigenvalues seem to level off is found and factors or components to the left of this point should be retained as significant (Tabachnick and Fidell, 2013; Hair et al., 2017). In-line with advice from scholars (Field, 2013; Roberson et al., 2014; Hair et al., 2017), multiple criteria should be employed to determine the most parsimonious set of factors.

Moreover, several Entrepreneurial Intentions-related studies have also used these factor retention criteria (such as Dakoumi and Abdelwahed, 2014; Bazan et al., 2018; Ewijik and Belghiti-Mahut, 2019). Therefore, this study employed both Kaiser's Criterion and Cattell's Scree Plot tests to establish the number of retained factors for further analysis.

### **Factor Rotation**

Factor Rotation causes factor loadings to be more clearly distinguished, which is often necessary to facilitate interpretation (Field, 2013; Roberson et al., 2014; Gaskin, 2016). In order to interpret the results in a simpler form, researchers recommend the rotation of resulting factors, as it maximises high correlations between factors and variables and minimises low ones (Field, 2013; Osborne, 2015; Hair et al., 2017). Gaskin and Happell (2014) are of the opinion that, if enough information is provided by the unrotated factor solutions for adequate interpretation of the variables under study, then rotation of factors is not needed; however, in general, rotation is carried out to make the factor structures meaningful and easily interpretable. The two broad categories of factor rotation Orthogonal methods (including Varimax, Quatrimax and Equamax) and Oblique methods (including Promax and Direct Oblimin). Traditionally,

in social science contexts, researchers have favoured orthogonal rotation methods over oblique methods as they involve simpler mathematics and produce easy-to-interpret solutions (Costello and Osborne, 2005). The Varimax method of orthogonal rotation aims at maximising the variance of factor loading by making high loadings higher and low ones lower for each factor (Tabachnick and Fidell, 2013). Also, the varimax method produces a clearly defined factor structure (Field, 2013). For analysis purposes, if the factor loadings are +0.60 or greater, they are considered to be very significant, and can be used for further analysis (Hair et al., 2017). Therefore, this study adopted a Varimax method of orthogonal rotation for maximising variance.

After identifying the procedures that will be adopted and followed for carrying out the factor analysis in SPSS, the next section discusses the process (factor extraction, retention, and rotation) and results of factor analysis conducted for all 54 items that measured different environmental factors which influence SEIs.

### **5.5.2 EFA Results**

As a starting point for EFA, Principal Component Analysis (PCA) with Kaiser's Criterion and Cattell's Scree Plot tests were applied for factor extraction. In order to identify any problematic items before proceeding to further analysis, communalities between the measured items were checked, as they represent the multiple correlation between each variable and the factors extracted (Field, 2013).

#### **Communalities**

A communality is the extent to which an item correlates with all other items (Gaskin, 2016). Hogarty et al. (2005) describe it as the variance in each variable that is explained by the factors. Thus, it indicates how much variance of each original variable is explained by the extracted factors. Communalities values usually range between 0 and 1, but higher communalities are better as variables with high values are well represented in the extracted factors. If communalities for a particular variable are low (between 0.0-0.4), then that variable may struggle to load significantly on any factor (Field, 2013; Gaskin, 2016). Therefore, before performing EFA, the communalities measures for the variables were identified to ensure accurate results from Kaiser's Criterion and Cattell's Scree plot tests. The results are drawn in the following table.

Item	Initial	Extraction	Item	Initial	Extraction
EE1	1.000	.646	CA1	1.000	.511
EE2	1.000	.664	CA2	1.000	.736
EE3	1.000	.614	CA3	1.000	.763
EE4	1.000	.521	CA4	1.000	.749
EE5	1.000	.574	GP1	1.000	.681
ESP1	1.000	.545	GP2	1.000	.676
ESP2	1.000	.676	GP3	1.000	.689
ESP3	1.000	.627	GP4	1.000	.659
EN1	1.000	.555	GP5	1.000	.696
EN2	1.000	.724	RE1	1.000	.630
EN3	1.000	.653	RE2	1.000	.687
EN4	1.000	.676	RE3	1.000	.685
EN5	1.000	.660	RE4	1.000	.625
SF1	1.000	.705	Eco1	1.000	.744
SF2	1.000	.817	Eco2	1.000	.804
SF3	1.000	.769	Eco3	1.000	.762
EC1	1.000	.560	SS1	1.000	.642
EC2	1.000	.687	SS2	1.000	.608
EC3	1.000	.794	SS3	1.000	.752
EC4	1.000	.811	SS4	1.000	.622
ER1	1.000	.784	WA1	1.000	.585
ER2	1.000	.708	WA2	1.000	.801
ER3	1.000	.685	WA3	1.000	.822
LWS1	1.000	.642	WA4	1.000	.750
LWS2	1.000	.669			
LWS3	1.000	.643			

**Table 5.19 Communalities of the Variables**

The results show that none of the variables has a communality value below 0.5, thus showing that each factor will load significantly on any other factor, i.e., each item correlates with all other items. Also, in line with advice from Field (2013), in samples of more than 250, communalities greater than or equal to 0.5 are considered good enough to ensure accurate results from Kaiser’s criterion test for the number of retained factors.

### **Factor Extraction and Retention Results**

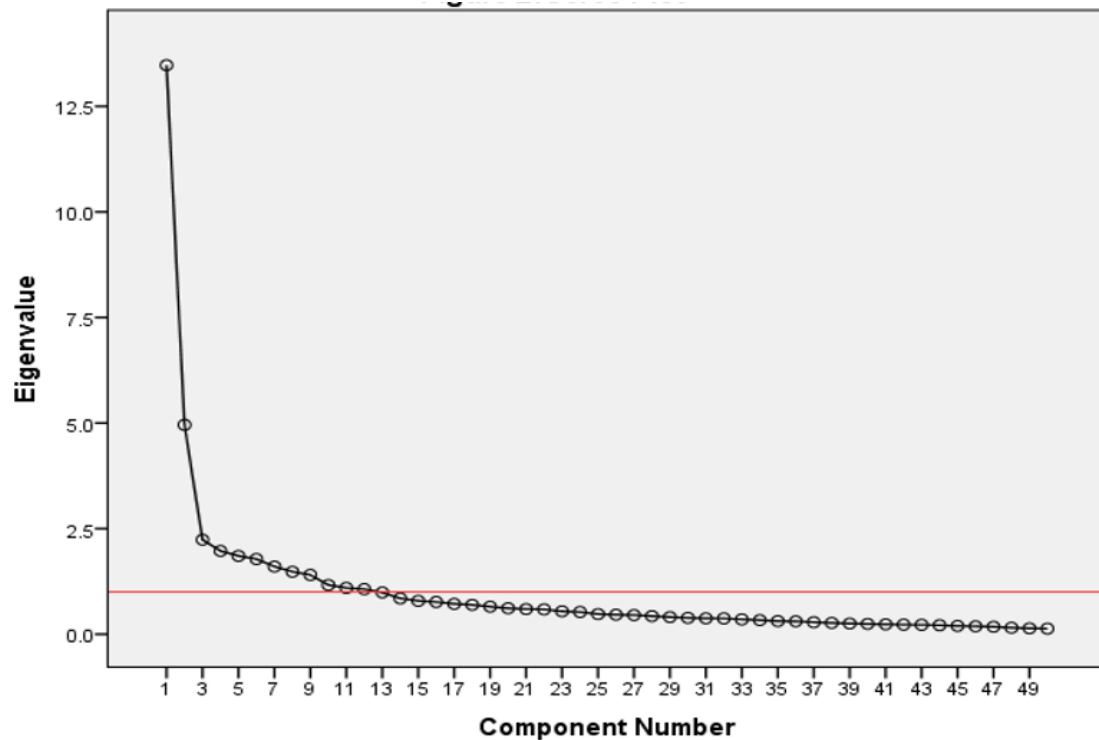
After running PCA, a 12-factor solution was achieved based on eigenvalues greater than 1. Table 5.20 on the next page shows these results together with the total explained variance. It can be seen from Table 5.20 that a 12-factor solution emerged from PCA when applying Kaiser’s Criterion of “eigenvalue-greater-than-one” rule. It is also clear that these 12 factors explained a total of 68.17% of the variance in the

dataset, with factor 1 contributing 26.94% alone and the remaining 11 factors varying in contribution, from 9.91% for factor 2 to only 2.13% for factor 12.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.474	26.948	26.948	13.474	26.948	26.948	4.468	8.936	8.936
2	4.957	9.913	36.861	4.957	9.913	36.861	3.342	6.683	15.619
3	2.238	4.475	41.336	2.238	4.475	41.336	3.033	6.065	21.684
4	1.971	3.941	45.277	1.971	3.941	45.277	2.855	5.709	27.394
5	1.854	3.708	48.985	1.854	3.708	48.985	2.806	5.613	33.007
6	1.779	3.558	52.543	1.779	3.558	52.543	2.727	5.453	38.460
7	1.602	3.205	55.748	1.602	3.205	55.748	2.652	5.304	43.764
8	1.479	2.958	58.707	1.479	2.958	58.707	2.535	5.070	48.833
9	1.405	2.809	61.516	1.405	2.809	61.516	2.534	5.068	53.901
10	1.165	2.331	63.846	1.165	2.331	63.846	2.458	4.917	58.818
11	1.096	2.192	66.039	1.096	2.192	66.039	2.363	4.726	63.543
12	1.067	2.133	68.172	1.067	2.133	68.172	2.314	4.628	68.172
13	.989	1.978	70.150						
14	.848	1.697	71.846						
15	.789	1.579	73.425						
16	.764	1.527	74.952						
17	.718	1.436	76.388						
18	.695	1.390	77.778						
19	.653	1.306	79.084						

**Table 5.20 Extracted Factors and Total Variance Explained**

Many researchers (Field, 2013; Roberson et al., 2014; Osborne, 2015; Hair et al., 2017) recommend employing more than one extraction method in order to support the results and produce a clearer picture of the maximum number of factors that should be retained. Therefore, Cattell's Scree Plot test was also drawn in order to confirm the Kaiser's Criterion test result. As shown in Figure 5.3, the Scree plot depicts that 12 factors were above the elbow of the plot line, which proves that the 12-factor solution resulting from the "eigenvalue-greater-than-one" rule was accurate.



**Figure 5.3 Scree Plot**

### Factor Rotation Results

After factor extraction, it is important to know to what extent variables load onto these factors. Although different techniques can be used to develop factors from variables, the rotation method is very much preferred by scholars (Field, 2013; Gaskin, 2016; Hair et al., 2017). This is because rotation helps researcher clarify and simplify the results of factor analysis, thus improving the interpretability by formulating a better solution with a simple structure (Kieffer, 2004; Osborne, 2015). Rotation can be either orthogonal or oblique. Orthogonal rotation produces factors that are not correlated as it assumes totally independent factors with correlation coefficients among them being zero. On the other hand, oblique rotation allows underlying factors to correlate with each other, showing non-zero correlation coefficients (Pallant, 2010; Field, 2013; Osborne, 2015). Traditionally, orthogonal rotation is preferred over oblique rotation because uncorrelated factors are more easily interpretable, and the arithmetic is simpler. However, scholars (such as Kieffer, 2004; Tabachnick and Fidell, 2007; Field, 2013; Osborne, 2015) point out that even different methods of rotation tend to give similar results when there are fairly clear patterns of correlations in the data.

Moreover, several Entrepreneurial Intentions-related studies (such as Canever et al., 2017; Shirokova et al., 2018; Liguori et al., 2017; Pauceanu et al., 2019) have also used Principal Component Analysis (PCA) as factor extraction and Varimax (orthogonal) factor rotation method for developing factors from the variables. Therefore, this study also employed both PCA and Varimax rotation in order to establish the factor loadings from the variables for further analysis.

Rotating the 12-factor solution resulting from the PCA makes the interpretation of EFA results easier. Hence, for discrimination between the extracted factors and to determine which of the 50 retained variables would load on which of those 12 factors, the Varimax rotation method was employed. The factor structure thus obtained is presented below in Table 5.21.

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
EN2	.766											
EN4	.737											
ESP3	.675											
EN5	.632											
EN3	.623											
ESP1	.620											
GP3		.731										
GP5		.713										
GP2		.711										
GP1		.706										
GP4		.687										
EE2			.758									
EE1			.738									
EE3			.687									
EE4			.641									
EE5			.613									
WA3				.855								
WA2				.838								
WA4				.778								
RE2					.756							
RE3					.718							
RE1					.661							
RE4					.647							
LWS2						.706						
LWS1						.663						
LWS3						.623						
CA3							.784					
CA4							.764					
CA2							.742					
Eco2								.850				
Eco3								.810				
Eco1								.788				
SF2									.817			
SF3									.764			
SF1									.705			
SS3										.736		
SS2										.665		
SS4										.640		
SS1										.611		
EC4											.772	
EC3											.753	
EC2											.667	
ER1												.777
ER2												.703
ER3												.671

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization. <sup>a</sup>  
 a. Rotation converged in 8 iterations.

**Table 5.21 Rotated Component Matrix**

In EFA, Factor Structure refers to the inter-correlations among the variables being tested (Gaskin, 2016). Using the above pattern matrix as an illustration, it can be seen

how variables group into factors, i.e. how they 'load' on to factors. A very clean factor structure was obtained that grouped the variables in to 12 factors. Pallant (2010) noted that item loadings should be higher for the constructs they are meant to support, as compared to other factors. The greater the loading, the more the variable is a pure measure of the factor. The above factor structure also illustrates that five items (EN1, ESP2, WA1, EC1, CA1) having factor loadings of less than the recommended threshold of 0.6 were excluded, thus reducing the number of total variables from 50 to 45.

The rotated solution revealed that each of the 45 variables loaded exclusively on only one factor and all factors were represented by high loadings, i.e. not less than 0.6. This was in conformity with the fact that variables should relate more strongly to their own factor than to another factor (Graham et al., 2003; Field, 2013). This confirmed that these 45 variables measured 12 different constructs, which are identified in the next section.

### **5.5.3 Identification of the Constructs (Factors)**

The resultant 12-factor solution was examined and compared with the hypothesised measurement items of the study. It was revealed that the two constructs of 'Entrepreneurial Support Programme' (ESP) and 'Entrepreneurial Networking' (EN) were merged together to form a new construct (Costello and Osborne, 2005; Yong and Pearce, 2013). One item from each of the factors had a factor loading of less than 0.6 and they were dropped, thus resulting in four variables of EN and two variables of ESP being loaded as a new factor, which was named 'Entrepreneurial Networking and Support' (ENS). Literature also provide support for this new construct whereby scholars (Todorovic, et al. 2011; Davey et al., 2016; Morris et al., 2017, Oftedal et al., 2018) have included the Entrepreneurial Networking (EN) as an important element of the Entrepreneurial Support Programme (ESP) available at the university. The rest of the 11 factors revealed that the variables were related more strongly to their own factors than to another factor, thus showing conformity with the hypothesised constructs of this study. These constructs are named and labelled as below:

Factor No.	Constructs	No. of Items
1	ENS (Entrepreneurial Networking and Support) <b>New Factor</b>	6
2	GP (Government Policies)	5
3	EE (Entrepreneurship Education)	5
4	WA (Workforce Availability)	3
5	RE (Regulatory Environment)	4
6	LWS (Linkages with Society)	3
7	CA (Capital Availability)	3
8	Eco (Economic Environment)	3
9	SF (Supportive Faculty)	3
10	SS (Structural Support)	4
11	EC (Entrepreneurship Club)	3
12	ER (Entrepreneurial Resources)	3
Total		45

**Table 5.22 Study Constructs**

Based on the findings of the EFA, 12 of the 13 proposed latent factors (constructs) were retained. Furthermore, the initial grouping of those retained factors was also supported by these findings, except for the first factor. Establishing validity and reliability of these study constructs is equally essential while performing EFA for the definition and construction of a scale (Coakes and Steed, 2007). Therefore, the next logical step in the factor analysis involved checking the validity and reliability of these constructs.

#### **5.5.4 Validity of the Study Constructs**

The validity of the study constructs is determined by looking at the convergent validity and discriminant validity, which are discussed below.

##### **Convergent Validity**

Convergent validity means that the variables within the single factor are highly correlated (Gaskin, 2016). It is manifested by the factor loadings in relation to the sample size of the data set. The thresholds for sufficient/significant factor loadings are outlined below.

<b>Sample Size</b>	<b>Sufficient Factor Loading</b>
50	0.75
60	0.70
70	0.65
85	0.60
100	0.55
120	0.50
150	0.45
200	0.40
250	0.35
350	0.30

**Table 5.23 Significant Factor Loadings Thresholds based on Sample Size**

Source: Gaskin (2016)

It is evident from the above table that, generally, higher loadings are required for smaller sample size. In the Factor Structure (presented in Table 5.21 on page 145), even a sample size of 80-85 at a minimum was needed to achieve significant loadings for all the variables in this study. However, scholars (such as Tabachnick and Fidell, 2007; Field, 2013; Osborne, 2015; Hair et al., 2017) recommend that, regardless of the sample size, factor loadings greater than 0.60 for each factor are significant for further analysis. In line with this advice, all factors were represented by high loadings, i.e. not less than 0.6, thus confirming convergent validity among the study constructs.

### **Discriminant Validity**

This refers to the extent to which factors are uncorrelated and distinct, i.e. the variables should relate more strongly to their own factors than to another factor (Gaskin, 2016). The primary method used to determine discriminant validity during an EFA is to look at the factor structure (pattern matrix) and confirm that all variables are loading significantly on only one factor, i.e. there should be no cross-loadings whereby variables load on multiple factors. Some scholars (such as Field, 2013; Osborne, 2015) have a moderate approach and allow for cross-loadings which differ by more than 0.2 (i.e. a primary loading should be at least 0.2 larger than a secondary loading).

The factor structure obtained for this study (illustrated above in Table 5.21 on page 145) demonstrated sufficient discriminant validity (distinct constructs) as no cross-loadings were identified, confirming that variables relate more strongly to their own factor than to another factor (Graham et al., 2003; Field, 2013; Pearl et al., 2017).

### 5.5.5 Reliability Test of the Modified Constructs

Reliability in an EFA refers to the consistency of the item-level errors within a single factor, i.e. it depicts how consistently the set of variables load on the same factor (Gaskin, 2016). To test reliability, Cronbach's Alpha Coefficients for each factor are computed and instruments with coefficients less than 0.70 are viewed to have a poor reliability (Nunnally and Bernstein 1994; Tavakol and Dennick 2011; Saunders et al., 2015b). The Cronbach's Alpha coefficients computed for this study construct are presented in the table below

No.	Constructs	No. of Items	Cronbach's Alpha	Comments
1	Entrepreneurship Networking and Support (ENS)	6	0.859	Accepted
2	Government Policies (GP)	5	0.854	Accepted
3	Entrepreneurship Education (EE)	5	0.793	Accepted
4	Workforce Availability (WA)	3	0.868	Accepted
5	Regulatory Environment (RE)	4	0.819	Accepted
6	Linkages with Society (LWS)	3	0.809	Accepted
7	Capital Availability (CA)	3	0.814	Accepted
8	Economic Environment (Eco)	3	0.846	Accepted
9	Supportive Faculty (SF)	3	0.859	Accepted
10	Structural Support (SS)	4	0.783	Accepted
11	Entrepreneurship Club (EC)	3	0.846	Accepted
12	Entrepreneurial Resources (ER)	3	0.817	Accepted

**Table 5.24 Reliability Test Results for the Study Constructs**

The above table revealed that all the reliability coefficients ranged from 0.783 to 0.868, i.e. above the recommended threshold (0.70), thus confirming the non-existence of any internal consistency problem up to this stage of data analysis. After establishing the validity and the reliability of the study constructs, the next logical step is to test the hypothesised underlying structure of the study constructs by performing Confirmatory Factor Analysis.

## **5.6 Confirmatory Factor Analysis (CFA)**

CFA is used to validate the hypothesised theoretical constructs/factors and the underlying structure (Kline, 2016). It is a statistical technique which is used to test the structure of the data as it allows the researchers to test the extent to which their hypothesised factor model fits the data (Liguori et al., 2019). Luhana (2016), while highlighting the differences between exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), argued that the former extracts factors which are based on statistical results instead of theory while the later evaluates a priori hypotheses and is largely driven by the theory. In other words, in EFA, the researcher is not required to have any specific hypotheses about how many factors will emerge, and what items or variables these factors will comprise. On the other hand, in CFA, the researcher is required to hypothesise the number of factors, whether they are correlated or not, and which items/measures load onto and reflect which factors (Luhana, 2016). Thus, statistical hypothesis testing on the proposed model is carried out by CFA while factorial patterns in the data are identified by EFA.

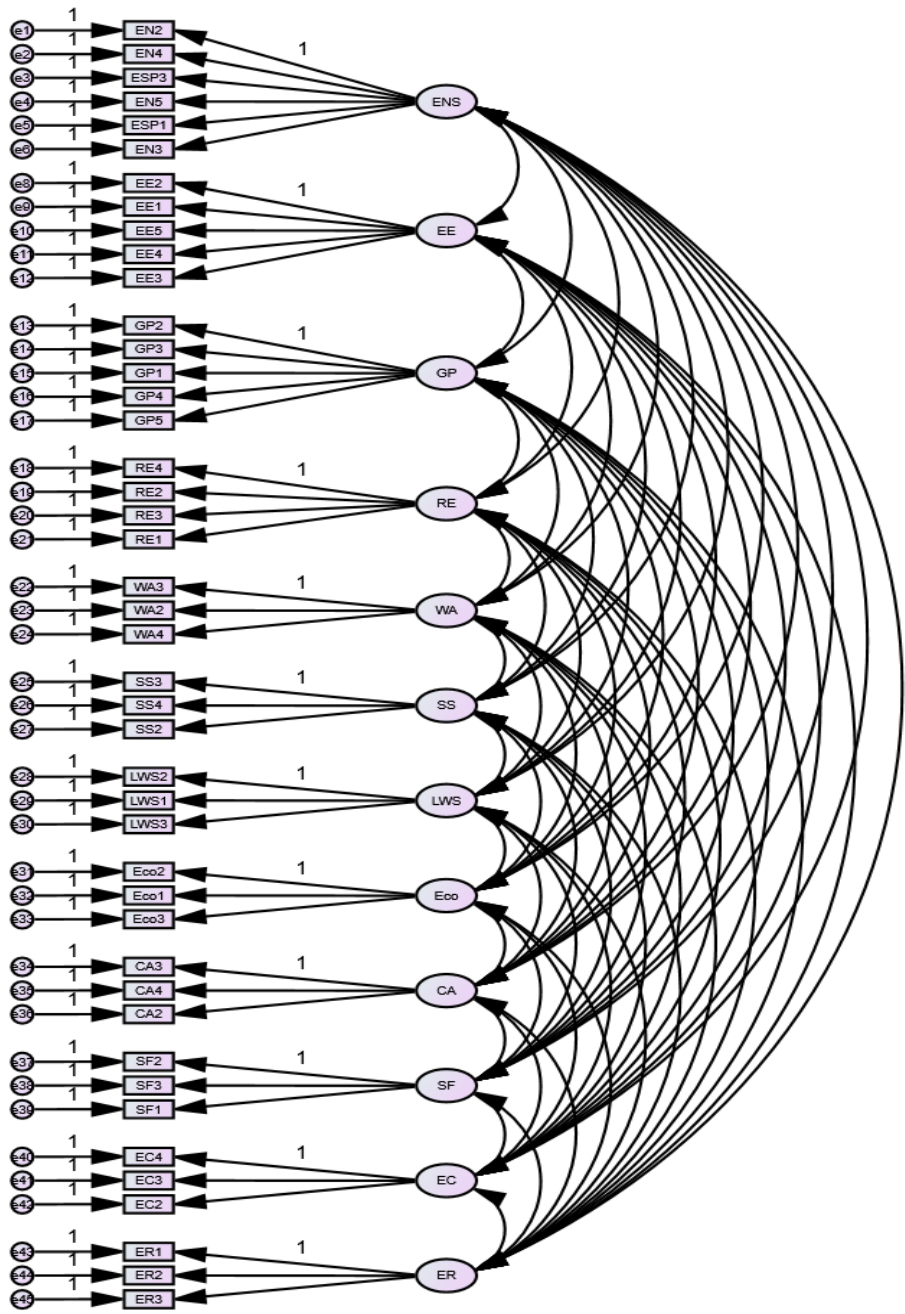
As CFA allows the researcher to test the extent to which his/her hypothesised factor model fits the data, therefore it was selected as the ideal method to test the structure of our data. Particularly, CFA tests how well the hypothesised model of factors can produce the observed covariance between a set of items (Liguori et al., 2019). Hence, in this research study, CFA was selected to test how well the proposed structure of the SEIs and the university environmental factors fits the actual data.

Moreover, several Entrepreneurial Intentions-related studies have also employed CFA for testing the hypothesised factor model and the underlying structure of the main constructs in the study (such as Sesen 2013; Shirokova et al., 2017; Bazan et al., 2019; Kallas, 2019). Therefore, this study employed CFA to test the extent to which the hypothesised model fits the actual data.

### **5.6.1 CFA (First Run)**

After confirming the hypothesised latent variables by the PCA Varimax rotated 12-factor solution, CFA was employed to validate the underlying structure of the main study constructs, assess their factorial validity and examine the reliability of the

measurement scales. Based on the EFA findings, the measurement model was created by using AMOS 25 software (Field, 2013; Gaskin, 2016). The model is shown in the figure below.



**Figure 5.4 CFA First Run (The Original Measurement Model)**

Where **ENS**: Entrepreneurial Networking and Support, **GP**: Government Policies, **EE**: Entrepreneurship Education, **WA**: Workforce Availability, **RE**: Regulatory Environment, **LWS**: Linkages with Society, **CA**: Capital Availability, **Eco**: Economic Environment, **SF**: Supportive Faculty, **SS**: Structural Support, **EC**: Entrepreneurship Club, **ER**: Entrepreneurship Resources

In the figure above, the ovals represent the latent variables while the rectangles represent the observed variables. Covariance between the constructs is indicated by two-headed connections, while a causal path from a construct to an indicator is shown by the one-headed connectors. The diagram also represents how each question is influenced by the errors, while latent variables are not influenced. Numerical estimates for each of the parameters which indicate the strength of the relationships are provided by SEM (discussed in section 5.7). In this way, SEM gives an indication to the researcher about which latent variables are strongly represented by the observed variables.

To find out the extent to which the measurement model fits the empirical data, a model goodness-of-fit indices need to be calculated.

### **5.6.2 Model Goodness of Fit Indices (CFA First Run)**

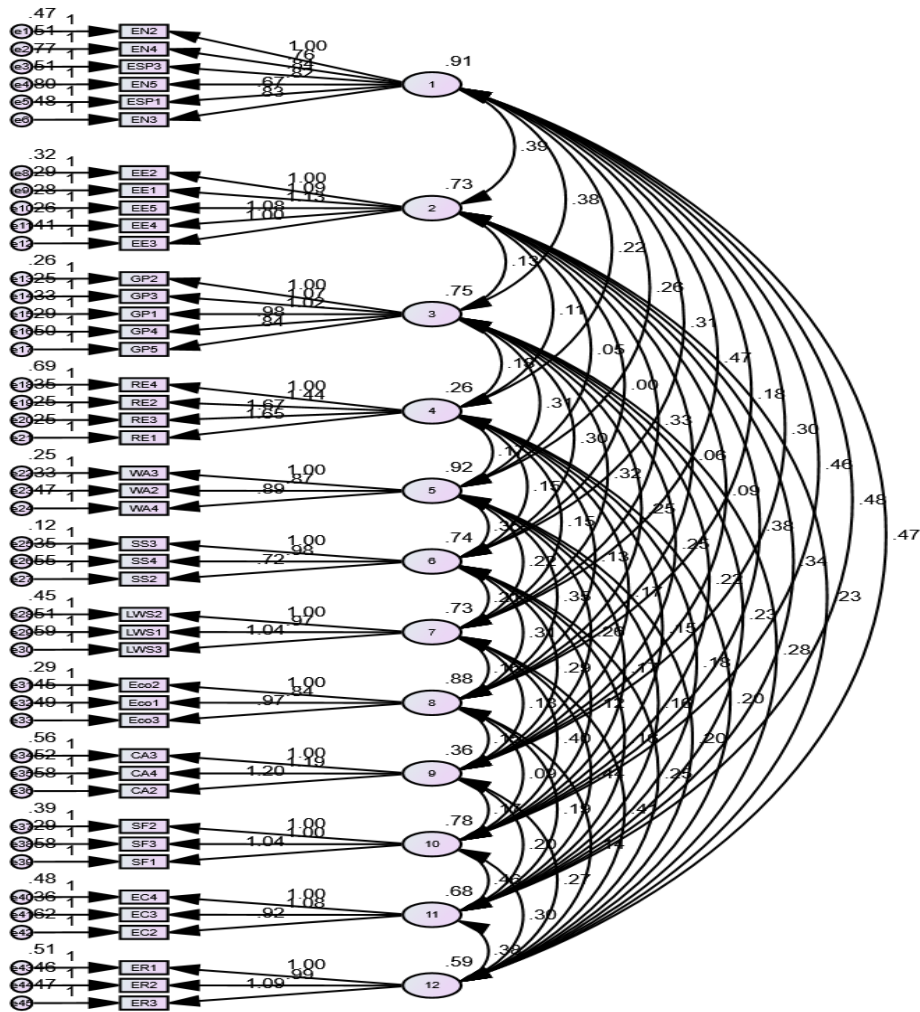
Model goodness of fit (GOF) determines the extent to which the model fits the sample data (Schermelel-Engel et al., 2003). In other words, GOF explains that how well the proposed model accounts for the correlations between variables in the sample data (Gaskin, 2016). A model Goodness of Fit can be determined by calculating some measures such as Chi-square, Comparative Fit Index (Field, 2013, Gaskin, 2016). Although the literature lacks clear guidelines regarding which specific measures/indicators should be used for assessing GOF, scholars (such as Schermelleh-Engel et al., 2003; Gaskin, 2016; Hair et al., 2017) suggest adopting a multiple criteria approach instead of relying on a single measure. The most widely used indicator for measuring the GOF appropriateness is the Chi-square test ( $\chi^2/df$ ) compared with the number of degrees of freedom associated with it (Byrne, 2013; Hair et al., 2017; Gieure et al., 2019). A  $\chi^2/df$  ratio of less than 5 is acceptable, while a ratio less than 3 signifies good model fit (Hu and Bentler, 1999). As GOF is inversely related to the number of variables and the sample size of the model, therefore scholars (such as Hu and Bentler, 1999; Byrne, 2013; Gaskin, 2016; Hair et al., 2017) recommend also using other popular model fit indices which include the *Goodness of Fit Index* (GFI), the *Adjusted Goodness of Fit Index* (AGFI), the *Comparative Fit Index* (CFI), the *Root Mean Square Residual* (RMSR), the *Normed Fit Index* (NFI), the *Tucker-Lewis Index* (TLI), and the *Root Mean Square Error of Approximation* (RMSEA) among several others.

In the absence of clearly agreed guidelines for considering an adequate goodness-of-fit criteria, it becomes difficult to identify the acceptable values of the various model indices. Therefore, researchers often use the following ‘rule-of-thumb’ to identify the thresholds for assessing goodness of fit (see table 5.25).

Goodness of Fit (GOF) Measures	Threshold	References
$\chi^2/df$	$\leq 3$	Hair et al. (2018); Xi and Yang (2019)
GFI	$> 0.8$	Byrne (2013); Hair et al. (2017)
AGFI	$> 0.8$	Hu and Bentler (1999)
CFI	$> 0.95$	Hu and Bentler (1999); Xi and Yang (2019)
RMR	$< 0.05$	Byrne (2013); Hair et al. (2017)
NFI	$> 0.9$	Byrne (2013); Hair et al. (2017)
TLI	$> 0.9$	Hair et al. (2017); Xi and Yang (2019)
RMSEA	$< 0.10$	Hu and Bentler (1999); Byrne (2013); Xi and Yang, (2019)

**Table 5.25 ‘Rule-of-Thumb’ for Measurement and Structural Models’ Fit Indices**

After identifying the different goodness-of-fit criteria, in order to test the measurement model, CFA through AMOS 25 was conducted using the Maximum Likelihood (ML) method. ML is the commonly used method for estimating parameters (Schermelleh-Engel et al., 2003). Figure 5.5 below shows the output diagram of the CFA first run.



**Figure 5.5 CFA (First Run) Output Path Diagram**

Where 1: Entrepreneurial Networking and Support, 2: Government Policies, 3: Entrepreneurship Education, 4: Workforce Availability, 5: Regulatory Environment, 6: Linkages with Society, 7: Capital Availability, 8: Economic Environment, 9: Supportive Faculty, 10: Structural Support, 11: Entrepreneurship Club, 12: Entrepreneurship Resources

The overall goodness-of-fit measures obtained from the CFA first run are presented in the following table.

Goodness of Fit (GoF) Measures	Conceptual Model (First Run)	Criterion	Acceptable/Unsatisfactory	References
X <sup>2</sup> /df	2.130	≤ 3	Acceptable	Field (2013) Gaskin (2016) Hair et al. (2017), Gieure et al. (2019)
GFI	.832	> 0.8	Acceptable	
AGFI	.799	> 0.8	Unacceptable	
CFI	.906	> 0.95	Unacceptable	
RMR	.06	< 0.05	Unacceptable	
NFI	.838	> 0.9	Unacceptable	
TLI	.892	> 0.9	Unacceptable	
RMSEA	.054	< 0.10	Acceptable	

**Table 5.26 Model Fitness Indices**

Where **GFI**: Goodness-of-Fit Index, **AGFI**: Adjusted Goodness-of-Fit Index, **CFI**: Comparative Fit Index, **RMR**: Root Mean Square Residual, **NFI**: Normed Fit Index, **TLI**: Tucker-Lewis Index, **RMSEA**: Root Mean Square Error of Approximation.

It can be seen from the table that most of the fit indices indicated an unsatisfactory level of model adequacy i.e. below/above the threshold. For example, CFI (0.906) was well below the acceptable value (0.95) and the RMR (0.06) was well above the acceptable value of 0.05. These unacceptable values of model indices suggested that for achieving a good model fit, further model adjustment can be made.

### **5.6.3 Measurement Model Modifications after First Run**

After an initial assessment, model fit can be improved by making typical minor adjustments, provided there is an acceptable justification for making such changes. A good model fit may not be achieved because the sample data may not perform as expected (Gaskin, 2016). Also, the placement or wording of the questions or the setting of the study may reasonably result in the respondents answering the items in a certain way. A similar meaning or phrases and words with close meanings in the statements can result in measurement errors (Harrington, 2008). Mostly, these measurement errors might be correlated if the measures/statements are self-reported and are part of the same factors. Certain parameter indicators such as Modification Indices (MI) and Standard Residuals (SR) Matrix are used to determine which parts of the model may be causing the misfit (Hoyle, 1995). (Appendix E on page 333 presents the modification indices calculated after the first CFA run.)

Before getting to the extreme step of deleting any problematic items, scholars (such as Byrne, 2013; Gaskin, 2016; Hair et al., 2017) suggest determining the error terms that are part of the same factor and correlating them. This modification should bring in a statistically significant improvement in the model fit.

By examining the modification indices (MI), it was found that the model fit could be improved by allowing covariance of certain error terms. Thus, based on the MI, the researcher did covariance of eight error terms [(e2 with e4), (e3 with e5), (e9 with e12) and (e13 with e17)] (see Figure 5.6). As a result, the chi-square value of the modified model was reduced from 2.130 to 2.014, representing a significant improvement to the model fit. For example, the two measurement values EN4 (*My university has networking events that help in accessing key suppliers/distributors*) and EN5 (*My university has networking events that help in accessing available resources*) ask the same question related to the networking events available at the universities. It can be

argued that university students would most likely have classed suppliers/distributors as resources. The same argument can be made for EE1 (*My university has elective courses on entrepreneurship*) and EE3 (*My university has a Bachelor's or Master's study in entrepreneurship*). Again, in this case, the university students may have perceived the statements to contain similar information and may have subsequently responded in a particular way. After making these modifications, the next step was to run CFA for the second time and check if these modifications had made any improvements to the model fit.

### 5.6.4 CFA (Second Run)

After running CFA one more time, an output path diagram was obtained, as presented below in Figure 5.6.

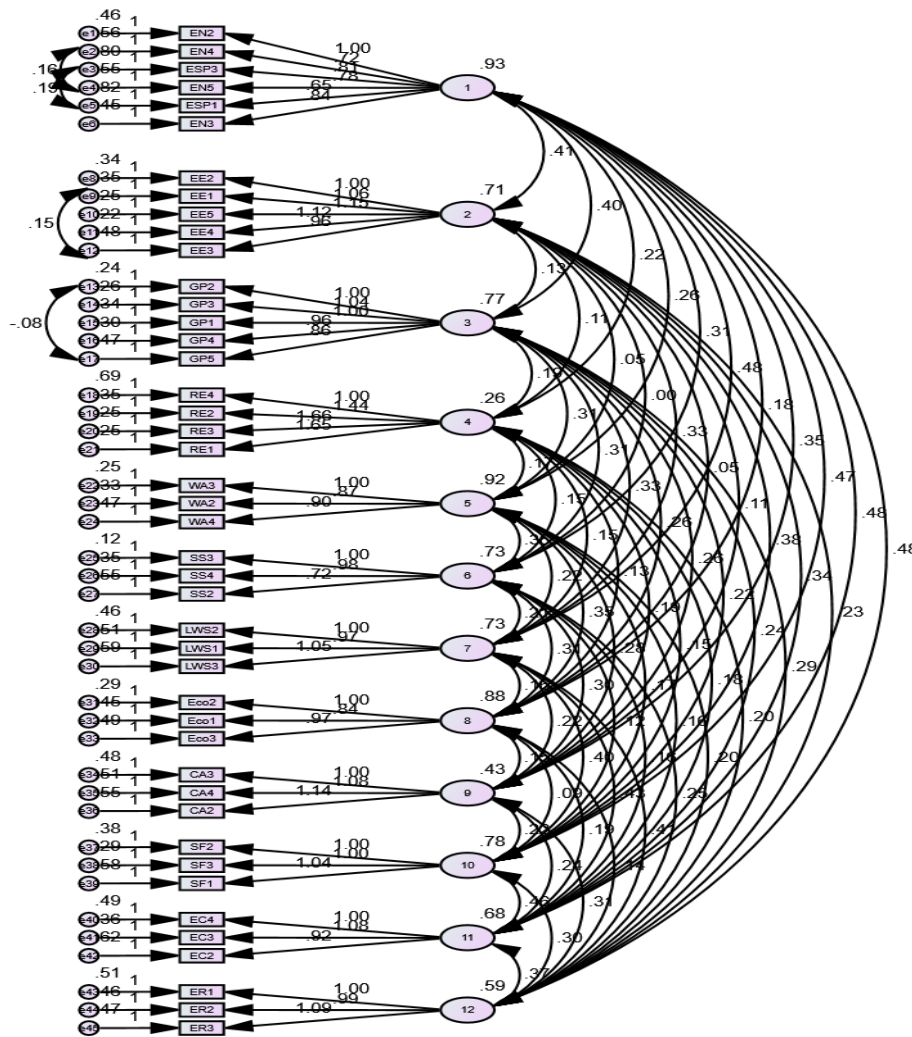


Figure 5.6 CFA (Second Run) Output Path Diagram

### 5.6.5 Model Goodness of Fit Indices (CFA Second Run)

The key goodness-of-fit measures obtained from the CFA second run are presented in the following table. However, full GOF output is presented in the Appendix F, on page 335).

Goodness of Fit (GOF) Measures	Conceptual Model (2nd Run)	Criterion	Acceptable/Unsatisfactory	References
X <sup>2</sup> /Degree of freedom	2.014	≤3	Acceptable	Field (2013), Gaskin (2016), Hair et al. (2017), Gieure et al. (2019)
GFI	.841	> 0.8	Acceptable	
AGFI	.810	> 0.8	Acceptable	
CFI	.917	> 0.9	Acceptable	
RMR	.060	< 0.05	Unsatisfactory	
NFI	.849	> 0.9	Unsatisfactory	
TLI	.905	> 0.9	Acceptable	
RMSEA	.051	< 0.10	Acceptable	

**Table 5.27 Model Goodness-of-Fit Indices**

It can be seen from Table 5.27 that, although making small modifications by co-varying the error terms between four pairs of items has improved the overall goodness-of-fit of the model; however, there were still certain unacceptable values of the Model Indices, which suggested that there was room for further model adjustments to achieve good model fit.

### 5.6.6 Measurement Model Modifications after Second CFA Run

The Modification Indices (MI) calculated after the running the CFA for second time were carefully reviewed and, in line with the advice from Byrne (2013), Gaskin (2016) and Hair et al. (2018), the items that demonstrated high covariance along with high regression weight in the modification indices were pointed out as candidates for deletion. This led to the deletion of the following eight items: CA4, LWS2, Eco1, ER2, RE1, GP5, EN5, EC2.

Further covariance of certain items such as GP2 with GP1, EE1 with EE3, EE5 with EE4, etc., was also carried out to improve the model fit.

After making these modifications, the next step was to run CFA for the third time and check if these modifications had made any improvements to the model fit.

### 5.6.7 CFA (Third Run)

The key goodness-of-fit measures obtained from the CFA third run are presented in the following table.

Goodness of Fit (GOF) Measures	Conceptual Model (3rd Run)	Criterion	Acceptable/Unsatisfactory	References
X <sup>2</sup> /Degree of freedom	1.693	≤3	Acceptable	Field (2013), Gaskin (2016), Hair et al. (2017), Gieure et al. (2019)
GFI	.892	> 0.8	Acceptable	
AGFI	.861	> 0.8	Acceptable	
CFI	.954	> 0.9	Acceptable	
RMR	.047	< 0.05	Acceptable	
NFI	.929	> 0.9	Acceptable	
TLI	.915	> 0.9	Acceptable	
RMSEA	.045	< 0.10	Acceptable	

**Table 5.28 Model Goodness-of-Fit Indices**

In this study, the model fit indices indicate a reasonably good fit model. Kline (2016) recommended reporting the chi-squared test, the CFI, the RMR and RMSEA in regard to the model fitness. Therefore, in line with his advice, the comparative-fit-index (CFI) had a value of 0.954, a value of 0.9 or greater being indicative of an acceptable model; the goodness-of-fit (GFI) score was 0.892, with a value in excess of 0.800 showing acceptable model fit; also the root-mean-square-residual (RMR) was 0.047, with a value of 0.05 or less indicating an acceptable value for good model fit.

It can be seen from the above table that an introduction of the above modifications such as covariance of items and deletion of high covariance items, brought the overall goodness-of-fit of the model to an acceptable level.

## 5.7 The Measurement Model Evaluation: Construct Reliability and Validity

Once the goodness-of-fit for the measurement model was established, the next step was to assess the reliability and validity of the model constructs. The construct reliability and validity are discussed here in detail.

### 5.7.1 Construct Reliability

For a measurement model, the reliability of a construct is assessed by computing the Composite Reliability (CR), which is considered to provide a better reliability estimation

as compared to the Cronbach's Alpha Coefficient (Peterson and Kim, 2013). The composite reliability indicates the reliability and internal consistency of a latent construct. For a construct to achieve composite reliability, the CR value should be greater than or equal to 0.7 (CR>0.7) (Gaskin, 2016).

Construct	Composite Reliability	Comments
EC	0.781	Accepted (> 0.7)
ENS	0.826	Accepted (> 0.7)
EE	0.923	Accepted (> 0.7)
GP	0.911	Accepted (> 0.7)
RE	0.936	Accepted (> 0.7)
WA	0.871	Accepted (> 0.7)
SS	0.842	Accepted (> 0.7)
LWS	0.709	Accepted (> 0.7)
Eco	0.819	Accepted (> 0.7)
CA	0.797	Accepted (> 0.7)
SF	0.855	Accepted (> 0.7)
ER	0.709	Accepted (> 0.7)

**Table 5.29 Composite Reliability Results**

The above table presents the results of CR for all the constructs obtained from CFA, which indicates that all constructs showed high CR coefficients with all values greater than the cut-off point of 0.7, thus demonstrating adequate internal consistency. High coefficient values ranging from 0.709 for the ER construct to 0.923 for the EE construct were acknowledged by the reliability estimations. After establishing the constructs' reliability, the next step was to determine their validity.

### **5.7.2 Construct Validity**

Construct Validity is the ability of an instrument to measure what it is supposed to measure for a latent construct. Two types of validity are required for each measurement model, which are Convergent Validity and Discriminant Validity (Byrne, 2013; Gaskin, 2016; Hair et al., 2017). Each of these is discussed in detailed below.

#### **Convergent Validity**

Convergent validity tests whether constructs that should be related, are related. It refers to the extent to which the observed variables comprising a particular scale

correlate with one another. Hair et al. (2017) argued that, in order to establish convergent validity, the inter-correlations for all items comprising a given construct should be high enough to indicate that these items are really related to the same construct.

Convergent validity can be verified by computing the Average Variance Extracted (AVE) for every construct. AVE indicates the average percentage of variation explained by the measuring items for a latent construct (Fornell and Larcker, 1981). To achieve convergent validity, the value of AVE should be 0.5 or higher ( $AVE \geq 0.5$ ) (Field, 2013; Hair et al., 2017). Table 5.30 below presents the results of AVE for the final constructs obtained from CFA.

Construct	AVE	Comments
EC	0.800	Accepted (> 0.5)
ENS	0.705	Accepted (> 0.5)
EE	0.840	Accepted (> 0.5)
GP	0.848	Accepted (> 0.5)
RE	0.912	Accepted (> 0.5)
WA	0.833	Accepted (> 0.5)
SS	0.803	Accepted (> 0.5)
LWS	0.741	Accepted (> 0.5)
Eco	0.834	Accepted (> 0.5)
CA	0.814	Accepted (> 0.5)
SF	0.814	Accepted (> 0.5)
ER	0.741	Accepted (> 0.5)

**Table 5.30 AVE Convergent Validity Results**

The results indicate that all constructs showed high AVE values that were all above the cut-off point of 0.5, thus indicating adequate convergent validity. To further confirm the construct validity, Hair et al. (2017) also suggest a discriminant validity test, which is discussed below.

### **Discriminant Validity**

Discriminant validity is the extent to which the measured items (observed variables) supposed to measure a certain construct (latent variable) are distinct from other

measures that are designed to measure another construct (Field, 2013). It tests whether constructs that are believed to be unrelated are, in fact, unrelated, i.e. it tests whether concepts or measurements that are not supposed to be related are actually unrelated (Gaskin, 2016). It is the extent to which a construct is truly distinct from other constructs, i.e., the two sets of measure items intended to measure two distinct constructs should be uncorrelated (Hair et al., 2017).

Discriminant validity is also measured by using average variance extracted (AVE). The criterion used in this regard is the Fornell and Larcker criterion, according to which, the AVE of each construct is compared with squared inter-construct correlations for that construct. If the inter-construct correlations do not exceed 0.85 and the AVE results are higher than the squared inter-construct correlations for the same construct, then the construct is said to demonstrate discriminant validity (Fornell and Larcker, 1981).

Moreover, several Entrepreneurial Intentions-related studies have also used this criterion (such as Dakoumi and Abdelwahed, 2014; Barral et al., 2018; Zareen et al., 2019). Therefore, this study employed it to measure the discriminant validity. The following table presents the discriminant validity results for the constructs of the present study.

	EC	ENS	EE	GP	RE	WA	SS	LWS	Eco	CA	SF	ER
EC	<b>0.800</b>											
ENS	0.587	<b>0.705</b>										
EE	0.482	0.524	<b>0.840</b>									
GP	0.291	0.439	0.187	<b>0.848</b>								
RE	0.381	0.446	0.235	0.307	<b>0.912</b>							
WA	0.230	0.221	0.047	0.369	0.262	<b>0.833</b>						
SS	0.218	0.334	0.001	0.401	0.291	0.439	<b>0.803</b>					
LWS	0.609	0.671	0.479	0.438	0.361	0.292	0.300	<b>0.741</b>				
Eco	0.274	0.121	0.047	0.284	0.220	0.400	0.410	0.190	<b>0.834</b>			
CA	0.432	0.495	0.241	0.368	0.390	0.354	0.457	0.460	0.242	<b>0.814</b>		
SF	0.643	0.574	0.506	0.290	0.348	0.198	0.166	0.553	0.077	0.418	<b>0.814</b>	
ER	0.623	0.669	0.371	0.404	0.466	0.267	0.443	0.675	0.181	0.584	0.421	<b>0.741</b>

**Table 5.31 Discriminant Validity Results**

In the above table, the diagonal elements (presented in bold) represent the AVE values for each construct while the below-diagonal elements are inter-construct

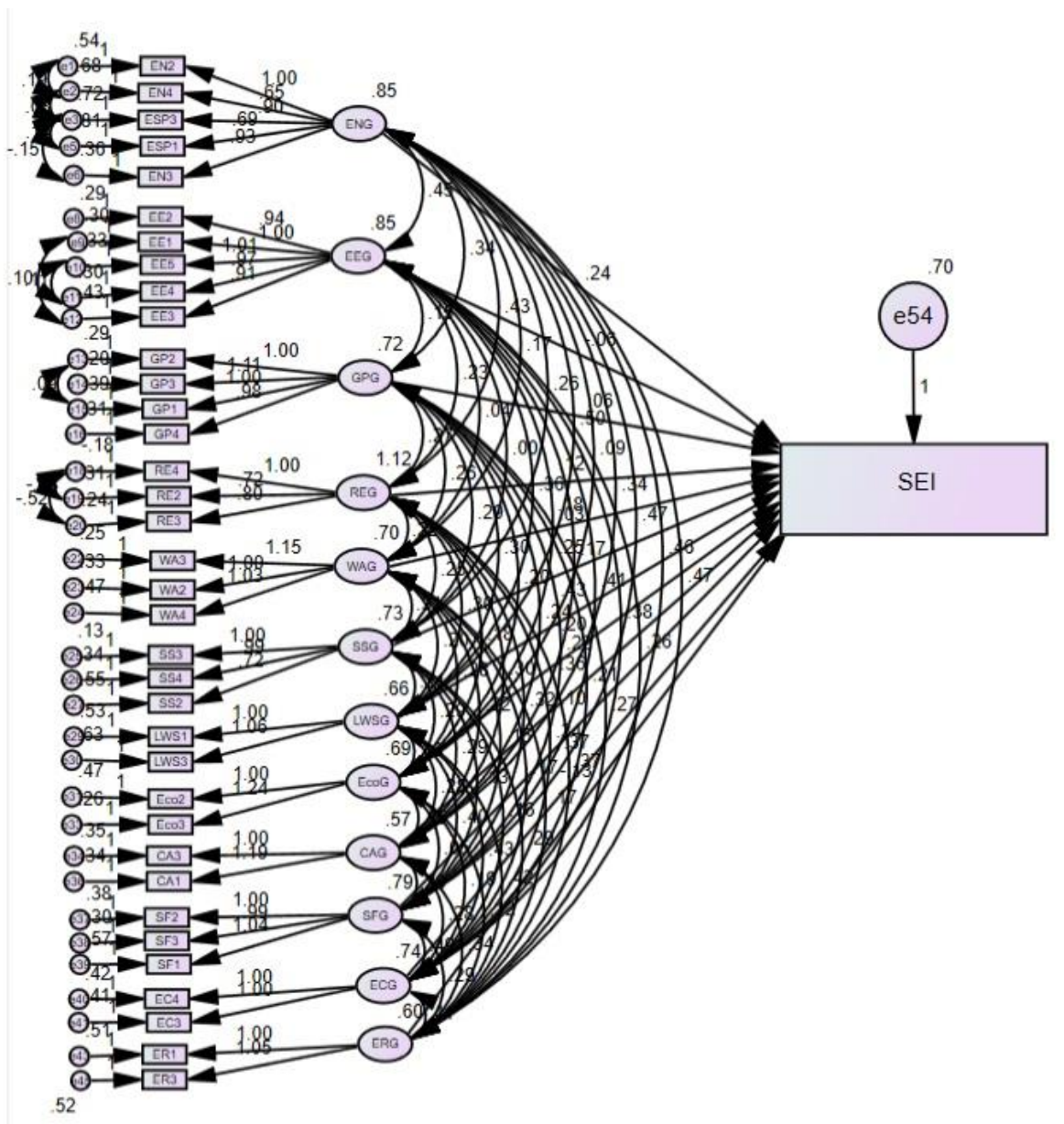
correlations. It is obvious that the inter-construct correlation coefficients were all below the cut-off point of 0.85. Also, the AVE results were higher than the corresponding squared correlations estimates of the same construct. Hence, the CFA results provide evidence of discriminant validity for all study constructs.

The next logical step was then to assess the causal relationships among these constructs as proposed in the research model.

### **5.8 Structural Equation Model (SEM)**

SEM is multivariate statistical framework that is used to model complex relationships between directly and indirectly observed (latent) variables (Kline 2016; Stein et al., 2012; Byrne 2013). Similarly, Hoyle (2011) explained SEM as a comprehensive statistical approach used to test hypotheses about relations among observed and latent variables. In social sciences, SEM has been increasingly used to understand the patterns of correlation/covariance among a set of variables and to explain as much of their variance as possible with the model specified (Kline, 2016; Byrne 2013).

After measuring the model goodness-of-fit and confirming the validity of all relevant constructs (see sections 5.6 and 5.7), the analysis was focused on assessing the causal relationship among these constructs. Thus, in order to investigate how the model may be used to predict students' entrepreneurial intention, a structural model was constructed to show the relationship with the latent variables. The following figure shows the structural model used to test the hypothesised relationship.



**Figure 5.7 SEM Model to Forecast DV (SEI)**

The above structural model consists of one endogenous variable (SEI) and 12 exogenous variables (ENS, EE, GP, RE, WA, SS, LWS, Eco, CA, SF, ECG and ER). The goodness-of-fit between the structural model output and the empirical data also had to be assessed.

### 5.8.1 Model Goodness of Fit Indices (SEM)

The goodness of fit between the structural model output and the empirical data was assessed by measuring the SEM Goodness-of-fit indices. The results indicated that

the structural model had a good overall fit with the data, as displayed in the below table.

Goodness of Fit (GOF) Measures	Conceptual Model (Third Run)	Criterion	Acceptable/Unsatisfactory	References
X <sup>2</sup> /Degree of freedom	1.673	≤3	Acceptable	Field (2013) Gaskin (2016), Hair et al. (2017), Gieure et al. (2019)
GFI	.891	> 0.8	Acceptable	
AGFI	.859	> 0.8	Acceptable	
CFI	.955	> 0.9	Acceptable	
RMR	.048	< 0.05	Acceptable	
NFI	.927	> 0.9	Acceptable	
TLI	.955	> 0.9	Acceptable	
RMSEA	.042	< 0.10	Acceptable	

**Table 5.32 Model Goodness of Fit Indices**

As indicated above, an overall good model fit was observed whereby the Comparative Fit Index (CFI) had a value of 0.955, a value of 0.9 or greater being indicative of an acceptable model; the Goodness of Fit Index (GFI) score was 0.891, with a value in excess of 0.800 showing acceptable model fit; also, the Root Mean Square Residual (RMR) was 0.048, with a value of 0.05 or less indicating an acceptable value for good model fit. After establishing the structural models' goodness-of-fit to the data, the next logical step was testing the research hypotheses.

### 5.9 Testing Research Hypotheses

After having an acceptable model fit, model parameters were calculated in order to examine the research hypotheses. These model parameters include path coefficients, critical ratios (C.R) and standardised estimates. Path coefficients represent the direction and magnitude of the hypothesised relationship between variables in the model, while critical ratios are used to determine the statistical significance of these estimates. The statistical criterion used in this regard is based on Hair et al. (2018), whereby the model is considered significant with p-values of less than 0.001 ( $p < 0.001$ ) and  $C.R > + 1.96$ .

The path coefficients thus obtained are presented in the following table.

Hypotheses		Estimate	C.R	p-value	Comment
Code	Path				
H1a	EE -----> SEI	-.064	-.889	.374	Rejected
H1b	ENS -----> SEI	.241	2.272	.023	Accepted
H1c	SF -----> SEI	-.103	-1.020	.308	Rejected
H1d	EC -----> SEI	.374	2.941	.003	Accepted
H1e	ER -----> SEI	-.128	-.753	.452	Rejected
H1f	LWS -----> SEI	.427	3.008	.003	Accepted
H2a	CA -----> SEI	.362	3.465	***	Accepted
H2b	GP -----> SEI	.059	.802	.422	Rejected
H2c	RE -----> SEI	.119	2.507	.012	Accepted
H2d	Eco -----> SEI	.203	2.528	.011	Accepted
H2e	SS -----> SEI	.248	2.920	.003	Accepted
H2f	WA -----> SEI	.182	2.437	.015	Accepted

**Table 5.33 Path-Coefficient Weights for the Structural Model (\*\*\*)  $p < 0.001$ ,  $C.R > \pm 1.96$ )**  
Source: Hair et al., (2018)

Table 5.33 summarises the hypothesised causal paths in the structural model, from which it is obvious that eight out of the 12 hypotheses were significant at the  $p < 0.05$  level and were thus accepted.

The results of the hypotheses testing are presented in detail as follows.

### Hypothesis H1a

This hypothesis tested the impact of EE on Students' Entrepreneurial Intentions (SEIs). The causal path between the two constructs showed an insignificant impact ( $p = 0.374 > 0.05$ ). These results did not provide support for the hypothesis, thus the hypothesis H1a was rejected. This implied that EE does not positively influence SEI.

### Hypothesis H1b

This hypothesis tested the impact of ENS on Students' Entrepreneurial Intentions (SEIs). The causal path between the two constructs revealed a significant positive influence at a level of  $p < 0.05$ . Thus, provided support to the hypothesis and the hypothesis H1b was accepted (ENS positively influences SEI).

### Hypothesis H1c

The path statistics in Table 5.33 (path coefficient = -0.103, critical ratio = -1.020 and p-value = 0.308) did not show support for the hypothesis and the hypothesis H1c is thus

rejected. In other words, SEM results demonstrated an insignificant positive influence of Supportive Faculty (SF) on SEIs.

### **Hypothesis H1d**

This hypothesis tested the influence of EC on SEIs. The causal path between the two variables disclosed a significant positive influence at a level of  $p < 0.005$  ( $p = 0.003$ ). Thus, providing support to the hypothesis and accepting hypothesis H1d. It indicated that EC positively influences SEIs.

### **Hypothesis H1e**

This hypothesis tested the causal relationship between ER and SEIs. The hypothesis testing results revealed a non-significant impact where path coefficient was  $-0.128$  and critical ratio =  $-0.753$  with  $p = 0.452$ . Accordingly, this result did not show any support for the hypothesis, indicating that ER does not positively influence SEIs. Therefore, the hypothesis H1e was rejected.

### **Hypothesis H1f**

As presented in Table 5.19, the path coefficient and critical ratio for the LWS to SEIs were  $0.427$  and  $3.008$  respectively, indicating support for the hypothesis with significance level of  $p < 0.005$ . These results indicated that hypothesis H1f was accepted which depicted a positive influence of LWS on SEIs.

### **Hypothesis H2a**

The results of path coefficient and critical ratio estimates of CA to SEIs were  $0.362$  and  $3.465$  respectively and were significant at  $p < 0.001$ . These results offered support for the hypothesis and therefore hypothesis H2a was accepted. This suggested a positive influence of CA on SEIs.

### **Hypothesis H2b**

As presented in Table 5.19, the path coefficient for this causal path was  $0.059$  and its critical ratio value was low, at  $0.802$ ; moreover, the  $p$ -value was  $0.422$ . As is clear, these findings suggested a non-significant effect of GP factor on the SEIs. Therefore,

since the results revealed no support for the hypothesis, thus hypothesis H2b was rejected (GP does not influence SEIs).

### **Hypothesis H2c**

This hypothesis tested the impact of RE on SEIs. The causal path between the two constructs revealed a significant positive influence at a level of  $p < 0.05$ . Therefore, the hypothesis H2c was accepted, which inferred that RE positively influences SEIs.

### **Hypothesis H2d**

The path coefficient and critical ratio estimates for Eco and SEIs causal link were 0.203 and 2.528 respectively, indicating significant influence at  $p < 0.05$ . These results indicated support for the hypothesis and therefore hypothesis H2d was accepted, which suggested a positive influence of Economic Environment on SEIs.

### **Hypothesis H2e**

The path coefficient weight and critical ratio estimate for SS to SEIs were 0.248 and 2.920, indicating full support for the hypothesis with significance level of  $p < 0.005$ . These results suggested accepting the hypothesis H2e, thus endorsing the positive influence of SS on SEIs.

### **Hypothesis H2f**

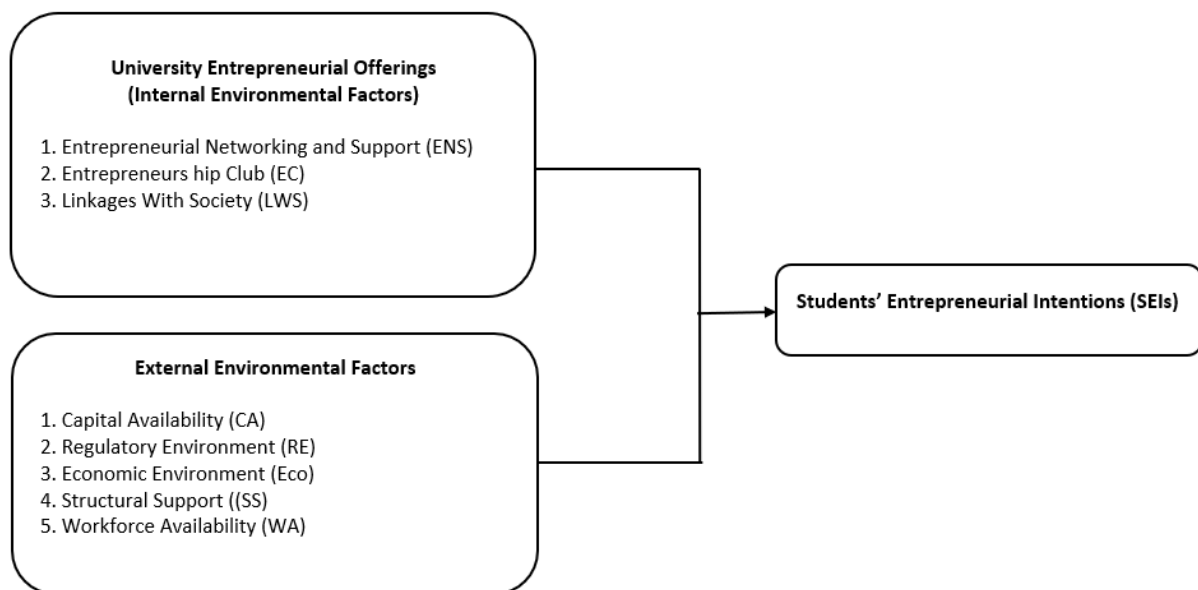
This hypothesis tested the influence of WA on SEI. The causal path between the two constructs revealed a positive impact at a level of  $p < 0.05$  (path coefficient of 0.182 and critical ratio = 2.437). Therefore, this result established support for the hypothesis, leading to acceptance of the hypothesis H2f, which suggests that WA positively influences SEIs.

## **5.10 The Revised Research Model**

Having successfully validated the structural models' goodness-of-fit to the data and performing the causal path analysis, it was found that only eight of the 12 hypothesised causal paths were significant. The quantitative data analysis in this research was mainly aimed at predicting the causal relationship between dependent variable (Students' Entrepreneurial Intentions) and independent variables, which are Entrepreneurial Networking and Support (ENS), Government Policies (GP),

Entrepreneurship Education (EE), Workforce Availability (WA), Regulatory Environment (RE), Linkages With Society (LWS), Capital Availability (CA), Economic Environment (Eco), Supportive Faculty (SF), Structural Support (SS), Entrepreneurship Club (EC) and Entrepreneurship Resources (ER).

In an initial conceptual framework (Figure 3.1 on page 71), the university environmental factors were categorised into two categories, namely University Entrepreneurial Offerings (internal environmental factors) and contextual factors (external environmental factors). However, in an attempt to secure a stable and decent model that would better fit the empirical data, all insignificant regression paths (i.e. problematic constructs) such as EE, GP, SF and ER were dropped. A parsimonious revised model was obtained, indicating a better fit with the collected empirical data. Figure 5.8 displays the final research model.



**Figure 5. 8 Revised Research Model**

In order to assess the explanatory power of the final research model shown in the above figure 5.8 and to shed more light on the nature of the relationships among the model constructs, Squared Multiple Correlation ( $R^2$ ) estimate for the dependent variable (SEIs) was analysed. The coefficient of determination ( $R^2$ ) of the endogenous latent construct explains the predictive power of the structural model and the effect level of the latent constructs. The  $R^2$  is used to assess the proportion of the variance

in the endogenous constructs that can be accounted for by the exogenous constructs (Hair et al., 2018). The SMC result is shown in the following table 5.34.

Dependent Variable (DV)	Squared Multiple Correlation ( $R^2$ )
Students' Entrepreneurial Intentions (SEIs)	.673

**Table 5.34 Squared Multiple Correlation**

As a rule of thumb, in social science research studies,  $R^2$  values of 0.75, 0.50 or 0.25 can be described as substantial, moderate, or weak, respectively (Hair et al., 2017). From reviewing the above Figure 5.8 and Table 5.33 (on page 165), it emerges that SEIs is significantly predicted by eight constructs (ENS, EC, LWS, CA, RE, Eco, SS and WA) which together explain a total of 67.3% of the variance in SEIs, showing statistically significant amount of variance. It implies that 67.3% of SEIs is predicted by the eight constructs.

### 5.11 Summary

This chapter has presented the results of the inferential analysis with a focus on EFA, CFA and hypothesis testing results. Initially, a data screening process was carried out which involved identifying the missing data and data outliers in order to prepare the data for further analysis. Linearity, normality and other reliability tests were carried out in order to assess the accuracy of the data and its suitability for factorial analysis. The chapter also provided an explanation of factor loading for identifying the groups of variables. To show the relationship of items/variables to factors, an exploratory factor analysis method was used. While doing so, eigenvalues and scree plot were used to extract factors. A maximum variance of factor loading was obtained when the varimax orthogonal technique was applied in principal component analysis. A clean factor loading of 12 factors with 45 variables was obtained by dropping the items with eigenvalues greater than 1. After which, SEM analysis was carried out in two steps. The first step involved development of a CFA measurement model and its test for construct validity and composite reliability. With some modifications, CFA results showed goodness-of-fit indices for the measurement model. Finally, based on the CFA results, a structural model was developed and tested in order to examine the hypothesised causal relationships among the latent constructs in the proposed

research model. Standardised estimates and p-values showed statistically significant positive relationships between independent variables and the dependent variable (SEI). Of the 12 hypotheses, eight were found to be statistically significant. The insignificant paths were dropped in order to reach a refined model, based on the SEM analysis.

The following chapter presents the findings of the qualitative study (semi-structured interview findings). As mentioned before, the qualitative study will be used to explain the findings of the empirical quantitative study.

# **Chapter 6: Qualitative Data Analysis**

## **6.1 Introduction**

This chapter aims to test, validate and refine the proposed conceptual framework for determining the impact of the university environment on Students' Entrepreneurial Intentions. It presents the second phase of the sequential mixed-method approach and aims to understand and explain the results gained from the quantitative analysis in the previous chapter, i.e. the qualitative approach will be used to assist with the interpretation of the previously obtained survey findings. The findings from qualitative data were also used to identify any additional factors that influence the SEIs.

An unprecedented amount of empirical qualitative data was collected from key stakeholders of the universities in the KP region of Pakistan. Six interviews were conducted with the Directors and Heads of the Business School of the universities. The qualitative data was analysed to investigate, in depth, the role of each independent factor (from the university environment) in a students' decision to join an entrepreneurial career path.

As illustrated in the literature review and conceptual framework chapters of the thesis, a consolidated effort to develop a framework that outlines all the possible factors from both the internal and external environment of the universities, as well as their theoretical explanations, remains elusive. This emphasises the need to have appropriate empirical evidence to contribute to knowledge in this area. This chapter begins with a discussion of the interviewees' profiles and continues with an in-depth investigation of the role of each independent factor from chapters 2 and 3. This explains the outcomes of the quantitative findings (Chapter 5) from the key stakeholders' perspectives.

## **6.2 Qualitative Research Phase – An Overview**

In line with advice from Creswell et al. (2013), a qualitative research method was employed in this study to understand and confirm the impact a university environment has on SEIs, as shown by the survey findings in Chapter 5. Informal and semi-structured interviews were held to: 1) gain further details and explanations about the findings from the quantitative data; 2) provide further confirmation of the research model and hypotheses; 3) offer further explanations for the surprising results of the

hypotheses testing; and 4) disclose any further issues to be considered when studying the impact of the university environment on SEIs in Pakistan in the future.

The interviewee sample, as described in Chapter 4 (Research Methodology), was selected based on a purposive sampling technique of a non-random sampling method (Patton, 2002; Etikan, et al., 2016). Generally, in qualitative studies, the researchers aim at obtaining in-depth information to assist in answering the research questions adequately; therefore, they purposively select such cases or participants in the sample that they believe will generate valuable data which meets the research objectives (Taherdoost, 2016). Similarly, Etikan et al. (2016) propose that purposive sampling is most suited to identify and select the information-rich cases for the most proper utilisation of available resources. This involves identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest (Patton, 2002; Etikan, et al., 2016). In this research, the sample size was based on informational considerations, as the purpose of the interview was to expand the available information acquired from the literature review and analysis of the quantitative data. Therefore, based on a purposive sampling technique, six interviewees (Directors/Head of the Business Schools from different universities in the KP region) were selected who adequately reflected the specialised research population. The researcher deemed them to be the most suitable people to reflect perceptions about the available entrepreneurial support provided by the universities and government and to outline the environment that may impact SEIs in the KP context. Two interviews per each geographical location (Central, Northern and Southern) were considered enough to reach conceptual saturation in the qualitative study, as advised by Guest et al. (2006).

Prior to the qualitative data collection using interviews, the crucial decision was to select the mode of interviews. Although face-to-face interviews are mainly used for collecting qualitative data, other forms of interviewing participants such as phone interviews and online interviews via Skype, WhatsApp, Facebook, Microsoft Teams and Zoom etc. are also commonly used nowadays (Saunders et al., 2015a; Gray et al., 2020). According to Archibald et al. (2019), Zoom/Microsoft Teams are viable tool for collection of qualitative data because of their relative ease of use, cost-effectiveness, data management features, and security options. Moreover, owing to

the Covid-19 situation, online interviews were conducted using Microsoft Teams and Zoom software. Doing so also allowed the researcher to record the interviews, with the permission of the interviewees, which was helpful at the later stages of transcription and analysis. The demographic profile of the interview participants has been presented in Table 4.8 on page 112. Their names and identities are not given, in the interests of confidentiality and in accordance with the ethical approval requirements prescribed by LJMU. A coding scheme was used to identify participants (e.g. P1, P2, etc.).

### **6.2.1 Interview Protocol**

An interview protocol is a technique which facilitates the documentation of research participants' stories, interpreting their experiences in response to a research question (Boyce and Neale, 2006; Hunter, 2012). Similarly, the interviewing process of different participants becomes more comprehensive and systematic when the subjects to be explored are previously defined (Patton, 2002). As illustrated above, the choice of the semi-structured interview form was predicated upon the available information acquired from the literature review and analysis of the quantitative data, outlined in Chapter 3 and Chapter 5 respectively. Therefore, the initial conceptual framework and the literature review provided the frame of reference to draw relevant research questions in preparing the initial semi-structured interview themes.

Questions covered in the interview protocol were generally about the overall support available in the universities, steps undertaken by universities for entrepreneurial development and the universities' environment impact on SEIs. Since the current research is deductive in nature, the interview contents were structured in line with the operational dimensions of the initial conceptual framework, which are: (a) Factors from the University's Internal Environment in the form of Entrepreneurial Offerings; (b) Factors from External Environment, and (c) SEIs. University's Internal Environmental Factors encompass Entrepreneurial Education, Entrepreneurship Support Programme, Entrepreneurial Networking, Supportive Faculty, Entrepreneurship Clubs, Entrepreneurial Resources and University's Linkages With Society. These themes and sub-themes are presented in the following table.

Categorisation of Factors	Factors/Themes	Sub-Factors/Themes
University's Internal Environmental Factors	University Support	<ul style="list-style-type: none"> <li>• Main types of Support Available</li> <li>• Curricular Activities</li> <li>• Extra-Curricular Activities</li> </ul>
	Entrepreneurship Education	<ul style="list-style-type: none"> <li>• Teaching approach</li> <li>• Entrepreneurship Curriculum</li> <li>• Inside classroom activities</li> <li>• Experiential Education Programme</li> <li>• Case Studies, Simulated Business Programmes</li> </ul>
	Entrepreneurial Networking and Support	<ul style="list-style-type: none"> <li>• Employability Support Activities</li> <li>• Entrepreneurial Projects and Tasks</li> <li>• Business Plan Competition</li> <li>• Seminars, Workshops</li> <li>• Counselling, Coaching</li> <li>• Role Models, Guests Speakers</li> <li>• Engagement of different stakeholders</li> <li>• Interaction with Practice</li> <li>• Networking Events</li> </ul>
	Supportive Faculty	<ul style="list-style-type: none"> <li>• Faculty's Approach towards Entrepreneurship</li> <li>• Qualification/efficacy of lecturers</li> <li>• Lecturers' background/prior business experience</li> <li>• Skills development exercises</li> <li>• Influence of faculty as role models</li> </ul>
	Entrepreneurship Clubs	<ul style="list-style-type: none"> <li>• Activities aimed at fostering Entrepreneurial Spirit</li> <li>• Learning Environment</li> <li>• Experiential Activities</li> <li>• Students' Involvement</li> <li>• Team Work, Decision Making,</li> <li>• Communication Skills</li> </ul>
	Entrepreneurial Resources	<ul style="list-style-type: none"> <li>• Available resources at the university</li> <li>• Venture Financing</li> <li>• Business Incubation Facilities</li> <li>• Seed Funding</li> <li>• Market Research Resources</li> </ul>
	Linkages with Society	<ul style="list-style-type: none"> <li>• Collaborations with local businesses, Government Institutions, regional development agencies, Industry</li> <li>• Partnerships and alliances</li> <li>• Benefits of such linkages for students</li> <li>• Networking, Mentoring Support,</li> <li>• Spin-offs, Financial Resources</li> <li>• Regional Development, 3rd Mission</li> <li>• University-Business Partnerships</li> <li>• Collaborations with Practitioners</li> </ul>

**Table 6.1 Themes/Sub-themes from Interview about Internal Environmental Factors**

Source: Developed by the author

Questions touching upon External Factors uncover information on dimensions such as Capital availability, Economic Environment, Government Policies, Structural support, regulatory environment and workforce availability. Alongside these environmental factors, an account of SEIs was also assessed. Table 6.2 presents the above-mentioned themes and sub-themes which provide the basis of the study.

Categorisation of Factors	Factors/Themes	Sub-Factors/Themes
University's External Environmental Factors	Capital Availability	<ul style="list-style-type: none"> <li>Financial Resources</li> <li>Personal Liquidity</li> <li>Bank loans and associated barriers</li> <li>Venture Capital</li> <li>Family Financial Support</li> <li>Government Grants/Schemes</li> </ul>
	Government Policies	<ul style="list-style-type: none"> <li>Supportive and Encouraging Policies</li> <li>Tax subsidies for venture creation</li> <li>Effect of government policies</li> <li>Bureaucratic Procedures</li> <li>Government's Business Regulations</li> </ul>
	Structural Support	<ul style="list-style-type: none"> <li>Physical Infrastructure, Consulting Firms</li> <li>Road Networks</li> <li>Entrepreneurial Support Services</li> <li>Vocational Centres</li> </ul>
	Economic Environment	<ul style="list-style-type: none"> <li>Current Economic situation</li> <li>Government Economic Regulations</li> <li>Foreign Direct Investment</li> <li>Economic Development Stage (Factor-driven, Efficiency-driven and Innovation-driven)</li> <li>Macroeconomic Stability</li> </ul>
	Regulatory Environment	<ul style="list-style-type: none"> <li>Overall Regulatory Environment</li> <li>Regulations regarding venture creation</li> <li>Bankruptcy Laws</li> <li>Licensing, Registration, Enforcement</li> <li>Market Entry Regulations</li> </ul>
	Workforce Availability	<ul style="list-style-type: none"> <li>Skilled Human Resources</li> <li>Entrepreneurial and Technical Training</li> <li>Lay-offs, Wage cuts, Downsizing</li> <li>Job Security</li> </ul>

**Table 6.2 Themes/Sub-themes from Interview about Internal Environmental Factors**

Source: Developed by the author

### 6.2.2 Qualitative Data Collection

As mentioned earlier, in order to validate and explain the theoretical framework and quantitative findings, qualitative data was collected and analysed in the second phase of the research. The qualitative data was collected mainly through interviews; however, secondary data (government reports, official web portals and field notes) and comments from survey participants were also included (Reynolds et al., 2005; Autio et al., 2013; Amoros et al., 2019).

Semi-structured interviews were the main method of qualitative data collection; they enabled an in-depth exploration of the participants' personal experiences and thoughts to validate and explain the findings of the quantitative phase of the study. Prior to the interviews, all the interviewees were provided with the study protocol and the LJMU

Ethical Committee’s approval (see Appendix I on page 341). Each interviewee was sent a written informed consent form, in which anonymity and confidentiality were assured and the right to withdraw from the study or refuse to answer specific questions was specified (Kaiser, 2009; Saunders et al., 2015a). As previously mentioned, although face-to-face interviews were intended for the research, due to the Covid-19 situation, online interviews were conducted via Microsoft Teams and Zoom (Archibald et al. 2019; Gray et al, 2020). At the beginning of each interview, the researcher introduced himself and explained the purpose of the study. All interviews were audio/video recorded with the participants’ consent. Since, the medium of teaching and instructions is English in the KP universities, the interviews were conducted in English. Each interview was transcribed and, to ensure the validity of the interviews, the interviewer checked the transcribed versions twice with the recordings, to avoid any discrepancies in the transcribed answers (Bailey, 2008).

In addition to the interviews, the following secondary data sources were also used to collect the qualitative data for the study.

S. No.	Document Titles	Source
1	Entrepreneurship Development in Khyber Pukhtunkhwa	CIPE (2013)
2	How to Start and Grow Your Business in KPK including Peshawar	SBC (2021)
3	Business incubation and acceleration in Pakistan: An entrepreneurship ecosystem development approach (Book Chapter)	Qureshi et al. (2021)
4	Factors affecting the performance of women entrepreneurship in KPK: An Empirical Analysis (PDF)	Faryal (2019)
5	NIC Peshawar: Igniting the Spark in KPK	NIC (2021)
6	Durshal Project	KP Information Technology Board (durshal.com)

**Table 6.3 Secondary Data Sources**

Source: Developed by the author

### 6.2.3 Data Analysis Procedure

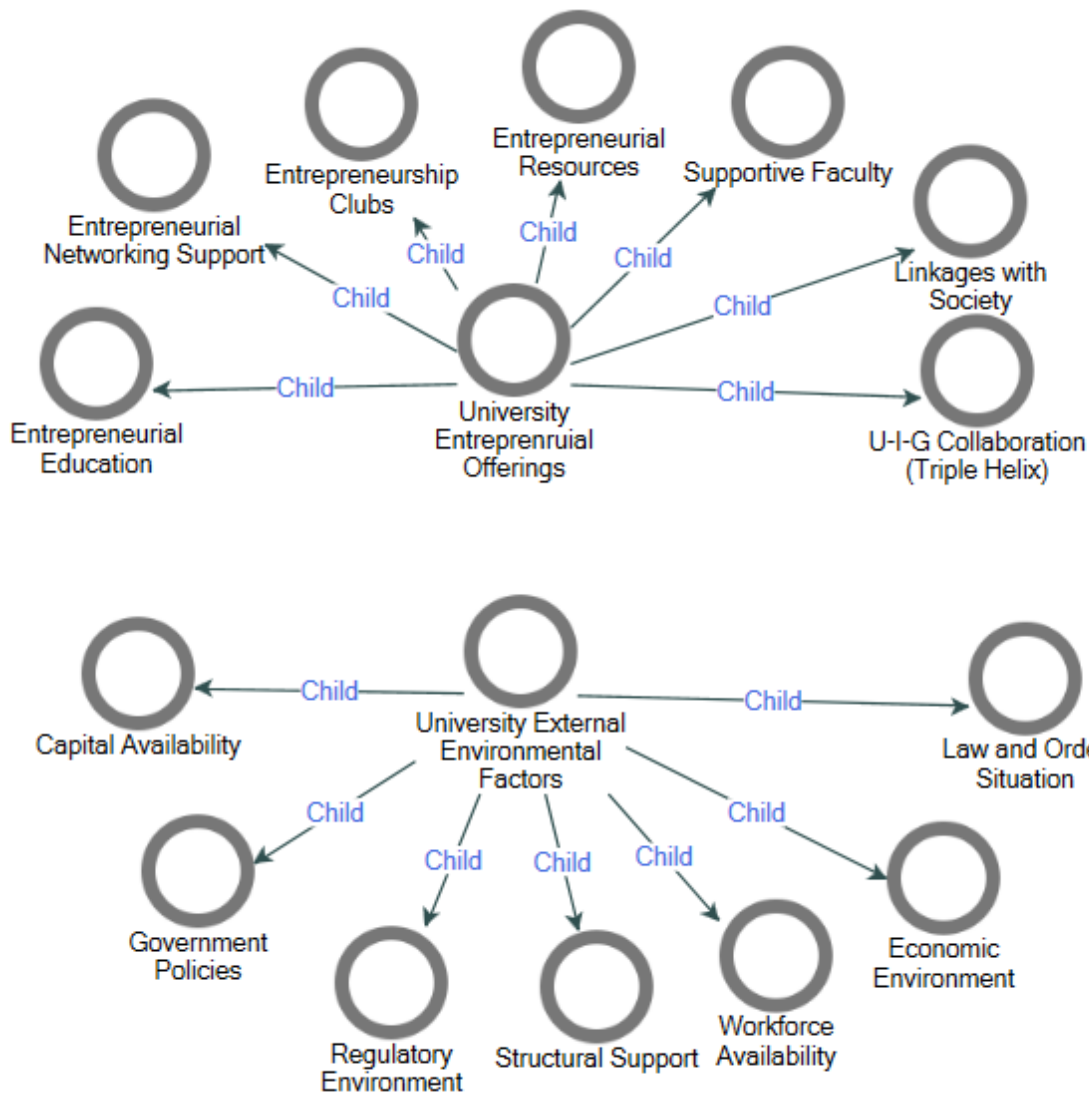
Researchers often use computer-assisted data analysis software or tools (for example NVivo, ATLAS.ti) to help them in analysing qualitative data, as they believe that familiarity with such software will help to produce the required analysis and results (Yin, 2013). Additionally, Bergin (2011) states that software packages designed for

qualitative data, such as NVivo, can accelerate the analysis process. However, although these tools are useful in data analysis, the data analysis cannot be carried out without human consideration and interaction (Saunders et al., 2012). Thus, the software provides the researcher with an interface and functions to assist them in performing the analysis.

Creswell (2013) asserted that not only are large numbers of interviews or voluminous transcripts effectively processed by the software but also data matrixes are created in order to compare responses among interviewees. The software also helps in exploring connections and revealing hidden patterns in the data, along with systematically storing and visually or structurally displaying the data in one place (Bergin, 2011). Other advantages include improvements in the consistency of approach, assistance with team research and the ability to help in theory building (Weitzman, 2000). Conversely, the amount of time and effort taken to become proficient in using the program and the tendency for the analyst to take short cuts are considered as the main disadvantages of using data analysis software (Weitzman, 2000; Bergin, 2011).

The interviews conducted with Directors/Head of Business Departments of universities in the KP region were audio/video recorded, transcribed and coded using NVivo. Content analysis was used to analyse the data obtained from the interviews. According to Luo (2019), content analysis is an approach that helps in identifying, analysing and reporting themes or patterns within the collected data. It mainly involves data reduction and analysis techniques by which the qualitative data is segmented, categorised, summarised and reconstructed to capture important concepts within a data set (Ayres, 2008). Content analysis was chosen because of its flexibility, ease and ability to provide rich data descriptions which are replicable (Luo, 2019). However, it is criticised for being time intensive as manually coding large volume of data is time consuming. This was overcome by the usage of NVivo software which assisted in the coding and categorisation process. While doing so, the researcher used categorisation, codes and themes for analysing participants' responses, whereby the data was categorised into two main categories: the universities' internal environmental factors and external environmental factors. These categories were then coded based on the already classified factors from the initial conceptual framework and quantitative data phase. This led to the creation of 14 initial codes or themes (called nodes in NVivo), i.e. seven

themes associated with the internal factors category and seven with the external factors category. These themes developed from the primary data were pattern matched with the pre-coded factors, while new codes were created for the two newly identified factors and emergent themes. Participants' responses on each main node (theme) were carefully examined in order to extract sub-themes (called sub-nodes in NVivo). This concept of nodes and sub-nodes is also known as 'parent' and 'child' nodes respectively. For example, participants' perceptions of ENS as a main node would be considered a parent node and sub-nodes emerging as a result of these perceptions (e.g., seminars, counselling, networking events, business plans) would be considered as child nodes. A thematic framework of all the nodes and sub-nodes was then developed and verified against the primary and secondary data via the coding process. This step was important to observe any key patterns or emphases in the data and to draw valid conclusions that could sharpen understanding and illuminate the research problem (Hutchison et al., 2010; Bazeley and Jackson, 2013). Figure 6.1 below shows the results of the coding process using NVivo.



**Figure 6.1 NVivo Results of the Thematic Framework Coding Process**

The following sub-sections provide the detailed results of the qualitative data analysis in respect of the factors identified by the research model and the causal relationships among them. Screen shots and maps of NVivo 11 as well as direct quotes from interviewees are provided where appropriate as means of illustrating and summarising the findings.

### **6.3 Analysis of the University’s Internal Environmental Factors**

This section describes the University’s Internal Environmental Factors such as Entrepreneurial Networking and Support, Entrepreneurship Clubs and University’s Linkages with Society. Previous chapters (Literature Review and Quantitative data analysis) identified these factors as important in affecting the SEIs in the universities

in the KP context. Each of these factors is discussed in detail in the following sub-sections.

### **6.3.1 Entrepreneurial Networking and Support**

With regard to the Entrepreneurial Networking and Support construct, participants were asked if they considered it as one of the significant factors influencing Students' Entrepreneurial Intentions. Most of the participants confirmed that, in addition to curricular activities, co-curricular activities in the form of mentoring, coaching, networking, business plan competitions and other support provided by the universities help in developing enterprising behaviour among students. One of the interviewees observed that:

*'There are networking events which are arranged by the university; such events engage different stakeholders including academia, students, businesses and government organisations. Thus, they try to bring together these different stakeholders.'* (P2)

Another participant viewed the networking events as a source of building social capital. In his words:

*'The networking events help students in building their social capital as they provide the students [with] access to suppliers, investors, distributors and even potential customers.'* (P3)

These networking events also help the students in maintaining the social ties that may be of importance to them once they graduate and opt to start their own business. As stated by one of the participants:

*'Entrepreneurial networking at universities is also associated with those ties in the overall personal network that the student establishes and maintains for identifying opportunities that may be exploited in [the] future.'* (P2)

The second form of support provided by universities relates to the coaching and mentoring support, which was also held to be important by participants in having an impact on SEIs. As stated by one participant:

*'The mentoring and coaching is mainly aimed at advancing students' subject knowledge; providing support for setting a career path; emotional and psychological support; and existence of a role model to emulate and from whom to learn how to overcome challenges.'* (P1)

Another participant mentioned that:

*'The coaching and mentoring programme run by universities allows communication [between] students and experienced entrepreneurs for support and guidance.'* (P5)

Another interviewee stated that:

*'In order to inculcate entrepreneurial skills, attitude and behaviour among students, educators at universities should also use a mentoring and coaching approach.'* (P6)

Business planning competitions among students were also identified to have an impact on the students' intentions towards venture creation, as one of the participants identified:

*'Yes, we have business plan competitions, both at university level and regional level. These business plans are focused on development of business strategies, writing of business plan and implementing of business idea. These business plan competitions help in fostering skill development and gaining practical experience. Thus, they promote entrepreneurial activity within the university and the broader community.'* (P4)

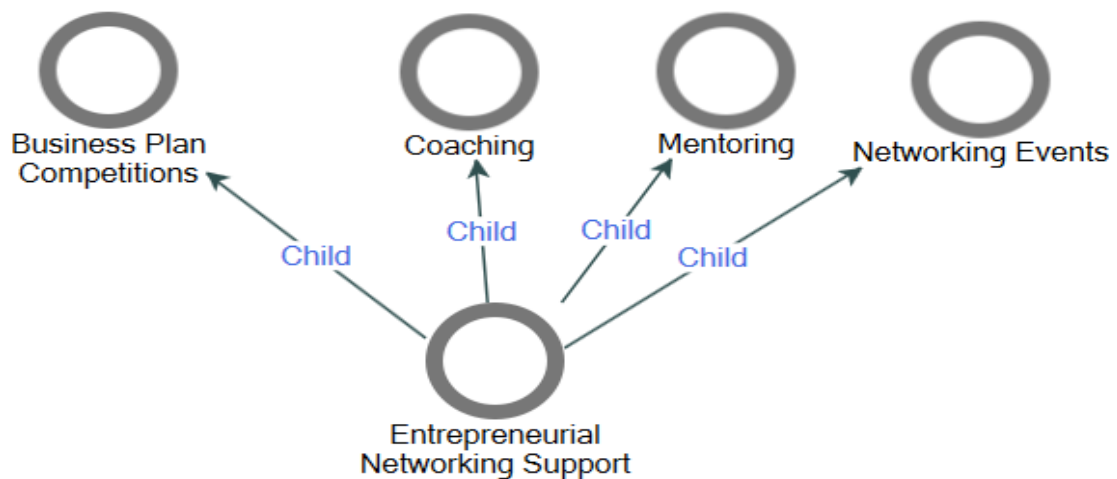
Another participant highlighted the entrepreneurial skills that are developed as the result of the business plans. In his words:

*'The business plan competitions help the students in developing their entrepreneurial skills such as managerial skills including written and oral communication, decision-making ability, planning and organising, risk taking and innovation, etc.'* (P3)

The qualitative data collected from the open-ended survey questions also revealed the fact that the students find Entrepreneurial Networking and Support important as they considered the coaching, networking, mentoring, business plan competitions and other support provided by the universities essential in fostering an entrepreneurial mindset.

As well as these comments by the participants about the Entrepreneurial Networking and Support available at universities which identified coaching and mentoring, networking events and business plan competitions to be important in fostering SEIs, secondary data also commonly mentioned these themes. For example, recently Fauzi (2021) in her research study indicated that business plan competitions significantly influence the spirit of entrepreneurship among students. Similarly, Nabi et al. (2019) in their research confirmed that mentoring and coaching played a significant role in shaping students' entrepreneurial choices.

Figure 6.2 shows the qualitative data analysis (sub-themes) regarding the impact of ENS on SEIs.



**Figure 6. 2 NVivo Visual Map for the 'Entrepreneurial Networking and Support' Construct**

### 6.3.2 Entrepreneurship Clubs

With regard to the Entrepreneurship Clubs construct, participants were asked if they considered it as one of the significant factors influencing SEIs. Most of the participants confirmed that entrepreneurship clubs at universities help in developing enterprising behaviour among the students. As stated by one of the participants:

*'Entrepreneurship Clubs, though this is a new phenomenon in Pakistan, but I think they are important for EE as they are a way of enhancing formal entrepreneurship. As such they are run by students; therefore, they help them in taking initiatives, i.e. taking risks. Secondly, ECs also help in developing enterprising skills among the students.'*  
**(P2)**

Furthermore, another participant mentioned that:

*'There is a collaborative learning environment at the ECs which gives the students an opportunity to experiment [with] their skills learnt in the classroom, without major risks. Thus, the ECs have value in simulating the entrepreneurial learning which leads to student engagement. Therefore, they think it important to develop enterprising behaviour.'* (P1)

Similarly, another participant stated that:

*'ECs provide the students with an opportunity to develop their entrepreneurial capabilities and particularly their capacity to lead entrepreneurial activities.'* (P4)

Another participant pointed out the experience students get from ECs. As he expressed:

*'Like other student societies, ECs are also run by students, whereby all the activities are self-directed and self-selected by the students. These experiential activities are carried out outside of the traditional classroom settings and thus give the students experience in dealing with risks and uncertainties. Therefore, I would deem them important for the learning environment they provide to the students.'* (P5)

Similarly, another participant pointed out the reason students place importance on ECs by highlighting their learning benefits:

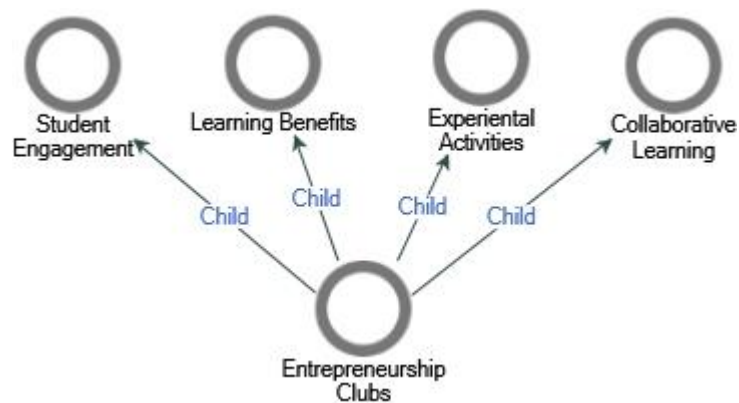
*'The activities at ECs also provide many learning benefits to the students such as a supportive environment within which students can take risks without fear of failure; enhancing entrepreneurial skills; raising awareness, knowledge and aspirations about entrepreneurial activity; experience by engaging in practice; enhancing problem solving skills, etc.'* (P6)

The qualitative data collected from the open-ended survey questions also revealed the fact that the students find the Entrepreneurship Clubs to be a learning environment which supports them with their enterprise knowledge, skills and experience.

As well as these comments by the participants about Entrepreneurship Clubs at the universities which identified experiential activities, learning benefits, risk aversion and problem solving, etc., to be important in fostering SEIs, secondary data also commonly mentioned these themes. For example, Eldredge et al. (2017), while describing extra-

curricular student entrepreneurship activities, averred that ECs promote innovative thinking by encouraging their members to participate in creative activities, thus increasing their presentation skills and creating networking opportunities. The findings from Preedy and Jones (2017) both supported and updated the prior studies that posit a link between the ECs and opportunities for experiential and social learning. Moreover, recently Sesone et al. (2021) argued that the more time students spent on ECs and the higher the number of events they attended, the greater their entrepreneurial intention was.

Figure 6.3 shows the qualitative data analysis (sub-themes) regarding the impact of EC on SEIs.



**Figure 6.3 NVivo Visual Map for the 'Entrepreneurship Clubs' Construct**

### 6.3.3 Linkages with Society

With regard to the University's Linkages with Society construct, participants were asked if they considered it as one of the significant factors influencing SEIs. Most of the participants confirmed that strong linkages between universities and the society help in developing enterprising behaviour among the students. As stated by one of the participants:

*'Well, the importance of linkages that a university establishes with other institutes cannot be undermined. They are useful in a sense that we need such linkages for the students to have the compulsory internship there, which is part of the academic [requirements]. All of the business students are required to complete two to four months' compulsory internship at an institute [either a bank, company, NGO or any*

*other government department], after which they will have to produce an internship report for which they are assessed and marked.'* (P1)

Another participant explained the nature of such linkages in these words:

*'Yes, most of the universities have linkages with local businesses, chamber of commerce, SMEs, NGOs, government institutes and other regional development agencies. These linkages also take the form of collaborations and exchanges with other universities as well. I would like to give you an example of our collaboration with the local cottage industry of leather products here in Charsaddah whereby the small firms are given advice and supported for the marketing and launching of their products in the new markets.'* (P3)

The university's linkages with the external bodies also provide a source of market and resource information for the students, as stated by one of the participants:

*'Well, the linkages which the university has established with the external organisations have also proved to be a source of market information to the students. For instance, when the students graduate and they need any market information or resource information about starting a business, the linkages are helpful in that sense that they assist them in accessing the resources available outside, in the society.'* (P2)

Another participant pointed out the financial resources available to the students due to the university's linkages. As he stated:

*'Our linkages with the banks and other financial institutes not only help the students in doing internships there but also help them in understanding the processes involved in accessing the financial resources needed.'* (P6)

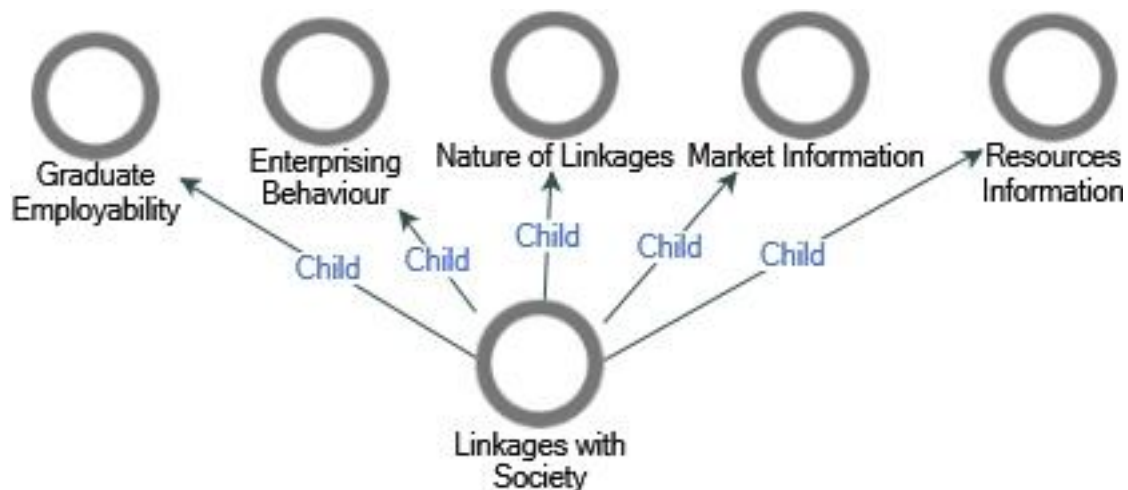
Promoting graduate employability was also identified as one of the advantages of the university's linkages with enterprises in the society, as stated by a participant:

*'These linkages of universities with the enterprises in the society help in accommodating students for their internships, which support them in promoting their employability skills.'* (P5)

As well as these comments by the participants about university linkages with society, which identified market information, internships, resource recognition and employability skills, etc., to be important in fostering SEIs, secondary data also commonly mentioned these themes. For example, Towers et al. (2020) claimed that

university-enterprise collaboration was essential for promoting graduate employability and entrepreneurship. Similarly, Ashraf et al. (2018) argued that a university's collaborations/linkages with external enterprises can be a prominent solution for the work readiness problems being faced by students, in terms of covering any skills gaps. Also, Hasan (2020) concluded that graduate entrepreneurs are more likely to access the university's sources linked to informal networks/trade associations as well as direct industry sources, customers and suppliers.

Figure 6.4 shows the qualitative data analysis (sub-themes) regarding the impact of the university's linkages with society on SEIs.



**Figure 6.4 NVivo Visual Map for the 'Linkages with Society' Construct**

Along with these pre-identified internal environmental factors, the participants also identified another factor which holds importance with them in regard to the impact on SEIs. This factor is identified as 'University-Industry-Government' (U-I-G) collaboration. A discussion on this new factor along with a brief literature review is presented below.

### **6.3.4 University-Industry-Government (U-I-G) Collaboration**

Greater interaction between universities, industries and the government is deemed essential for fostering social and economic development. A review of literature in this regard was carried out in order to understand the phenomenon of U-I-G collaboration. Literature identified that U-I-G collaboration, also commonly known as the 'Triple Helix Model', has gained scholarly as well as policy attention recently (Etzkowitz and

Leydesdorff, 2000; Takeishi, 2002; Guerrero and Urbano, 2012; Badillo et al., 2017; Linton 2018). In order to foster regional economic growth and promote entrepreneurship, the triple helix model is used for understanding the dynamics of interactions between the three institutional realms of university, industry and government (Cai and Etzkowitz, 2020). In the transition to a knowledge-based economy, the triple helix model calls for universities to have a heightened role. Universities are perceived to fulfil major roles of educating and training students; conducting and disseminating research; boosting productivity through collaborative relations with external partners; and contributing to the socio-economic well-being of their localities (Barrioluengo et al., 2016). Various scholars (such as Kenney and Goe, 2004; Rasmussen et al., 2006; Guerrero and Urbano, 2012; Sarpong et al., 2017) have called this broader role of universities relating to economic growth and social development their 'third mission' in addition to teaching and research. Hofer and Potter (2011) elaborated that universities need to be more entrepreneurial by monitoring the impact of entrepreneurial support on their graduates' entrepreneurial behaviour and the business activities of the university research groups. Similarly, Moreno (2019) identified that, for generating entrepreneurial activities at universities, one of the best ways is the transfer of knowledge and technology between government, industry and university, where the government provides support to the research and development (R&D), the universities transmit education to the youth, 'spin' new ventures and conduct industrial research; and the companies are the knowledge recipients (Sarpong et al., 2017). This mutual and reciprocal public-private and academic partnership for the knowledge economy has resulted in R&D initiatives such as research consortia, business incubators, science parks, technology transfer offices and financial support institutions in the form of venture capital firms, seed funds and angel networks (Etzkowitz and Zhou, 2008).

The growing role of universities in supporting entrepreneurship was also supported by empirical evidence. For example, Hofer and Potter (2011), while comparing the attitudes of students to entrepreneurship in 19 different countries, determined that 43% of the students intended to be independently employed five years after graduation, reflecting a strong link between universities and entrepreneurship. Hassan (2020) suggested that turning these university graduates into entrepreneurs can be a successful strategy for fostering innovation and economic growth, especially in places

that undergo economic changes. Similarly, Mahmood et al. (2015) carried out research about university-based business incubators and outlined that they impact economic growth by playing a vital role in generating, establishing and activating SMEs, thus encouraging job creation; generating revenues in the local community; and creating links with companies at the local economic level in the long term. Additionally, Matotola (2017) analysed nine business incubators with a total of 175 incubated businesses in the USA and revealed evidence that 502 jobs in total were created by these businesses, thus confirming the positive impact of incubators in job creation.

In addition to the literature and empirical evidence provided above, the participants of this research also supported the idea of an integrated mechanism of collaboration between the three spheres of institutions, i.e. university, industry and government. In the words of one of the participants:

*'We have seen in the developed countries that a strong collaboration between university, industry and government bodies exists. They all work together for the economic development of the society at large. The same collaboration has recently started between these three spheres in Peshawar. I must mention the National Incubation Centre (NIC) in this regard, which is an initiative of the federal government and works in close relationship with universities and industry. Although it is at its inception stage, we hope that this U-I-G collaboration will help in the long term in promoting entrepreneurship both at the university and society levels.'* (P1)

The U-I-G collaboration was also highlighted by another participant in the following words:

*'Well, we do not have established links like those existing in developed countries, but I would say that the government has recently taken some steps in this regard such as the establishment of EDCs in universities and also the establishment of the NIC [National Incubation Centre] at Peshawar. Both these institutes are now associating with local Chambers of Commerce and in this way, we are gradually moving towards U-I-G collaborations.'* (P3)

One of the participants even provided examples of public-private-academia partnerships that have been established in the KP region. In his words:

*'As you mentioned about U-I-G collaborations, I would like to mention that such collaborations are extant for a long time. It's only [through] the recent research in the form of the triple helix or other collaborative models that such partnerships have*

*gained importance. I can cite you that our Agriculture University has been involved in many such collaborations with NIFA [National Institute of Food and Agriculture] and other chemical industries [pest control firms] in order to advise and direct farmers of the province. Another example I can cite is a collaboration of UET [University of Engineering and Technology, Peshawar] whereby they worked in partnership with USAID [United States Agency for International Development] and NDMA [National Disaster Management Authority] for improving seismic resistance of building structures in highly seismic risk areas such as Balakot and Mansehra in the KP region after the deadly earthquake of year 2005.'* (P4)

Institutional-level support in the form of funds provision and policy implementation by the government was also deemed important for successful U-I-G collaborations, as stated by one of the participants:

*'The fact is that the local industry in the KP region is based on small SMEs that are not technology and innovation driven. Also, business skills and expertise are lacking among the business community, who also face lack of government and institutional support for starting and developing their businesses. We have noticed that any such initiatives taken in the past were also marred by lack of funds and proper policy implementation procedures by the government. Therefore, I think we will need an institutional approach from the government here which will also need the involvement of academia for the development of industry and ultimately regional economic growth.'* (P6)

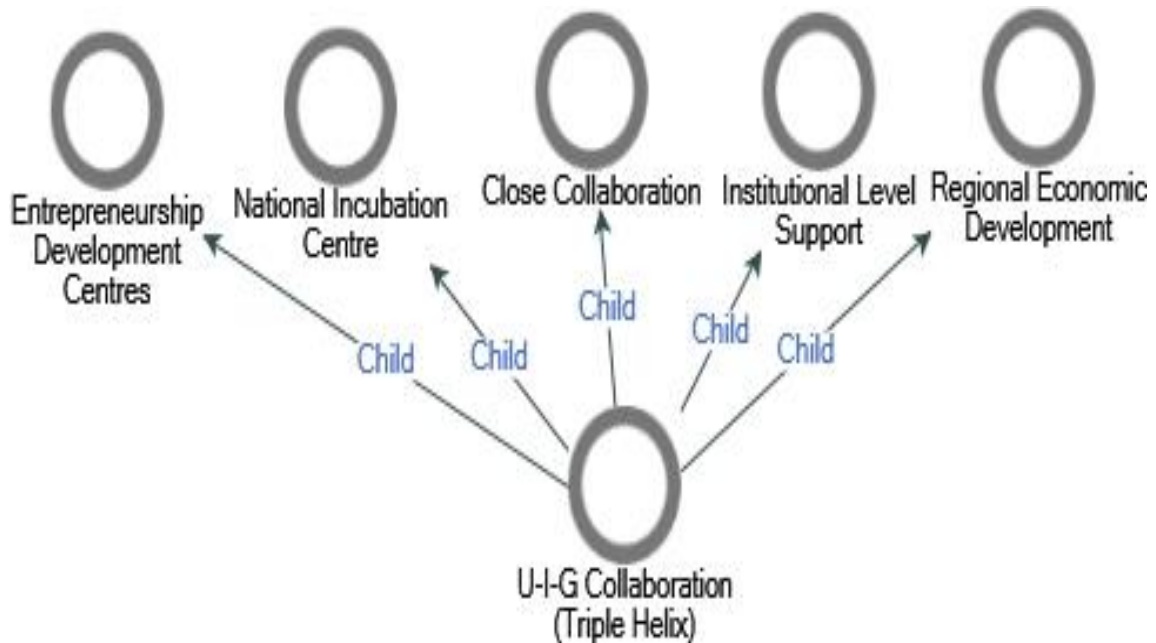
Another participant noticed that the government could help in the regional economic development by integrating its different realms:

*'We have different government institutions such as SMEDA [Small and Medium Enterprise Development Authority], TDCP [Trading Development Corporation of Pakistan] at national level. Then we have Durshal [a project of KP, IT Board for enabling the youth to collaborate, innovate, access training and launch businesses] and KP-Impact [a province-wide economic and social impact programme for promotion of youth entrepreneurship, innovation and providing economic opportunities for youth]. What I would suggest is to have an integrated approach in this regard as these different initiatives are started with the same aim. Therefore, if all these institutes work in close collaboration with universities and industry, it will not only lead to economic development but will also promote quality education and social-cultural facets of the province.'* (P1)

From the above discussion on the U-I-G collaboration, it can be concluded that an institutional approach based on the relations of academia, industry and government is needed for the adoption of knowledge strategies which combine education with

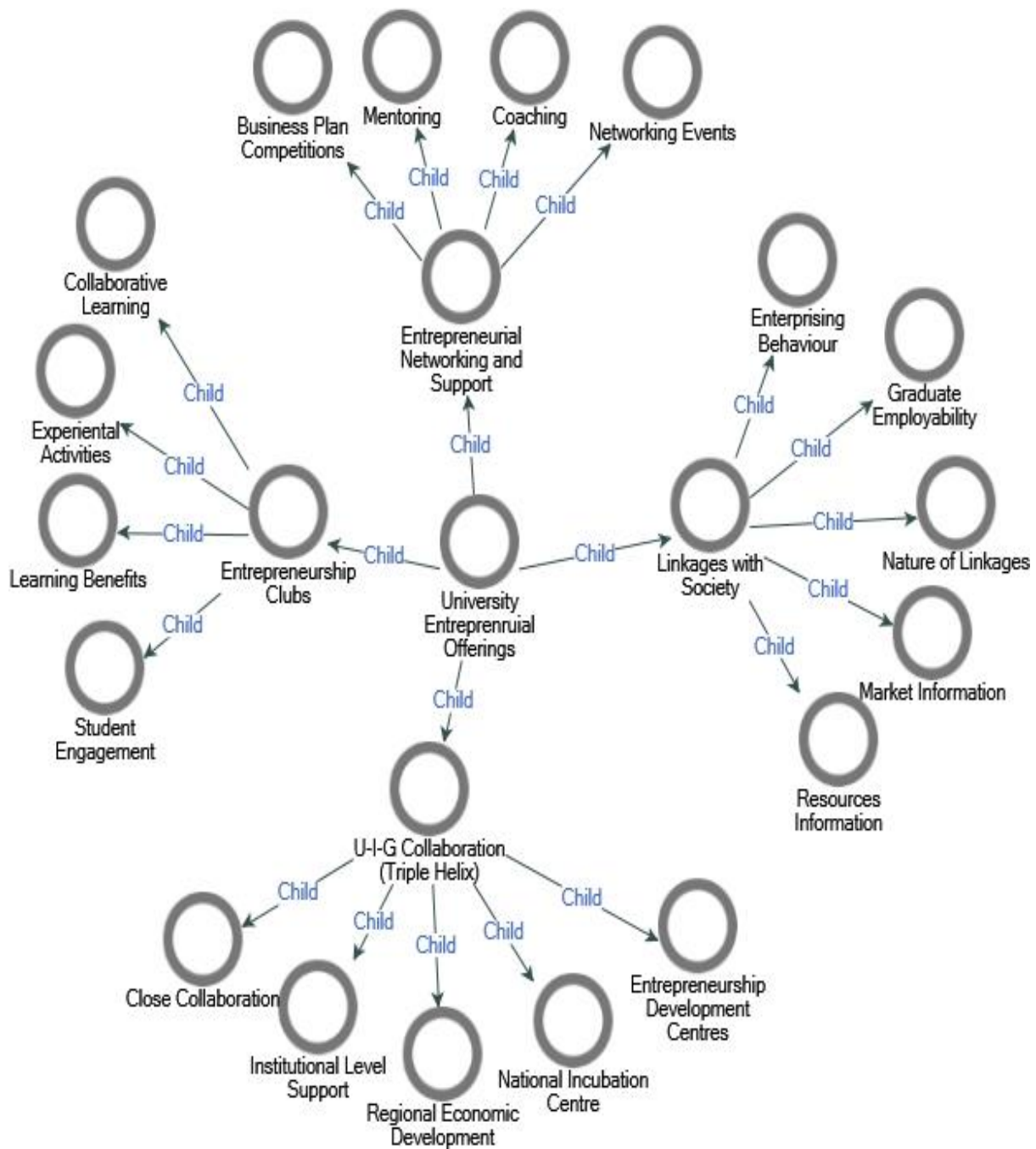
research and innovation for the development of entrepreneurial activities at universities in the KP region.

Figure 6.5 shows the qualitative data analysis (sub-themes) regarding the impact of the U-I-G Collaboration.



**Figure 6.5 NVivo Visual Map for the 'U-I-G Collaboration' Construct**

Based on the aforementioned findings, the following figure, Figure 6.6, attempts to summarise the case study interview findings related to the internal environmental factors.



**Figure 6.6 Summary of the Content analysis of Internal Environmental Factors**

#### **6.4 Analysis of the University's External Environmental Factors**

This section describes the university's external environmental factors such as Capital Availability, Government Policies, Regulatory Environment, Economic Environment, Structural Support and Workforce Availability. Previous chapters (Literature Review and Quantitative Data Analysis) identified these factors as important in affecting the

SEIs in the universities in the KP context. Each of these factors is discussed in detail in the following sub-sections.

#### **6.4.1 Capital Availability**

With regard to the Capital Availability, participants were asked if they considered it as one of the significant factors influencing Students' Entrepreneurial Intentions. Most of the participants confirmed that it was as, in the inception stages of a venture, capital availability is vital for survivability and success; therefore, it is deemed critical in having an impact on the SEIs. As stated by one of the participants:

*'Of course, the availability of capital is essential for the venture creation. In this regard, I would mention that students or aspiring entrepreneurs can access both formal and informal sources of capital. Formally we have banks, some venture capitalists and government schemes which offer substantial amounts of capital to help the new businesses get established. Informal sources include other businesses, family members and friends who can provide capital to the new venture creators.'* (P1)

Currently, there are also different government schemes which offer aspiring entrepreneurs the initial capital needed for establishing businesses, as explained by one of the participants:

*'I would like to mention that the current federal government has started a Youth Entrepreneurship Scheme [YES] or 'Kamyab Jawan' Scheme, which offers loans from one million to 25 million Pakistani rupees (PKR) in three different tiers with 3% to 5% mark-up, not even [just] to the new aspirants but also already established small businesses who are struggling. Similarly, here at provincial level, the government [has a] 'KP-Impact Challenge' programme, which offers business grants from 200,000 PKR to 500,000 PKR to the educated unemployed youth to help them in starting up their businesses. Also, these grants are non-refundable. This helps the new entrepreneurs a lot in fulfilling their initial capital requirements.'* (P3)

Along with these financial resources, the participants also pointed out that, due to religious beliefs, the informal sources of capital are mostly preferred in the KP region, as expressed by these participants:

*'In the KP region, the people are more religion orientated and, as Islam prohibits loans with interest, thus people due to their religious beliefs prefer not to obtain loans from banks, which are usually based on interest. Therefore, most of the people resort to informal sources of capital/funds, including family members or friends.'* (P2)

*'Instead of using conventional sources of finances for establishing businesses, people here in the KP prefer to use non-conventional sources such as friends and acquaintances. This is mainly due to the religious beliefs which prohibit loans with interest as offered by banks.'* (P4)

Another reason cited by the participants for the usage of informal capital resources was the high interest rates charged on the loans offered by the financial institutions. One participant mentioned that:

*'[There are] a couple of reasons for the use of informal financing for starting a business. The most important are the high interest rates, high collateral and personal guarantee requirements. Also, I believe that, at the start, the majority of the entrepreneurs are not confident about the success of the business, thus this fear of failure holds them [back] from taking big steps including securing bank loans, as it is perceived to be involved in long administrative procedures.'* (P2)

Another participant made the following observation:

*'Along with religious beliefs, people also hesitate to obtain loans from banks mainly due to the lengthy application process coupled with the higher rates of interest. On the other side, we also have some institutions which offer interest-free loans for the unemployed to establish their business. One example I would like to mention here is that of the 'Akhuwat' Foundation, which offers interest-free loans, and the good thing is that they have maintained a 100% loan recovery rate while operating for more than 15 years now.'* (P6)

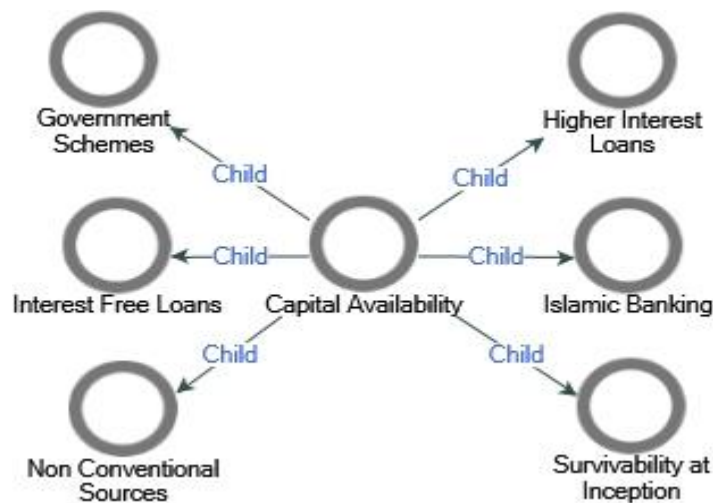
The emerging Islamic banking in the country was also pointed out by the participants as being important for aspiring entrepreneurs to arrange the capital/finances for establishing and running their ventures. In the words of one of the participants:

*'Like other Islamic countries, recently Islamic banking has also gained popularity in Pakistan. These banks offer equity-based financing such as 'Musharika', with the concept of joint venture financing, and 'Mudhariba', based on the concept of venture capital financing. As in such cases the lenders are partners in the business, therefore both parties strive hard for the success of the business. Also, this kind of interest-free transactions is encouraged by Islam; therefore, more and more people are resorting to Islamic banks to fulfil the financial needs of their businesses.'* (P5)

As well as these comments by the participants about the capital availability, which identified formal and informal sources of finances, government schemes, private venture capitalist and Islamic banking to be helpful in providing capital for establishing new ventures, secondary data also commonly mentioned these themes. For example, Muhammad (2021) found that, in the last 20 years, the Akhuwat Foundation has

helped 4.4 million people start their own businesses with interest-free loans. Similarly, Islam (2018) pointed out that the KP government set up a 2 billion PKR fund for youth entrepreneurship through the KP-Impact Challenge programme. Similarly, financial support provided by family and friends was also highlighted by various scholars, such as Carter and Rosa (1998) and Khyareh (2018).

Figure 6.7 shows the qualitative data analysis (sub-themes) regarding the impact of the CA on the SEIs.



**Figure 6.7 NVivo Visual Map for the 'Capital Availability' Construct**

#### 6.4.2 Regulatory Environment

With regard to the Regulatory Environment construct, participants were asked if they considered it to have a significant impact on the SEIs. Most of the participants confirmed that entrepreneur-friendly regulations help in developing enterprising behaviour among the students. As stated by one of the participants:

*'The regulatory or legal system does have its impact on the development of entrepreneurial spirits among the students; rather, I would say on almost every aspiring entrepreneur. People with a creative idea will only try to bring it to reality only if they feel that institutions are providing legal protection to them, I mean, where they feel secure.'* (P3)

Similarly, another participant also opined about the regulatory complexity in these words:

*'I would mention that the more the regulatory system is complex, the more it will push away the entrepreneurs from venture creation. Therefore, complex regulations can influence the level of entrepreneurial activity in a country.'* (P4)

Also, another participant made the following observation:

*'Well, I think, having a strong legal system with entrepreneur-friendly regulations will not only reduce transaction costs but will also increase efficiency in business transactions, letting entrepreneurs profit from their activities.'* (P1)

Participants also mentioned that the market entry regulations had an impact on the entrepreneurial activities, as follows:

*'We have seen that the countries where the regulations regarding the market entry are relaxed, they exhibit high entrepreneurial activities and as such the growth of new firms. On the other side, economies with strict market entry regulations have shown slow growth of new firms. Therefore, in Pakistan, the rules and regulations for the new entrants are usually relaxed, in order to provide them with an opportunity to flourish.'* (P1)

*'Along with the market entry regulations, I would also like to mention the start-up regulations, as favourable regulations at the start-up stage will encourage entrepreneurs while unfavourable regulations will hamper entrepreneurial activity. In the case of Pakistan, successive governments have always tried to keep the legal requirements for establishing a venture to the minimum, such as one-window operations for the businessmen at Revenue Offices. Doing so is of benefit to the aspiring entrepreneurs, as it not only saves costs but, most importantly, it also saves their valuable time as well.'* (P5)

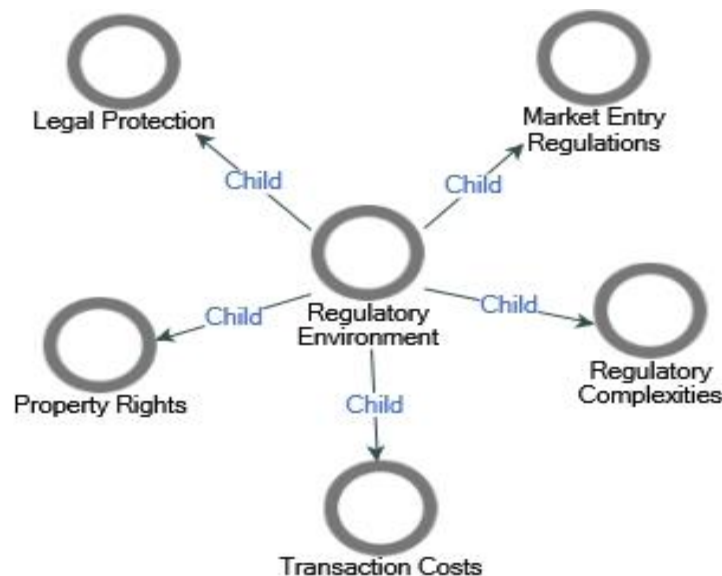
The property rights were also identified by participants as having an impact on the business activities, as stated below:

*'In addition to the legal requirements for establishing the businesses, I would also like to mention another important aspect and it relates to the property rights or, more specifically, the patents rights. We have seen in the past that here [in Pakistan], whenever a product becomes famous, soon its counterfeits also become available in the market. Therefore, I think the legal system should also effectively safeguard the property rights of the entrepreneurs and, in my opinion, the best way for safeguarding the property rights is getting your product registered with the PSQCA [Pakistan Standards and Quality Control Authority], who act very efficiently when it comes to safeguarding the rights of its registered members by taking action against the counterfeiters.'* (P2)

*'Well, in relation to the property rights granted to the entrepreneurs, another aspect which impacts the entrepreneurs is the enforcement of such property laws. As most of the time, the enforcement laws are exercised effectively, therefore this gives the entrepreneurs a sense of trust and confidence in the legal system, which is there to protect their rights.'* (P6)

As well as these comments by the participants about the regulatory environment, which identified start-up regulations, property rights, market entry regulations and other enforcements to be supportive for initiating a business, secondary data also commonly mentioned these themes. For example, Grilo and Thurik (2005) argued that entrepreneurship is discouraged by regulatory complexities. Similarly, Lim et al. (2010) identified that individuals in economies with less complex regulatory regimes and more property rights protection demonstrated higher levels of willingness to engage in entrepreneurial activities. In addition, Alvarez et al. (2011) asserted that entrepreneur-friendly laws and regulations provide support for new businesses. Audretsch et al. (2019), while analysing national business regulations and city-level entrepreneurship, contended that laws relating to market entry and property rights have a significant impact on entrepreneurial activities.

Figure 6.8 shows the qualitative data analysis (sub-themes) regarding the impact of the regulatory environment on the SEIs.



**Figure 6.8 NVivo Visual Map for the 'Regulatory Environment' Construct**

### 6.4.3 Economic Environment

With regard to the Economic Environment construct, participants were asked if they considered it to have a significant impact on the SEIs. Most of the participants confirmed that a conducive economic environment helps in developing enterprising behaviour among students. As stated by one of the interviewees:

*'Of course, rather I would say economic environment is the most important factor in promoting entrepreneurship. Poor economic conditions will not draw people into entrepreneurship. Even if anyone starts a business in poor economic conditions, they will have to struggle really hard. Also, I would cite the public expenditure to have an impact in this regard, such as, if the economy is performing well, the government will be in a position to have increased public expenditure for encouraging entrepreneurship in the forms of different programmes. Contrarily, in the case of a poorly performing economy, the government would not be in a position to allocate major funds for these entrepreneurship programmes.'* (P1)

Similar thoughts were shared by another participant, as follows:

*'Well, the economic environment, or as we can describe it the economy as a whole, can impact the entrepreneurial activities being carried out in the country. Rather, I would say both economy and entrepreneurship are concomitant, i.e., if the economy is performing well, more entrepreneurial activities will be carried out, which will in turn help in further boosting of the economy and vice versa.'* (P3)

The stage of the economic development a country is passing through was also identified by the participants to have an impact on the entrepreneurial efforts undertaken in that country. As stated by a participant:

*'In developed economies, the levels of income, consumption, savings and employment etc. are higher as compared to the developing economies. An entrepreneur will have to take into account these things while engaging in the venture creation process. Therefore, I would rather say that entrepreneurial activities by nascent entrepreneurs vary with the stage of the economic development the country is passing through, i.e. entrepreneurial activities are more common in developed countries as compared to developing countries.'* (P4)

Similarly, another participant added:

*'The current state of the nation's economy also impacts the entrepreneurial activities carried out in the country. If there is inflation, it poses many challenges for entrepreneurs such as higher interest rates, high cost of production, higher living costs, low savings, etc. Similarly, if there is deflation, it will lead to lower prices and as*

*such lower profits for the firms. As such, unemployment may increase if the firms decide to lay-off workers. Therefore, in my opinion, the current economic condition has a direct impact on the development and expansion of entrepreneurship.'* (P2)

The economic policies and programmes adopted by the government were also identified by the participants to have their effect on the entrepreneurial activities. As stated by one of the participants:

*'When we speak of the economic environment, I would also mention the economic policies adopted by the government to have their impact on the entrepreneurial intention of the students. Policies such as industrial policy, export-import related policies, monetary policies, fiscal policy, etc., all have their effect on the entrepreneurial activities. Favourable policies help in promoting and developing entrepreneurship.'* (P6)

In the words of another participant:

*'The government's fiscal policy also has its impact on the entrepreneurial activities being carried out in the country. As such, if the government has increased public expenditure for stimulating and developing entrepreneurship, the level of entrepreneurial activity will also increase.'* (P5)

The economic system was also identified by one of the participants as affecting the level of entrepreneurial activities in a country:

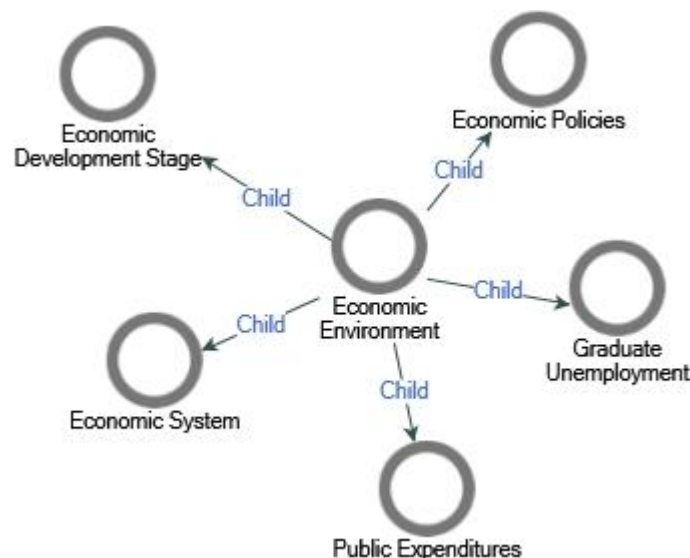
*'In my opinion, the economic system of the country also has its impact on the venture creation by nascent entrepreneurs. As such, if the country is following a market economy, private individuals or businesses own the capital goods along with [having] more control over the factors of production. The lesser government intervention and bureaucratic interference is, the better the scope for innovation and competition is. It is because the companies try to obtain a major market share with their innovated products. [In contrast], in a command economy [or also called a planned economy], the government owns and controls the economic resources. This mobilisation of resources affects entrepreneurship as entrepreneurs work independently in a market economy in comparison to in a command economy. Thus, I would also include the economic system [as having an] impact on the proclivity of students towards an entrepreneurial career.'* (P5)

Graduate unemployment was also identified by the participants as having an impact on students' entrepreneurial decision-making. As stated by one of the participants:

*‘Unemployment is one of the main causes of many socio-economic problems in Pakistan. The youth unemployment – particularly the educated youth who have got degrees in [their] hands but are not able to get jobs are facing unemployment as a major problem which the policy makers should ponder upon. And I think as the entrepreneurship has been helpful in decreasing youth unemployment in the Western countries, therefore, entrepreneurship may be a solution to the youth unemployment problem in Pakistan as well.’ (P1)*

As well as these comments by the participants about the economic environment, which identified economic developmental stage, government economic policies, economic system and graduate unemployment as the major economic factors influencing venturing decisions, secondary data also commonly mentioned these themes. For example, Sayed and Slimane (2014) identified that employment, macroeconomic stability and the stage of economic development are among the most important determinants of entrepreneurial activity. Similarly, Roman and Rusu (2016a) posited that the unemployment rate has an important influence on the nascent entrepreneurship rate. Wu and Mao (2020) also posited that the growth rate of the regional economy and the local economic conditions affect the students’ entrepreneurial preferences.

Figure 6.9 shows the qualitative data analysis (sub-themes) regarding the impact of the economic environment on the SEIs.



**Figure 6.9 NVivo Visual Map for the ‘Economic Environment’ Construct**

#### **6.4.4 Structural Support**

With regard to the Structural Support construct, participants were asked if they considered it to have a significant impact on the SEIs. Most of the participants confirmed that conducive structural support helps in developing enterprising behaviour among the students. As stated by one of the participants:

*'Along with other factors, I think the structural support available also helps students in making entrepreneurial decisions. Such support may be in the form of improved communications networks such as road networks, telecommunications, logistic and physical infrastructure. When the students find the physical infrastructure developed, they will perceive it helpful in carrying out entrepreneurial activities, such as a better road network will not only permit entrepreneurs to bring in supplies from far afield but will also allow finished goods a cheap and quick access to the market.'* (P1)

Similarly, another participant mentioned the improving logistic infrastructure in Pakistan in these words:

*'A well-developed transportation system not only reduces the barriers to connectivity but is also important for saving costs and time of the entrepreneurs. As we are a developing country and the road networks across the country are improving with a network of motorways now joining almost all the major cities, so, definitely, this improved transportation and road networks gives a sort of confidence to the entrepreneurs when it comes to the supply of raw materials to the manufacturers and the finished goods to the market.'* (P3)

Along with the logistic infrastructure, the participants also pointed out the impact of communications and technology advancement in the form of internet access and connectivity on the entrepreneurship development. As stated by one of the participants:

*'When we speak of the structural support or infrastructural support, we also need to look at the technology acceptance and its usage among the students or nascent entrepreneurs. In today's digital era, the access to the internet, mobile phones and IT [Information Technology] is also significant to carry out entrepreneurial activities. Such as we can see here in SWAT district: many of our previous students have started online businesses, offering different locally produced products to almost every individual in the world through the internet. So, I think in this sense the improving technological infrastructure also has its impact on the entrepreneurial activities.'* (P2)

Another participant added:

*'Well, I would say that, along with the conducive highways and motorway networks, the improving telecommunications and technological advancements are also impacting the entrepreneurship in general and the nascent entrepreneurs particularly. This is so because the unemployment in Pakistan is very high and most of the new graduates are opting [to start] online businesses. For this reason, the connectivity and access to the internet play an important role in developing the entrepreneurship among the youth.'* (P4)

Another participant also expressed the following:

*'The technological advancement in the form of internet accessibility has also led to the development of entrepreneurship. I would give you an example of the Kaghan area in KP. Tourism plays an important role in the economy of KP and the internet connectivity has helped in the development of the tourism industry in the KP region. The hotel industry in these tourist areas has also embraced the technological advancement, either in the form of online hotel bookings or looking for tourist guides. All these online activities are driven by the youth. Also, the youth in these areas have established a number of online businesses whereby they offer local specialties such as souvenirs, shawls, artefacts and dry-fruits, etc. So, I think in this way the improving telecom infrastructure is helping the developing entrepreneurship and economy at large.'* (P5)

The improving technological infrastructure was also identified by the participants to have significance in relation to knowledge sharing and information exchange, as stated by a participant:

*'It is due to these technological advancements that, even in the remote areas of the KP region such as Chitral on the eastern side and Waziristan on the western side, all are virtually connected now, which is helping in the sharing of information and ideas. If we speak entrepreneurially, this improved connectivity has allowed firms and entrepreneurs to share ideas, resources and market information. It also helps in knowledge sharing by allowing the transmission of ideas from one person to another, thus making a way for learning from each other. So now a businessman sitting in Peshawar or Karachi can order commodities from far-flung areas such as Waziristan or Chitral. All this information sharing has become possible due to the improvement in the technological infrastructure, which is helping the businesses in the KP region.'* (P2)

The participants also deemed the digitalisation of the economy due to the improved technological infrastructure to be significant for the nascent entrepreneurs. As stated by one of the participants:

*'Moving from a conventional economy to a digitalised economy in the form of e-administration and e-commerce brings ease and comfort for entrepreneurs as it redraws the business frontiers by giving them more access to communicate with other market participants and obtain a better understanding of the industry. Such as by a*

*click of a button the shoe manufacturers here in Charsaddah can place orders for raw materials with the suppliers in Lahore and make huge payments to them as well. So, in this sense, I think this gradual digitalisation of the economy due to the improved telecom infrastructure is helping not only the new ventures but also the established businesses as well.'* (P6)

Along with the digitalisation of the economy and improving technological infrastructure, another important factor which almost all of the participants held significant for the development of the economy in general and entrepreneurship in particular in the country was the CPEC (China-Pakistan Economic Corridor). It is a framework of regional connectivity which involves the establishment of infrastructure projects including modern transportation networks, energy projects and special economic zones. One of the participants observed that:

*'As the government calls CPEC a game and fate changer for Pakistan, it will bring an era of economic development for the region. Under CPEC, China is investing approximately \$60 billion in upgrading the infrastructure in Pakistan including road and rail networks which will not only link all the major cities to one another but will also provide a link to the seaports of Karachi and Gwadar with Northern Pakistan up to China. Also, this involves improving the existing energy infrastructure and establishing new hydroelectric and wind-power projects. The most promising project of CPEC is the fibre-optic project under which about a 850 kilometre-long optical fibre cable has been laid down across all of Pakistan, bringing 4G [4<sup>th</sup> Generation] connectivity to Pakistan. So, once completed by 2030, Insha Allah [GOD Willing], it is envisaged to bring an era of economic development for Pakistan.'* (P1)

In the words of another participant:

*'Yes, CPEC is changing the whole facet of the physical infrastructure of Pakistan by building new road networks, improving the railway network, new energy projects to overcome the energy crisis, fibre optics for improved connectivity, SEZs [Special Economic Zones], establishing logistic parks, and enhancing telecommunication and ICT industry, etc. So, as the government calls it a fate-changer for Pakistan, we can hope it [will bring] economic development to the region.'* (P5)

Another participant added:

*'Well, if we speak of CPEC, definitely it will improve the transportation infrastructure of the country; also, the technological infrastructure is improving, so these infrastructure developments will remove the barriers to connectivity and communication and will increase information exchange, which are essential for entrepreneurial activities, as I explained earlier.'* (P2)

As well as these comments about the structural support which identified the improving logistic and technological infrastructure along with CPEC to be significant in boosting entrepreneurial activities, the qualitative data collected from the open-ended survey questions also revealed the fact that the students find the improving infrastructure significant in venture creation. They also envisaged CPEC to bring an era of economic development for the country. The secondary data also commonly mentioned these themes regarding the significance of structural support for entrepreneurship. For example, Denonyah et al. (2015) established a significant positive relationship between structural support and SEIs. A similar association was also established by various authors (Turker and Selcuk, 2009; Foo et al., 2016; Kor et al., 2020). Zhang and Li (2018), while highlighting the access to the Internet and ICT, established that the linking of students to digital technologies has a significant influence on the SEIs. Similarly, Ajide (2020) posited that there is a positive association between infrastructures (transport, electricity, water and sanitation facilities, ICT and broadband) and entrepreneurial start-ups in Africa. More recently, Ma et al. (2021) established that the impact of High Speed Rail (HSR) on entrepreneurship is realised through improvements in the market potential due to the enhanced information sharing.

Figures 6.10 shows the qualitative data analysis (sub-themes) regarding the impact of the structural support on the SEIs.

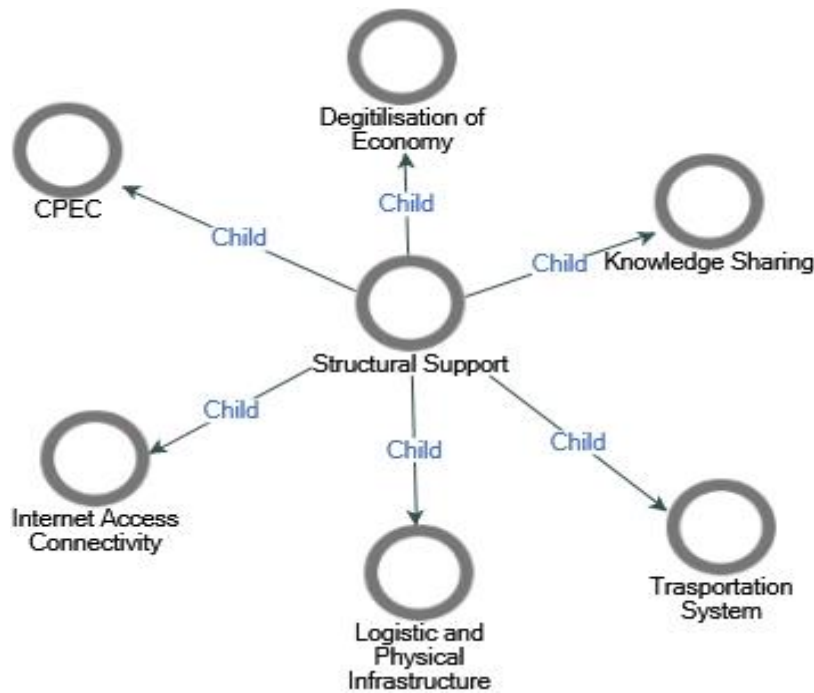


Figure 6.10 NVivo Visual Map for the 'Structural Support' Construct

#### 6.4.5 Workforce Availability

With regard to the Workforce Availability construct, participants were asked if they considered it to have a significant impact on the SEIs. Most of the participants confirmed that the availability of workforce and human capital helps in developing enterprising behaviour among the students. As stated by one of the participants:

*'Access to the right workforce at the venture creation stage acts as a trigger for the start-up activities in many ways. Such as it helps in boosting the confidence of the potential entrepreneurs as they do not have to search about [for] the skilled workforce. It not only saves their time and lowers the costs but also helps the potential entrepreneurs in building trust and confidence in their abilities to successfully carry out start-up activities.'* (P1)

Similarly, another participant added:

*'Well, the supply of a workforce or, more specifically, a skilled workforce has its impact on the new venture creation. Potential entrepreneurs find it difficult to engage in entrepreneurial activities when the right workforce is hard to find. But, luckily or unluckily, the major portion of the youth population in Pakistan is unemployed. Most of them are graduates from universities and a considerable number have got technical qualifications along with some skills. These unemployed youth form a major part of the available workforce. This increased [number of] unemployed graduate youths also brings in competition for the available jobs; therefore, entrepreneurs find it easy to acquire a workforce with the required qualifications or skill sets.'* (P3)

The non-availability of the right skilled workforce was also pointed out by a participant as being harmful for new ventures:

*'In my opinion, the availability of a skilled workforce is very important for the new ventures. The emergence and growth of a new venture will be deeply affected by the non-availability of skilled labour. The initial stages of a venture are very crucial as the firms are vulnerable and I think at this stage, if the entrepreneurs face a problem of skills mismatches, it may prove detrimental for the business.'* (P6)

Another participant focused on the demographic attributes of the workforce, most importantly age and formal education:

*'If you look at the demographic traits of the workforce, the age and education level of the workforce matters a lot. Almost 65% of the total population of Pakistan is youth, aged between 15 and 33 years of age, and a large portion of this population is unemployed. Thus, the workforce available is mostly young and energetic, who are willing to do any job. So, this gives the entrepreneurs the edge to hire young people. Secondly, as we have noticed, the number of universities has increased in the recent years and this surge has also increased the number of graduate youth whose search for jobs continues even five years after graduation. This again gives the entrepreneurs an advantage to hire from the [large] pool of educated youth.'* (P1)

Similarly, another participant pointed out that the graduates from the technical institutes presented a skilled workforce pool to hire from:

*'Although the increasing graduate unemployment, on one side, is posing a daunting challenge for the socio-economic policy makers but at the same time they also present a pool of workforce which is young, energetic and ready to accept any challenge. Also, another important thing which is mostly ignored is that the graduates from the universities may lack skills and training, but we have graduates from the technical institutes who are well equipped with the required skills and training for specific sectoral jobs. These unemployed graduates from the technical institutes find jobs more quickly than the university graduates because of their skills and qualifications. Thus, in my opinion, the new ventures in the KP region enjoy a huge supply of skilled workforce. The scarcity of this workforce may prove a barrier for the nascent entrepreneurs otherwise.'* (P5)

The workforce mobility was also identified by the participants as having an impact on the entrepreneurial intentions of the aspiring entrepreneurs. As stated by one of the participants:

*'Well, I think the increasing number of graduate youths overcomes the non-availability issue of the right type of workers for the entrepreneurs. But at the same time, due to its proximity with the Punjab province, the KP region is at the advantage of utilising the*

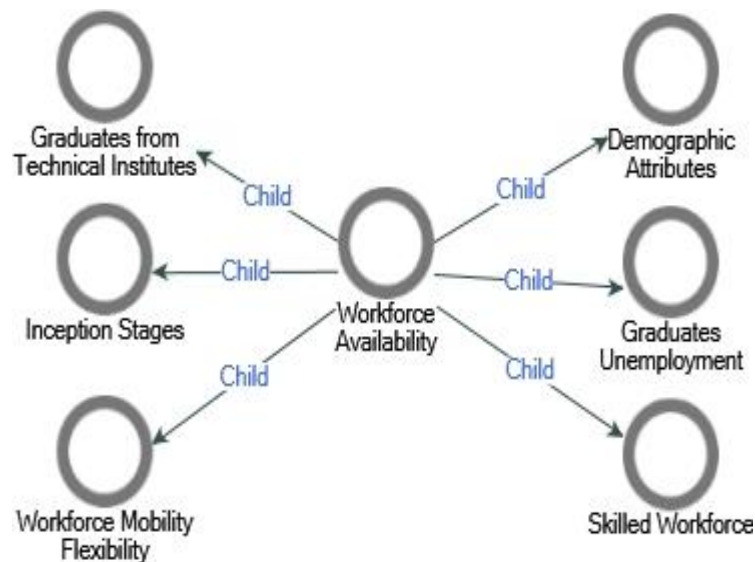
*skilled workforce from the Punjab area, which is flexible and mobile and which is more skilled/experienced due to the already developed industry in that part. In this sense, we have noticed that, even here in this remote district of SWAT, a huge amount of skilled labour belonging to the other parts of the country is working [here]. So, this flexibility and mobility on the part of the workforce is also helping the entrepreneurs.'* (P2)

Another participant added:

*'Well, I do not think the non-availability of the right type of labour locally could pose a problem for entrepreneurs in the KP region. It's because we are close to the Punjab province so, in the worst case, if the entrepreneurs do not find the skilled workforce [locally], hiring from there is a good alternative because of its mobile and flexible workforce.'* (P4)

As well as these comments by the participants about the workforce availability, which identified skilled workforce, large number of unemployed graduate youths, young workforce with formal education and the workforce mobility as the major workforce-related factors influencing venturing decisions, secondary data also commonly mentioned these themes. For example, various scholars (such as Greer et al., 2016; Block et al., 2018; Nystrom, 2021) posited that, in the initial stages of business inception, entrepreneurs face difficulties in recruiting the skilled and right type of workers. Similarly, Kiyani (2017) argued that skills mismatch sometimes poses the main constraint limiting entrepreneurial activities; therefore, the availability of labour with the appropriate skillset supports the entrepreneurs.

Figures 6.11 shows the qualitative data analysis (sub-themes) regarding the impact of the workforce availability on the SEIs.



**Figure 6. 11 NVivo Visual Map for the 'Workforce Availability' Construct**

Along with these pre-identified external environmental factors, the participants also identified another factor that is important to them with regard to the impact on SEIs. This factor is identified as the 'Law and Order Situation'. A discussion on this new factor along with a brief literature review is presented below.

#### **6.4.6 Law and Order Situation**

The Law and Order Situation (LOS) was identified to be significant in terms of its impact on the SEIs, not only by the interview participants but also by the majority of the students during the quantitative stage of the data collection. A review of literature in this regard was carried out in order to understand the phenomenon of Law and Order and its impact on influencing the entrepreneurial decisions of the aspiring entrepreneurs. Although the literature review identified that the distinctive literature specifically identifying the impact of the LOS on entrepreneurial intentions is still scarce, entrepreneurship during crises and post-crisis has gained scholarly as well as policy attention recently (Muhammad et al., 2016; Aldairany et al., 2018; Nabil and Zhang, 2019). These crises range from political and economic instability to war conflicts and natural disasters, such as geopolitical instability (Fahed-Sreih and Pistrui, 2012); entrepreneurial behaviour post-natural disasters (Shepherd and Williams, 2014); economic crisis (Santos et al., 2017); entrepreneurship and resilience (Monllor and Murphy, 2017); entrepreneurship through bricolage (Kwong et al., 2019); intellectual capital and resilience for entrepreneurs during turbulent times (Joseph et al., 2019); entrepreneurial preparedness in a context under continuous threat (Munoz

et al., 2019); entrepreneurship in crisis situations (Nabil and Zhang, 2020); and entrepreneurial resilience during the Covid-19 pandemic (Purnomo et al., 2021). Literature (such as Bozzoli et al., 2013; Williams and Vorley, 2017; Aldairany et al., 2018; Nabil and Zhang, 2020) suggests that the empirical work on entrepreneurship in uncommon circumstances such as conflicts, wars, economic and political instabilities, pandemics, disasters and terrorism, etc., is limited. These conflicts are categorised as external and internal conflicts; whereby external conflicts include war, cross-border conflict and foreign pressures while internal conflicts comprise civil coup and/or war threat, political or terrorism violence and civil disorder (ICRG, 2021). Further, narrowing down to the effects of conflictual situations on entrepreneurship, the literature suggests that the relationship between the conflict environment and entrepreneurial activity is still a relatively unexplored area (Bullough et al., 2014; Bruck et al., 2016; Muhammad et al., 2016; Aldairany et al., 2018; Joseph et al., 2020). Such a conflictual situation has been faced by Pakistan recently in the aftermath of the 9/11 attacks and the subsequent action of attacking Afghanistan (Muhammad et al., 2016). Again, the literature and empirical evidence on the impact of this conflictual situation on the entrepreneurial activities in Pakistan are limited (Noor et al., 2013; Muhammad et al., 2016). A brief background of this conflictual situation is given below.

In the post-9/11 scenario, Pakistan sided with the United States of America (USA) and its allies by joining their 'War on Terror' (Muhammad et al., 2016; Khan, 2017). Becoming an ally of the USA put Pakistan into conflict with local militant groups, leading the way to the surfacing of insurgency in many parts of the country including KP and Baluchistan provinces and the surrounding Tribal areas (Noor et al., 2013). The insurgency was started in 2005 by the Tehrek-e-Taliban Pakistan (TTP), who challenged the writ of the government in the SWAT district of KP province, whereby the public offices, educational institutions, bridges, police stations and tourists' spots were bombed. The TTP killed local elders and officers of the Law Enforcement Agencies (LEAs), and kidnapped businessmen to fund their violent acts (Muhammad et al., 2017). Gradually, they started to expand their area of command by occupying the adjacent districts of Malakand and Buner in the KP province and, by late 2008, all forms of terrorism including kidnapping, suicide bombing, target killings and extortion were common all over the country (Rashid, 2009; Mahmood and Bhutto, 2014). This deteriorated security condition created a 'law and order situation', even forcing people

to avoid any type of gathering (Zia-ul-Islam et al., 2018). A number of military operations in the KP and the adjoining tribal areas have been carried out to oust the TTP miscreants and other militant groups (Kwong et al., 2019). These military operations and certain other initiatives by successive governments have controlled the militants to a large extent, if not totally contained them (Raza et al., 2015). Although improvements in the LOS have been largely witnessed recently (Khan, 2017; Ahmed et al., 2018), the LOS still exists in the form of the continuous threat of terrorist attacks, kidnappings, extortion and target killings (Siddiqui, 2019).

A LOS arises when there is internal insecurity, threat of violence or actual violence arising due to a host of factors disturbing the ordinary conduct of life and business in a society (Khan, 2013). These factors may include religious/sectarian extremism, external aggression, internal disruptions, union strikes/boycotts, economic and social instabilities, and ethnic cleavages (Khan, 2017). Disturbing the LOS not only creates panic but also weakens the confidence level among the masses (Lafree and Dugan, 2007; Larobina and Pate, 2009; Zia-ul-Islam et al., 2018). Similarly, it also creates hurdles for socio-economic prosperity, political stability, developmental programmes and geo-strategic sustainability (Khan, 2013), along with reversing the development process (Bauer et al., 2016). The economic impacts of the worsening LOS include fewer exports, slow economic growth, fewer foreign direct inflows, decreased foreign investors' confidence, uncertainty in stock markets, increased poverty, and imbalances in the demand and supply of goods in the market (Shahbaz et al., 2013; Bauer et al., 2016; Khan, 2017).

Literature on the impact of conflictual situations on entrepreneurship found that a rise has been witnessed in the empirical work addressing entrepreneurship issues in conflict and post-conflict contexts (such as Bullough et al., 2014; Ciarli et al., 2015; Bruck et al., 2016; Muhammad et al., 2016; Aldairany et al., 2018; Doern et al., 2019). Bullough et al. (2014) carried out a survey of 272 Afghan men and women to empirically examine the effects of resilience, self-efficacy and perceived danger on the EIs. Their findings suggest that, although the perceptions of environmental danger inhibit individual EIs, even in war conditions, individuals develop EIs if they believe in their entrepreneurial abilities (self-efficacy) and are able to grow from adversity (resilience). Renko et al. (2020), in their study of six countries with varying degrees of fragility, found that under stable conditions a belief in one's entrepreneurial ability is

critical in forming the intent to start a business. Contrarily, under adverse conditions (as evident in fragile states) the ability to grow from adversity is significant. Most recently, Shah and Lala (2021) surveyed 400 entrepreneurs in order to examine the impact of entrepreneurial framework conditions on the success of entrepreneurs in a conflict zone in Kashmir. They concluded that entrepreneurial financing, government policies and socio-cultural norms significantly influence entrepreneurial success, while physical, commercial and professional infrastructure and services showed insignificant results.

Although empirical evidence on the direct impact of the LOS on entrepreneurial intentions remains elusive (Bruck et al., 2013; Aldairany et al., 2018), an impact of the consequential factors of a deteriorating LOS on entrepreneurial intentions and activities has been recognised empirically by the literature, such as limited human capital risk and damaged financial sector (Santos, 2003); political instability (Helbling et al., 2005); economic consequences, uncertainty and loss of investors' confidence (Sandler and Enders, 2008); insurgency (Noor et al., 2013); lack of a legal framework (Djip, 2014); economic growth and foreign investment (Raza et al., 2015); lack of formal institutions (Bayyoud and Sayyad, 2016); corruption (Krasniqi and Mustafa, 2016) and market dynamics (Shah and Lala, 2021). Gaibullov and Sandler (2008) quantified the impact of terrorism and conflicts in income per capita growth in 42 Asian countries over a certain period (1970-2004) and concluded that an additional terrorist incident per million persons reduces the gross domestic product (GDP) per capita growth by about 1.5%, thus showing a significant growth-limiting effect. Doern (2017), while drawing on qualitative interviews with owner-managers of 15 businesses affected by the 2011 riots in England, highlighted the importance of devising strategies that both utilise existing resources and invest in new resources in order to create resilience. Similarly, Joseph et al. (2019) carried out a study of six businesses involved in an asset replacement programme run by the United Nations Industrial Development Organisation (UNIDO) in Kirkuk, Iraq. They identified that security within the local economy (city-based) and access to local business resources were important for entrepreneurs to operate in a conflict zone. Jahanshahi and Zhang (2019), while carrying out a survey of 162 female entrepreneurs in a highly dangerous business environment (Afghanistan), concluded that psychological (internal locus of control),

social (family support) and environmental factors (perceived danger) interact together to shape the entrepreneurs' resilience.

In addition to the literature and empirical evidence provided above, the participants of this research also pointed out the significant impact of the prevailing LOS of Pakistan in general and in the KP region in particular. The research participants (both the students and the Directors/Heads of the Business departments of different universities) revealed that the LOS in recent years has led to various consequential factors that affect the entrepreneurial decisions of aspiring and nascent entrepreneurs. These factors include the increased cost of doing business, loss of investors' confidence, slowdown in economic growth, capital flight and sectoral impact. The most significant challenge faced due to the LOS in the KP region, as identified by the research participants, is the economic meltdown, – as revealed by the following comments:

*'The biggest challenge, in my opinion, which we have faced over the recent past due to the bad law and order situation is that of its impact on the economy of the KP region. The economic growth was slowed down by the wave of terrorism and insurgency which engulfed the whole region for almost 15 years. It's only for the last two to three years that the situation has improved and the economy of the province has started to grow up slowly again.'* (P1)

*'Well, if we speak of the consequences of the poor law and order situation due to terrorism witnessed by Pakistan in the last two decades, the first thing that comes in to mind is its economic impact. Along with the loss of nearly 75,000 lives of civilians and armed forces personnel due to this war on terror, the overall economic losses are estimated to be about 125 billion US dollars (USD) since 2001. The macro-economy of the country has suffered a substantial decline in exports and foreign direct investments.'* (P3)

*'If you are asking about the direct effect of the law and order situation on the students' intentions to start a business, then I would say that it's an overall environment which is affected by the general law and order conditions and among these environmental factors the most important is the economy. Obviously, when the economic conditions are not conducive, it will hold back the new entrants from venture creation.'* (P4)

The hesitation of investors due to the bad situation of law and order was also identified by the participants to have an impact on the economic conditions and ultimately on the entrepreneurial activities, as seen below:

*'One thing which I would like to mention is the confidence of investors. Deterioration in the law and order conditions due to conflicts, terrorism, insurgencies, etc., pushes the investors away from making investments in an economy, which also affects the economic growth. I would like to give an example of a Chinese firm which was working on a dam project in the southern districts of the KP region. Some of their engineers were kidnapped and later killed by the insurgents. This and many other such incidents shattered the investors' confidence to invest in the KP region.'* (P2)

*'The increased uncertainty [caused] by the terrorism and law and order situation results in the loss of investors' confidence, making them hesitant to invest; thus, hampering the economic growth to a large extent.'* (P5)

Another consequential factor of the LOS which the participants frequently identified as having an impact on the SEIs is the increased cost of doing business due to the worsening law and order situation in the wake of the recent wave of terrorism. As the participants stated:

*'Another impact of this worsened law and order situation, which I think is important in relation to entrepreneurial intentions, relates to the increased cost of doing business. Businesses' growth is severely affected by the increased cost of doing business, such as due to deteriorated law and order it is hard to find labour so the available labour or [people] who are willing to work in those situations will demand higher wages. Also, the terrorism incidents will lead to higher premiums of business insurance. So, in this sense I argue that the cost of doing business increases, which may deter the new aspirants from venture creation or at least make them wait for the conditions to get better.'* (P2)

*'Definitely, a bad law and order situation adds to the cost of doing business. Such as, the firms will have to spend more money on the security of their premises including guards and installation of CCTV in order to remain safe. These expenditures not only shrink the profits but also lower the returns on investments for the entrepreneurs.'* (P1)

Capital flight was also identified by the participants to be the result of the worsened LOS. One of the participants observed that:

*'In the wake of the worsened law and order situation, one of the biggest challenges we faced in the KP region was that of the capital flight, or also called capital outflow. In comparison to our province and the adjacent tribal districts, the law and order situation in the capital area of Islamabad and in the Punjab and Sindh provinces was relatively good. Therefore, the majority of the investors, businessmen and entrepreneurs shifted their businesses and manufacturing units to the areas deemed safer. This flight of capital to other areas badly affected the economy of the KP region, resulting not only in unemployment but also a reduction in revenue for the provincial government.'* (P6)

Another participant pointed out the human capital flight from the province as a consequence of the bad LOS. In his words:

*'Most of the people refer to capital flight while citing the effects of the worsening law and order situation, however they fail to mention the flight of human capital or more commonly known as brain drain. We have seen a number of high-ranking officials, doctors, consultants, professors and other professionals who left the KP region and preferred [to move] either to other provinces or even to foreign countries during this conflict. This human capital flight has deprived the KP province of some brilliant people who, in my opinion, would have made tremendous contributions to the uplift of this area.'* (P3)

Sectoral impact was also identified by most of the participants to be caused by the deteriorated LOS. The tourism and agriculture sectors, which are the main sources of employment and revenue for the government, were stated by the participants to be badly affected by terrorism and conflict in the KP region. As one of the participants mentioned:

*'You know, all this conflict started from the SWAT area, which is called the "Switzerland of the East" for its resemblance to the beauty, sight-seeing and tourism of Switzerland. All these northern districts of the KP province are heavily dependent on tourism. Therefore, the insurgency and terrorist activities badly affected the tourism sector as people avoided [visiting] these areas. Also, the military offensives and operations against the miscreants and TTP in these areas [gave] a big blow to the tourism sector, which deprived the KP province of its tourism revenue for many years, thus not only affecting the economy of the province but the whole country as well.'* (P4)

Another participant added:

*'The northern part of the KP province is a big tourist destination which attracts tourists not only from different parts of Pakistan but also from all across the world. Along with the natural beauty, these areas also offer a rich history and civilisation with many Buddhist spiritual sites. Thus, along with sight-seeing, these areas also offered cultural/heritage and spiritual tourism. According to one estimate, about 1200 hotels have been established only in the Malakand division, which employ about 50,000 individuals. Considerable damage to the tourism sector was inflicted by the conflict, with the closure of nearly all the hotels causing unemployment and loss of revenue, so much so that even the bridges, roads and motels were destroyed by bombing. This situation kept tourists away from these areas, causing a lot of damage to the tourism of the KP region.'* (P6)

Similarly, the effects of the terrorism and insurgency on the agriculture sector of the KP region were also highlighted by the participants, as stated below:

*'Well, agriculture is the main source of revenue in the KP and the adjacent tribal districts. People mainly rely on agriculture for their livelihood, growing mainly food items, fruits and tobacco. However, the terrorism has affected the fruit processing, marketing and transportation as the necessary infrastructure - road, cold/dry storages, processing units, etc. was blown up. This damaged the agriculture-based economy of the KP, rendering huge losses to the landowners, farmers, dealers and the government in its revenue. This whole scenario drew a picture of an environment which was not so good for the business community, let alone the new aspirants, all due to the worsened law and order situation.'* (P5)

Despite all these damages to the economy and the social and human costs of the terrorism, the majority of the participants pointed out the improvements witnessed in the LOS all across the country in the past three to four years. In the words of some of the participants:

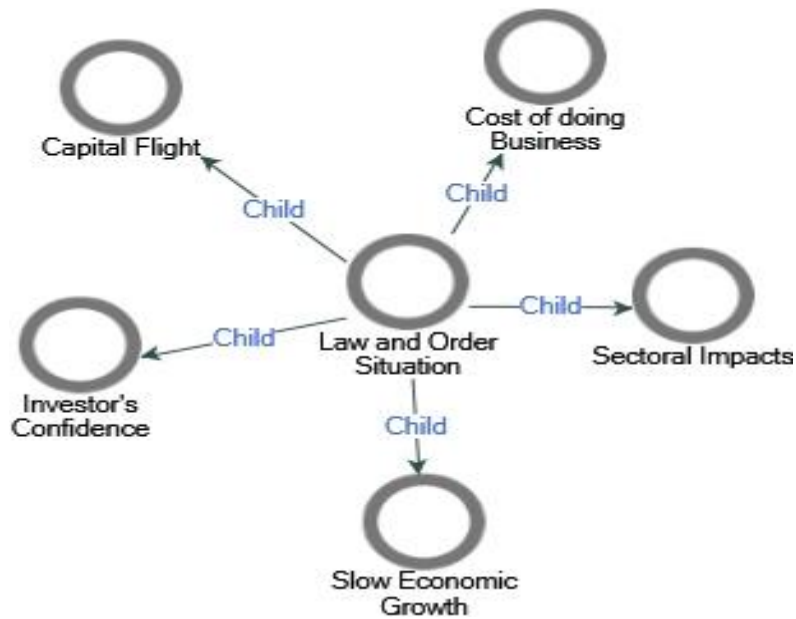
*'Well, the good thing is that we have seen improvements to the law and order situation in the recent past and we hope that this is a good omen for the economic and social uplift of the country.'* (P1)

*'The improved conditions of law and order over the past few years are expected to boost the local as well as the national economy and open the way for foreign investments.'* (P3)

*'The recent betterment to the law and order situation has become possible only due to the public support and the government's initiatives. This will help in the industrialisation and economic prosperity along with the social and cultural developments.'* (P6)

From the above discussion on the LOS, it can be concluded that, although the LOS does not directly impact the SEIs, the consequences of worsened law and order do have an impact on the entrepreneurial intentions and activities. These consequential factors include economic meltdown, political instability, capital flight, sectoral damages and increased costs of doing business. Also, the recent improvements to the LOS are expected to contribute to the socio-economic development, which will further the development of entrepreneurial activities in the KP region.

Figures 6.12 shows the qualitative data analysis (sub-themes) regarding the impact of the law and order situation on the SEIs.



**Figure 6.12 NVivo Visual Map for the 'LOS' Construct**

Based on the aforementioned findings, the following figure, Figure 6.13, attempts to summarise the case study interview findings related to the external environmental factors.

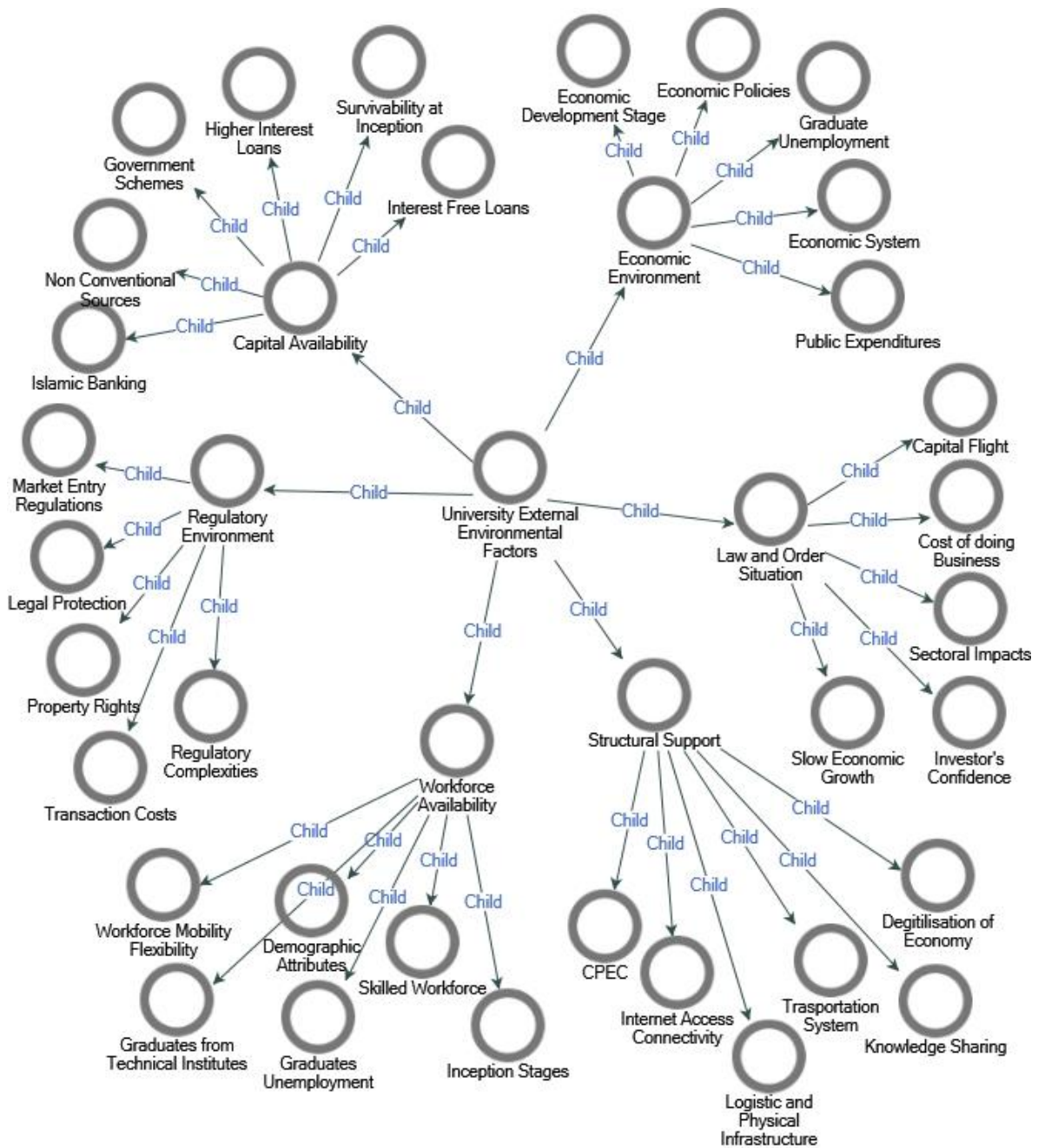


Figure 6.13 Summary of Content analysis of External Environmental Factors

### 6.5 Participants' Explanations for the Unaccepted Hypotheses

As mentioned earlier, explanations were sought from the interviewees about the four hypotheses that were insignificant as revealed by the quantitative data analysis and were thus excluded from the final model. These four hypotheses related to the impact of EE, SF, ER and GP. The detailed account of these constructs is given below.

### 6.5.1 Entrepreneurship Education

Regarding the Entrepreneurship Education construct, participants were asked if they considered it as one of the significant factors influencing Students' Entrepreneurial Intentions. The majority of the participants did not confirm this notion, due to a number of reasons. Most of the participants identified the universities' approach towards EE as the reason for the lack of student's interest in entrepreneurship, as revealed by the following comments:

*'Entrepreneurship Education is mostly aimed at inculcating knowledge, motivation, skills and capabilities to create a venture; however, in Pakistan the formal business education fails to inculcate these attributes in the university students. It only equips students with knowledge that makes them jobseekers rather than job creators.'* (P1)

*'In my opinion, the real problem is that we still consider EE as a part of business studies, where most of the universities hardly offer any entrepreneurship-related module in their whole business-related programmes, let alone specialised modules aimed at entrepreneurship. This situation makes it difficult to foster entrepreneurial spirits in the students.'* (P3)

The lack of a coherent policy framework for the development of EE at universities was also identified by the participants as one of the reasons for students' lack of interest in entrepreneurship, as seen below:

*'EE is not at the core of our national education policy and I think, until we do acknowledge the contribution it plays in the economic development of a country, we will hardly be producing job creators. As the Scandinavian countries have acknowledged the role of EE in their education policies by including entrepreneurship even in their school-level curriculum, therefore, we can see a low level of unemployment in those countries. Although recently a number of initiatives have been taken by HEC in this regard, but I think it will take time to realise the importance of EE.'* (P2)

Similarly,

*'Although, for the last decade, we have noticed that stakeholders in the education sector including HEC and other policy agencies are striving to inculcate entrepreneurial behaviour and skills among university graduates, so far they haven't succeeded in their attempts to develop the requisite skills needed to impart entrepreneurial attitudes among students. And I think it's due to the lack of a coherent policy framework that establishes the role of all respective stakeholders in their specialised fields.'* (P5)

The general mindset of the society towards salaried jobs was also pointed out by the participants as one of the reasons for the students' reluctance to choose entrepreneurship as a career. As one of the participants said:

*'Generally, it is the mindset of the society as a whole to have a preference for salaried jobs as students on graduating from the universities start seeking jobs instead of creating their own ventures. Even in salaried employment, public jobs are preferred instead of working for private firms; it's mainly due to the job security it offers. Also, in [terms of] government jobs, [they are] generally believed to [involve] less work.'* (P6)

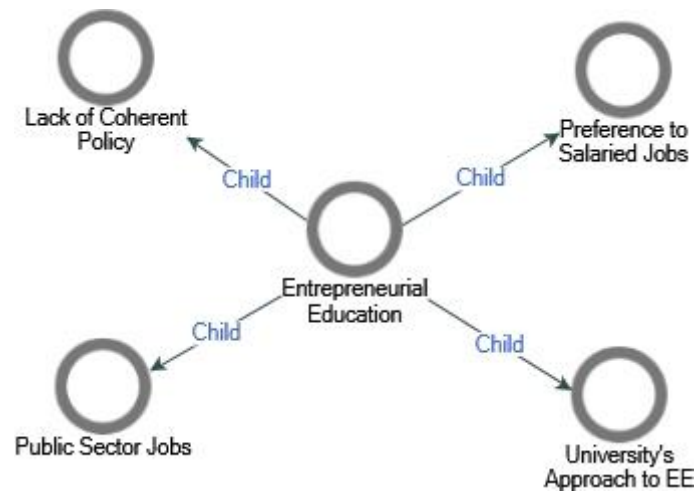
The same point was raised by another participant in these words:

*'Generally, the students from a non-business family background are being criticised for wasting their academic learning by engaging in business venturing. You know, in our society education is considered as a rare achievement; therefore, families expect their educated members to get engaged in career jobs rather than taking risks [in] business venturing. Such a mindset also undermines the development of potential entrepreneurial abilities in the students.'* (P4)

The qualitative data collected from the open-ended survey questions also revealed the fact that the students find it a safer and easier option to seek a job rather than starting their own business. This may be due to the fact that the local youth, particularly students, are generally dependent on their parents and, in order to lessen the burden on their families, they start looking for a job soon after graduation.

As well as these comments about the universities' approach towards EE, the lack of a coherent policy framework and the general mindset of society were frequently highlighted by most participants as important reasons for the low impact of EE on SEIs; these reasons were also commonly mentioned in the secondary data. For example, the GUESS (2018) also identified that many students in Pakistan are not able to convert ideas into start-ups after graduation; therefore, universities should help students in developing understanding in and practising the knowledge, skills and techniques of doing business by focusing on EE.

Based on the above discussion, the following figure shows the qualitative data analysis (sub-themes) regarding the impact of the EE on the SEIs.



**Figure 6.14 NVivo Visual Map for the 'Entrepreneurship Education' Construct**

### 6.5.2 Supportive Faculty

With regard to the Supportive Faculty construct, participants were asked if they considered it to have a significant impact on the Students' Entrepreneurial Intentions. Most of the participants confirmed that faculty members can be role models for students in developing their entrepreneurial inspirations. However, in Pakistan, as most of the faculty members are not familiar with the concepts of EE, therefore, they hardly impact students' entrepreneurial spirit. In the words of one of the participants:

*'In my opinion, although the concept of EE has been emerged for over a decade now in Pakistan, however, teaching it as a subject and understanding it as a learning outcome are still key issues. In principle, most of the teachers/educators are not familiar with the EE concept, nor do they acknowledge the various pedagogical options attached to it.'* (P2)

Lack of entrepreneurial experience on the side of faculty members was also identified to have an impact on the students' entrepreneurial inspirations, as stated by a participant:

*'The EE at universities is mostly criticised for being too theoretical. As such, the faculty also lacks entrepreneurial experience, and this inhibits entrepreneurial insights among students to influence their career choice. I reckon an entrepreneurially experienced faculty will help in implementing experiential learning [learning by doing] as they will assume the role of a real entrepreneur. However, this requires guidance and coaching sessions for the faculty members in order to get them in a better position to adopt experiential learning.'* (P1)

Similarly, the lack of support to the faculty members was pointed out by another participant. In his words:

*'It's a major challenge for the teachers to deliver EE, because along with instructor they also play an important role of educational leaders as well. The implementation of EE is affected by the assistance available to the faculty members at universities, how they are supported through resources, time, connections with industry, etc. As such, the lack of such support to the faculty also limits their vision towards EE.'* (P4)

Also, another participant mentioned:

*'You know, like European countries, the HEC in Pakistan should also build a strong pipeline of entrepreneurial educators by providing training to teachers, streamlining conventional teaching with EE, and encouraging the development of specialised Masters and doctoral programmes in entrepreneurship.'* (P3)

Another participant highlighted the benefits of entrepreneurial training for the faculty members as follows:

*'Specialised training programmes for teachers are needed in order to foster the development of their entrepreneurial skills and attitudes, increase their understanding and awareness of EE, and equip them with the knowledge to implement EE pedagogy.'* (P6)

Additionally, another participant highlighted the issue as follows:

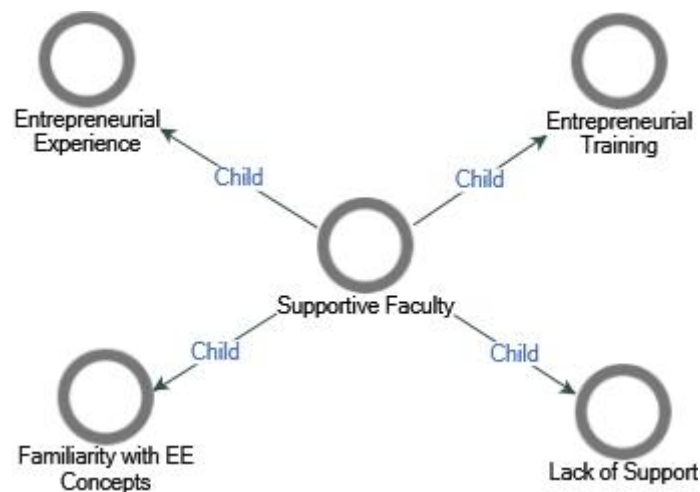
*'The role of university and lecturers is crucial in promoting SEIs as the students are mostly inexperienced and hesitate to take risks [of new venture creation]. Therefore, mentoring, orientation and understanding of EE on the part of faculty members is critical for motivating and promoting the spirit of entrepreneurship among students.'* (P5)

The qualitative data collected from the open-ended survey questions also revealed the fact that the students find the faculty members to be lacking entrepreneurial exposure. The students urged the need for more mentoring and guidance from the teachers in order to foster an entrepreneurial mindset among them.

As well as these comments by the participants about the need for a Supportive Faculty at universities, which identified lack of entrepreneurial experience among the faculty members, lack of support and the need for training as important factors in developing the faculty's entrepreneurial competencies and commitment, secondary data also

commonly mentioned these themes. For example, Abou-Warda (2016) outlined lecturers' skills, value attitudes towards EE, their commitment and integration of academic practice with practical experience as the main success factors for building a strong pipeline of entrepreneurship educators. Ghina et al. (2014) also addressed the need for effective learning and institutional support for entrepreneurial educators within a university context. Moreover, scholars (for example Birdthistle et al., 2007; Isaacs et al., 2007 and Tumasjan and Braun, 2012) have also claimed that enterprise-related teacher training has a positive effect on EE practices.

Based on the aforementioned empirical findings, the following figure, attempts to summarise the case study interview findings (sub-themes) related to the Supportive Faculty theme.



**Figure 6.15 NVivo Visual Map for the 'Supportive Faculty' Construct**

### 6.5.3 Entrepreneurial Resources

With regard to the Entrepreneurial Resources construct, participants were asked if they considered them to have significant impact on the SEIs. Most of the participants confirmed that, although different types of resources at universities are deemed necessary for the development of student entrepreneurship, in Pakistan, as most of these entrepreneurial resources are lacking or are not utilised effectively, they are hardly having an impact on students' entrepreneurial spirits.

One of the reasons cited by the participants was the scarce funding to provide these entrepreneurial resources at the universities, as stated by one of the participants:

*'I know these different entrepreneurial resources like incubators, seed funds, venture financing, etc., are important. But the problem with us is lack of funds as most of the universities in the KP, or even I would say all over the country, are reliant on government funding, which is hardly enough to meet the salaries and other overheads, let alone for use on these resources.'* (P1)

P3 noted:

*'Yes, we reckon that entrepreneurial resources such as incubators, start-ups have their impact on the students' entrepreneurial intentions but the challenge here is that universities are struggling financially; therefore, they are not in the position to allocate more funds towards these resources. But the good thing is that there is an incubator established here in Peshawar with the collaboration of the federal government, which is a good step towards the development of entrepreneurial culture in the province.'* (P3)

Moreover, another participant added that:

*'The importance of incubators at universities cannot be undermined as these business incubators have their impact on the economic growth by generating, establishing and activating small enterprises in job creation, revenue generation and economic development, but here in Pakistan universities don't have many resources to establish these incubators. However, the government has established incubators in four major cities with a public-private partnership.'* (P4)

This lack of funds at the universities to support entrepreneurial activities also led to shortages of seed funding, which the universities mostly provide to their students who have an inspiring idea so that they can turn it into reality (i.e., business creation).

Another reason pointed out by the participants relates to the cultural aspects of the society, whereby the funds for starting/establishing a business are mostly provided by family members or friends. Thus, the students, instead of relying on bank loans, venture capital or seed funding, prefer to arrange finances from their family, as mentioned by one of the participants:

*'Well, I would say that, instead of going for seed funding or venture financing, most of the entrepreneurs seek/arrange funds from family members or friends. The culture of KP is such that here the joint family system is still strong, and people are mostly helpful towards each other; therefore, they would extend a helping hand in such cases of venture creation or other tasks.'* (P5)

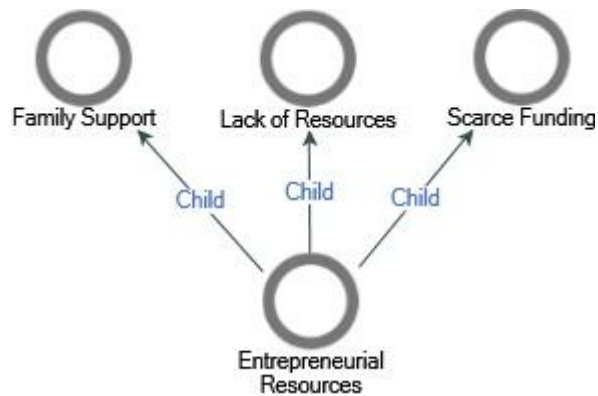
Another participant observed the following:

*'Family support also takes the form of capital availability to the aspiring entrepreneurs, since funding availability can be a major barrier for business creation, development and survival. However, family structure in KP is still strong and family members sometimes provide the required finances when other sources are unavailable or difficult to access.'* (P2)

These comments by the participants about entrepreneurial resources at universities identified the universities' lack of funding for establishing incubators, seed funding and venture financing, which does not have a significant impact on the SEIs. Along with these comments, secondary data also commonly mentioned these themes. For example, Klyver and Schenkel (2013) and Shirokova et al. (2018) found that seed funding (university financial support) has a negative impact on the scope of students' start-up activities. Similarly, literature (such as Audretsch et al., 2007; Minniti, 2008; Spigel and Harrison, 2017) also indicated that failed government-backed venture support programmes suggested that the presence of entrepreneurial resources, e.g., investment capital, alone does not guarantee entrepreneurial success.

Also, the secondary data identified family support as an alternative for overcoming inspiring entrepreneurs' financial needs. For example, Sirmon and Hitt (2003), Fairlie and Robb (2008) and Dana et al. (2020) noted that, as family capital can be quickly mobilised, has low transaction costs and can be easily transferred across generations, therefore, it is preferred over other sources of capital in societies where family bonds are strong.

Figure 6.16 shows the qualitative data analysis regarding the impact of Entrepreneurial Resources on SEIs.



**Figure 6.16 NVivo Visual Map for the 'Entrepreneurial Resources' Construct**

### 6.5.4 Government Policies

With regard to the Government Policies construct, participants were asked if they considered them to have a significant impact on the SEIs. Most of the participants did not confirm this notion, for a number of reasons. The majority of the participants identified the inconsistency in government policies as the main reason for their insignificant impact on the SEIs. In the words of some of the participants:

*'Well, in my opinion, the major reason is the instability in government policies whereby we have seen that, after every five years, a different party is elected to form a government. And, in order to undermine its political opponents, the incumbent government abandons policies pursued by the previous government. This inconsistency in government policies not only erodes the public trust in the government but also casts doubts on any serious attempts by successive governments in the future.'* (P1)

*'You know, every five years a new government is elected, and it has been noticed that every successive government, for gaining political mileage, quashes the policies of the previous governments, this creates a gap in the public's trust in government initiatives. I would like to give an example, that the KP province was previously ruled by the ANP [Awami National Party] they were [in a] coalition government with the PPP [Pakistan People's Party] at federal level. This led the ANP to secure more funds for the province, which they spent on the promotion of higher education in the province by establishing eight new universities in their five-year tenure. The new provincial government by PTI [Pakistan Tehrek-e-Insaf] was not having good relations with the federal government and thus struggled financially to run the government smoothly. As a result, they had to stop the majority of funding to the universities, thus making the universities face financial crisis. So, this inconsistency in government policies creates trust issues not only with the universities but [also with] almost every other public department.'* (P3)

*'This inconsistency in government policies also decreases the likelihood of engaging in entrepreneurial activities. The main reason is the uncertainty about the policies and*

*their implementation. The big challenge which arises is the continuation of these policies, as most of these policies lack a timeframe and, with the new government, most of these policies are abandoned. I can cite an example, the previous ANP government had an entrepreneurship development programme for young people name 'Khapal Rozgar Scheme' [Own Business Scheme], which was stopped by the current PTI-led government. So, I think this non-continuation of policies is also one of the reasons for the insignificant association of government policies with SEIs.'* (P5)

Along with the inconsistent government policies, the bureaucratic hurdles and other administrative procedures were also pointed out by the participants as the reasons that undermine any government initiative towards the development of entrepreneurship in the KP region. As stated by one of the participants:

*'Any effort by the government towards the development of entrepreneurship is excessively marred by the bureaucratic procedures and administrative processes, such as even establishing a new firm involves lengthy processes, which discourages the students [from starting] their own business.'* (P6)

P4 stated that:

*'On the other side, besides the inconsistency in government policies, I think the bureaucratic processes are so costly and lengthy that [this] keeps the potential entrepreneurs away from pursuing an entrepreneurial career. Again, as there is a lack of coordination between these different public departments which are involved in the registration of the business, therefore this involvement of multi-departments opens a way for bribery/corruption. I would like the government machinery to explore in this regard and try to provide all services under one roof for the aspiring entrepreneurs.'* (P4)

Along with the inconsistency in the government policies and the complex bureaucratic procedures, another reason mentioned by the participants was the government's taxation policies. Although governments are supposed to provide incentives and tax relief for the development and growth of new ventures, in the case of Pakistan the costs of business start-up procedures are high enough to discourage aspiring entrepreneurs. As one of the participants observed:

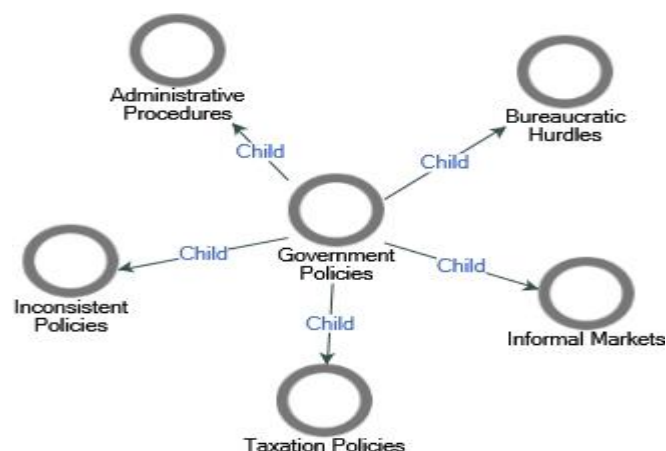
*'Not only are the initial costs of starting a business high but also the time required to start a business discourages the nascent entrepreneurship. Also, the tax incentives and trade rules and regulations are [only] available for a short time, mostly a year or two. These, I think, should be long-term-based, which will give the new entrepreneurs more time to grow, instead of worrying [about] the government taxes and other regulations after a short period of time.'* (P6)

Another participant drew attention towards the emergence of informal markets due to higher taxation and strict regulations:

*'I would say that the government policies also subdue entrepreneurship development in a way that the higher taxation, complex bureaucratic procedures and strict labour laws draw entrepreneurs away from working in formal markets. This in a way encourages informal markets where the firms are not registered and thus causes the government a loss in its taxation and revenue targets.'* (P2)

As well as these comments by the participants about the government policies, which identified inconsistent policies, bureaucratic procedures, lengthy process of starting a business, lack of incentives for new ventures, higher taxation and labour laws as discouraging for people wanting to start a business, secondary data also commonly mentioned these themes. For example, Shaikh (2012) claimed that none of the efforts by entrepreneurs and start-ups in striving to be competitive in Pakistan yields the desired results as the entrepreneurship here is prejudiced by government policies, legislation and regulations. Similarly, Shabib-ul-Hasan (2012) concluded that successive governments in Pakistan have largely not been able to develop an entrepreneurial mindset among the youth due to socio-economic instability along with poor administrative strategies. In addition, Klapper et al. (2006) and Cala et al. (2015) pointed out that the bureaucracy in organisations discourages entrepreneurship as these bureaucratic barriers hinder market entry.

Figures 6.17 show the qualitative data analysis regarding the impact of Government Policies on SEIs.



**Figure 6.17 NVivo Visual Map for the 'Government Policies' Construct**

## **6.6 Revision of the Research Framework**

In line with advice from Caracelli and Greener (1997), Creswell and Clark (2017) and Doyle et al., (2009), a follow-up explanatory design of the mixed method research was used to refine the conceptual framework. This design is characterised by having one dominant method (quantitative phase), whereas the other data set (from qualitative phase) provides a secondary or supportive role (Doyle et al., 2009). As such, the researcher identifies specific quantitative findings, such as unexpected results, outliers or differences between groups that need further exploration using qualitative methodology for the refinement of the research framework/model (Creswell and Clark, 2017). Therefore, building on quantitative results (see Chapter 5), the research framework was further developed using qualitative data (interviews).

The detailed interviews with key stakeholders (i.e., Directors/Heads of the Business Departments of the universities in the KP region) and the secondary data gained from public documents, in addition to the quantitative analysis in Chapter 5, enabled a better understanding and defining of the key issues affecting the SEIs in the KP region. As stated earlier, the quantitative data was used to test the proposed research model and to confirm the research hypotheses, while the qualitative data was used to provide further confirmation of the research model and hypotheses and to improve the understanding to the findings from the quantitative phase. Additionally, the qualitative data analysis also identified two new factors (U-I-G Collaboration and Law and Order Situation), which indicated influence on the SEIs. Data from both aspects of the empirical work were incorporated into the final research framework, presented in Figure 6.18.

It can be seen from Figure 6.18 that the qualitative data analysis has provided a much clearer picture of the reality of the university's environment and its impact on the SEIs in Pakistan. Moreover, the integration of quantitative and qualitative data has extended our understanding and provided valuable insights regarding how the key stakeholders (students and teachers) perceive different factors from the university environment that have been identified as important for developing entrepreneurial aspirations among the students in Pakistan. In short, as suggested by Creswell (2013), the findings from the semi-structured interviews have provided additional support as well as revealing important insights underpinning further interpretations of the quantitative data.

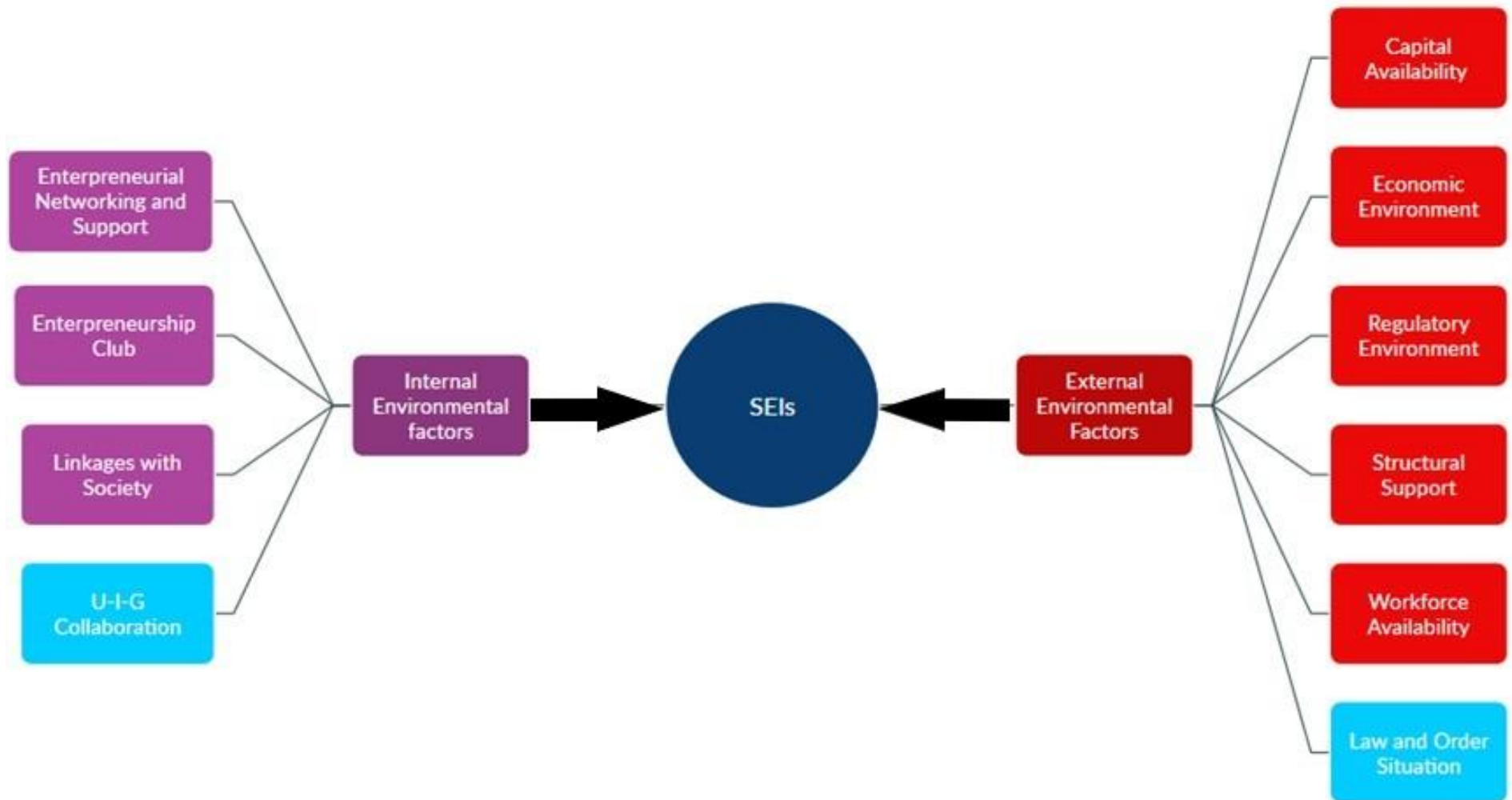


Figure 6.18 Final Research Framework

## **6.7 Summary**

This chapter has presented the overall procedures that were applied in collecting and analysing the data for this case study research. It has also provided justifications for all the steps taken in the sample selection, key participants, data collection sources and the quantitative analysis approach used for this study. Reporting on the qualitative phase of the study, this chapter complements the findings from the quantitative phase, by exploring the perceptions of key stakeholders from the university environment i.e. the Directors/Head of the business departments of the universities in the KP region of Pakistan. Since the purpose of the semi-structured interview exercise was to explore specific aspects that had already been highlighted in the questionnaire survey, six interviews were believed to be sufficient.

In relation to the interviewees' perceptions of the factors influencing the entrepreneurial intentions of students in Pakistan, it was seen that the majority of interviewees confirmed the findings of the questionnaire, although differences were noted. Interviewees' explanations were also sought about the outcomes of the research hypothesis testing, irrespective of whether these hypotheses were accepted or rejected. Finally, to complete the picture and to give a full understanding of the phenomenon under consideration, the interview findings were incorporated in the final research framework (Figure 6.18) to provide a fully consolidated framework for understanding the phenomenon of the impact of university environment on the SEIs in Pakistan.

The following chapter presents a comprehensive discussion on the analysis of the results and findings presented in the previous chapters in the light of the literature reviewed in Chapter 2.

# **Chapter 7: Discussion**

## **7.1 Introduction**

This chapter provides an interpretation of the research findings (both quantitative and qualitative) presented in chapters 5 and 6. The discussion links these findings to those from prior research work considered in the literature review (chapters 2 and 3) and concentrates on how these findings provide answers to the research questions, and, in turn, meet the objectives of the study. Each section in this chapter deals with one of the main research objectives presented in Chapter 1.

The structure of this chapter is as follows. First, the population and sample issues are presented and, second, scale refinement is considered. Third, the findings of the important university environmental factors are reviewed and compared with previous research. Having presented the findings in respect of all the objectives, the chapter ends with a short summary.

## **7.2 Summary of Data Collection and Research Scale Development/Refinement**

The research was designed to collect data from a large sample of the Master's-level business students from a developing country (Pakistan) to develop the theoretical framework (Figure 3.1 on page 71) and explore how it corresponds with reality in developing countries, investigating the importance or local effects of the component factors. This study was conducted in both the public and private universities in the KP region of Pakistan. The total population of the Master's-level business students is approximately 5000, who are studying at different levels of their degree. In line with the advice from Wilson (2010), Taherdoost (2016) and Davis (2018), a random sampling technique was employed whereby the cluster sampling method was used for data collection. Of the 490 questionnaires distributed, 405 were returned, which shows a high response rate of 83%. Fincham (2008) is of the opinion that a high response rate indicates that the respondent population is motivated, and the survey is well executed. However, only 386 complete questionnaires had no missing values and so outliers were used. A large enough sample was applied to represent the population and underlying structure as the researcher wanted to examine the reliable correlations and prediction power of the factors (Hair et al., 2004; Tabachnick and Fidell, 2019). Thus, this study provides a substantive representation of the total population of the Master's-level business students at the universities in the KP region of Pakistan. On

the other hand, for qualitative data, six key stakeholders (Directors/Head of the business departments of the universities) were interviewed. Samples in qualitative research are small in order to support the depth of the case-oriented analysis and are selected by virtue of their capacity to provide rich information relevant to the phenomenon under investigation (Vasileiou et al., 2018).

Based on previous work, research scales were operationalised in this study. In order to fit the current context and purpose of the research, proper modifications were made. General and biographical information about respondents was elicited in Part 1 of the questionnaire. Part 2 extracted participants' views about factors from both the internal and external environments of the universities in the KP region of Pakistan. Only previously validated items in Part 2 are used, which were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The following table, 7.1, provides a summary of the number of items and previously validated sources of the questionnaire.

<b>Construct</b>	<b>Items</b>	<b>Adopted and Adapted From Source(s)</b>
<b>Entrepreneurship Education (EE)</b>	5 Items	Luthje and Franke (2003); Miranda et al. (2017); Potishuk and Kratzer (2017)
<b>Entrepreneurship Support Programme (ESP)</b>	3 Items	Kuttim et al. (2014); Hytti and O'Gorman (2014)
<b>Entrepreneurial Networking (EN)</b>	5 Items	Mueller (2018); Davidsson and Honig (2013); Kuttim et al. (2014)
<b>Supportive Faculty (SF)</b>	3 Items	GEM (2015)
<b>Entrepreneurship Club (EC)</b>	4 Items	Othman et al. (2012)
<b>Entrepreneurial Resources (ER)</b>	3 Items	Kuratko et al. (2005); Saeed et al. (2014); Miranda et al. (2017)
<b>Linkages With Society (LWS)</b>	3 Items	Fielden and Hunt (2011); Walter and Doshe (2012)
<b>Capital Availability (CA)</b>	4 Items	GEM (2015); Miranda et al. (2017)
<b>Government Policies (GP)</b>	5 Items	Audretsch et al. (2007); Mwasalwiba et al. (2012)
<b>Regulatory Environment (ER)</b>	4 Items	Chemin (2009); Kim and Li (2014); GEM (2015)
<b>Economic Environment (Eco)</b>	3 Items	Ali and Junaid (2016)
<b>Structural Support (SS)</b>	4 Items	Yurtkoru et al. (2014); Begley et al. (2005)
<b>Workforce Availability (WA)</b>	4 Items	Baker et al. (2005); Choo and Wong (2006)

**Table 7.1 Sources of Items and Constructs used for the Study**

These factors have been found to affect the entrepreneurial intentions of students in different developing countries over the years (such as in: Kuttim et al., 2014; Saeed et al., 2015; Karimi et al., 2017; Perez et al., 2017; Wibowo et al., 2018). Hence, based on contextual similarities, these factors were theoretically assumed to have such an influence on the EIs of students at universities in the KP region of Pakistan. To examine the impact of these factors on the SEIs, SPSS 24 and AMOS 24 software

were used to analyse the quantitative data and the qualitative data was analysed by employing NVivo software.

Based on the literature review and conceptual framework, initially 50 items were observed to measure the effect of key factors from the universities' internal and external environment on the SEIs (see Table 7.1 above). The research scale for the study, as mentioned earlier, was developed primarily on the basis of conceptual literature. Therefore, it was important to ensure the operationalisation and validation of the study concepts. For this purpose, a pilot study was carried out for the development and refinement of the research scale. An important aspect in scale development and refinement is assessing validity, which refers to the ability of a construct to measure what it is intended to measure (Golafshani, 2003; Kumar, 2014; Surucu and Maslakci, 2020). In the pilot study, content and face validity were assessed whereby participants were asked to give their opinions about the scale items (for details see section 4.6.6 on page 101). In line with advice from Berteau and Zait (2013), the adopted scales were subjected to two further rounds of data reduction, i.e. exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In addition, to ensure the operationality and validity of the scales, several statistical tests such as Cronbach alpha test ( $\alpha$ ), convergent validity (CV), discriminant validity (DV), composite reliability (CR) and average variance extracted (AVE) were also used. This resulted in the development of theoretically and operationally valid and reliable scales upon which hypothesis testing was also performed. However, some inferences were made on the scale development and refinement issues which are discussed as follows.

The dimensionality of almost all 13 constructs was consistent with those reported in the literature and presented in the preliminary conceptual framework (Figure 3.1 on page 71). However, only 12 factors were extracted through the exploratory factor analysis method. In line with the advice from Stamatis (2002), the researcher extracted 'take what the data gives you' to test the conceptual scales. Variables related to the 'Entrepreneurial Support Programme' (ESP) factor and 'Entrepreneurial Networking' (EN) factor loaded on the same factor or group of predictors. After careful examination of all variables loaded in this group, the researcher named this new construct 'Entrepreneurial Networking and Support' (ENS). In addition, the rest of the 11 factors revealed that the variables were related more strongly to their own factors than to

another factor, thus showing conformity with the hypothesised constructs of this study. The results of factor analysis can be found in Table 5.21 on page 145. However, it is worth mentioning that variables with extraction values below the recommended factor loading cut-off value of 0.6 were excluded from any further analysis (Pallant, 2010). The final 12-factor solution with 45 variables was found to explain 68.17% of the variance in the dataset. The value of Cronbach’s alpha for all factors was found to be greater than 0.70, thus confirming the reliability of the final constructs (see Table 5.24 on page 149).

Whilst the possible underlying factor structure based on the observed variables was determined by EFA, the derived factor structure was further verified and confirmed by employing CFA/SEM. It also helped in assessing the construct validity and composite reliability for the researched factors. CFA/SEM was subsequently applied in two steps: the first step involving confirmation of the EFA results, and a check on the related validity and reliability, and the second, the testing of the research assumptions concerning the causal relationships among these factors. During this process, although 12 factors were loaded through EFA, only eight of them (ENS, EC, LWS, CA, RE, Eco, SS and WA) were empirically shown to be significant (see Table 5.33 on page 165). The final eight validated factors accredited by CFA/SEM are listed below.

	<b>Construct (Abbreviation)</b>	<b>Number of Items retained</b>
<b>Internal Environmental Factors</b>	Entrepreneurial Networking and Support (ENS)	5
	Entrepreneurship Club (EC)	2
	Linkages with Society (LWS)	2
<b>External Environmental Factors</b>	Capital Availability (CA)	2
	Regulatory Environment (RE)	3
	Economic Environment (Eco)	2
	Structural Support (SS)	3
	Workforce Availability (WA)	3

**Table 7.2 Final Factors Resulting from CFA/SEM**

The following sections discuss each of these factors and their associated themes and provide an explanation of how the research objectives were achieved and the research questions were answered.

### **7.3 Achievement of Study Objectives**

The main aim of this research, as mentioned in Chapter 1, is to generate insights into the impact of the university environment on the EIs of students. The achievement of this research aim has been through systematically addressing the research objectives, as highlighted within the subsections presented below.

#### **7.3.1 Research Objective 1**

As outlined in Chapter 1, the first research objective aimed to identify the different internal environmental factors in the form of university offerings which affect the entrepreneurial intentions of the students, with a specific focus on the KP region of Pakistan. the following research question was formulated.

##### **Research Question 1:**

“What internal university environmental factors affect SEIs?”

To answer this question, seven factors from the internal environment in the form of entrepreneurial offerings were assumed to have a direct influence on the SEIs. However, two factors (ESP and EN) were merged during the EFA stage to form a new factor, named ‘Entrepreneurial Networking and Support’ (ENS). Out of the resultant six factors, three factors (ENS, EC and LWS) were empirically proved significant while the other three factors (EE, SF and ER) were found to have no significant influence on the entrepreneurial intentions of the students in the Pakistani context. All these factors are discussed in the following sub-sections.

##### **Factor One – Entrepreneurship Education (EE)**

Entrepreneurship Education includes both formal and informal education that equips the student with functional knowledge and the ability to build up the attitude and vision required to become an effective entrepreneur (Othman et al., 2012a; Gautam and Singh, 2015). The collapsed mean score for the five observable variables used to measure the EE factor was 3.58, reflecting agreement among respondents on this factor’s variables. This result shows that most survey participants are in agreement about the EE at their universities in terms of courses, project work, conferences and workshops.

The EFA results revealed that all five measurement items related to EE loaded on factor three and were highly correlated to each other. Moreover, factor three (EE) alone explains 4.47% of the total variance in the data and the reliability of this construct ( $\alpha=0.79$ ) was adequate (Table 5-10). Additionally, CFA results confirmed that the EE construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). EE was found to influence students' intentions to engage in entrepreneurial activities in several SEI-related studies (such as Peterman and Kennedy, 2003; Souitaris et al., 2007; Gerba, 2012; Zhang et al., 2014; Potishuk and Kratzer 2017; Yasir et al., 2019; Boubker et al., 2021). However, the results of the path measurement coefficients (Table 5.19) revealed that the causal path between the EE and SEI was insignificant ( $p>0.05$ ) and thus provided no support for this assumption. As the beta value was negative and  $p>0.05$ , these results surprisingly imply that the EE construct is not a significant positive predictor of the entrepreneurial intentions of students in the Pakistani context.

The qualitative findings provided further support for these positions. Indeed, most participants referred to the societal and cultural aspects where salaried jobs are much more preferred, particularly government sector jobs, due to the perceptions of 'job-security'; 'less work' and 'guaranteed pension when retired'. Similarly, society places higher value in an individual with a government job instead of one running a business. The interviewees further explained that the universities' approach towards business education is aimed at general management studies and no specific attention is given to EE. Therefore, the formal business education provided to students in Pakistan fails to inculcate entrepreneurial attitudes among the students. Likewise, the lack of a coherent policy framework for the development of EE in the universities was identified by the interviewees. The general mindset of the society was also held responsible for the insignificant influence of EE on SEIs. An education is considered a rare achievement in Pakistani society as it involves high costs which are borne by the parents/family. Therefore, graduates are expected to start earning and paying back the family immediately after the completion of their studies instead of 'wasting' their time by engaging in business venturing.

The conceptual framework was based on studies which showed EE is strongly and positively related to SEIs (such as Peterman and Kennedy, 2003; Anjum et al. 2018; Asimakopoulos et al. 2019; Haddoud et al., 2020; Boubker et al. 2021). However, this study surprisingly imply that EE has no significant impact on the entrepreneurial intentions of the students in Pakistan. The most likely justification for this contradiction with previous studies is the precise Pakistani context. The general mindset of the society, which gives a lot of preference to the salaried jobs and particularly public sector jobs, can be possibly sighted as one of the reasons. Also the universities' approach towards EE can be another reason as it is still considered a part of business education rather than a sperate entity. Interestingly, there were some contradictory studies which support the current study and showed negative or no effect of EE on SEIs. While investigating the effect of EE in a compulsory course at universities in Netherlands, Oosterbeek et al. (2010) also found a significant negative effect of the course on students' Els. Similarly, Franco et al. (2010) found no or only a weak influence of EE on entrepreneurial interests among students in Germany and Portugal. In addition, Sharma (2015) found no significant difference in the career choice preference between students who studied EE and those who did not. In the same vein, Herman (2019), through her survey study of 138 engineering students in a Romanian university, found that students' participation in EE does not significantly influence their Els. Despite all this empirical support, this study suggests the need to improve the effectiveness of EE in the university curriculum in order to stimulate the entrepreneurial intentions of students in Pakistan.

### **Factor Two – Entrepreneurial Networking and Support (ENS)**

The first factor found to influence SEIs is the entrepreneurial networking and support. ENS involves the engagement of different stakeholders both inside and outside the university, such as academic faculty, student clubs, entrepreneurs and businesses, all of which are agents for promoting entrepreneurial actions (Groen, 2005). The collapsed mean score for the six observable variables used to measure the ENS factor was 3.24 (greater than the scale midpoint of 3), reflecting agreement among respondents on this factor's variables. This result shows that most survey participants considered that the entrepreneurial networking and support available at the universities help in promoting their entrepreneurial desires.

The EFA table (Table 5.20 on page 143) exhibited that all six observable variables related to the ENS construct were loaded on factor one and were highly correlated with each other. Moreover, factor one (ENS) alone explains 26.9% of the total variance in the data and reliability ( $\alpha=0.85$ ) is adequate (Table 5.24 on page 149). Additionally, CFA results confirmed that the ENS construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). However, one measurement variable (EN5) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. Regarding the influence of ENS on the SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that ENS would have a significant positive influence on 'Students' Entrepreneurial Intentions'. The results of the path measurement coefficients (Table 5.34 on page 165) revealed that the causal path between the ENS construct and SEI was significant at a level of  $p<0.001$ . As the beta value was positive, these results imply that entrepreneurial networking and the support available at universities positively influence students' intentions to start their own business in Pakistan.

The qualitative data (Chapter 6) also revealed ENS to be a significant predictor of students' intentions to start their own business. It was a common perception among the interviewees that, in addition to curricular activities, co-curricular activities in the form of mentoring, coaching, networking, business plan competitions and other support provided by the universities help in developing enterprising behaviour among the students. Interviewees viewed the networking events as a source of building social capital in the KP region as they help the students to maintain the social ties that may be of importance to them once they graduate and opt to start their own business. Interviewees further revealed that business plan competitions and university support in the form of mentoring and coaching also have a significant impact on the students' intentions towards venture creation in Pakistan.

These results accord well with the findings of Lorz et al. (2013), who carried out a meta-analysis by using a sample of 39 impact studies and found a positive relationship between entrepreneurial support programmes at universities and SEIs. Similarly, Shirokova et al. (2018) studied the effect of different entrepreneurship-related offerings by 489 universities in 26 different countries and found that an educational environment

that enables social contacts and introduction to social networks has a significant positive effect on the scope of start-up activities undertaken by students. Additionally, Nabi et al. (2019) argued that mentoring and coaching played a significant role in shaping students' entrepreneurial choices. This is also consistent with the findings of Fauzi (2021), who found that business plan competitions significantly influence the spirit of entrepreneurship among students. Moreover, Twum et al. (2021), through their study of 720 final-year students in four universities in Ghana, established that a business network (business managers, suppliers and distributors) supports students to venture into entrepreneurship.

Therefore, it can be seen that entrepreneurial networking helps students and aspiring entrepreneurs in acquiring new knowledge and information related to the products and services that they intend to provide. Similarly, a close relationship with their networks (suppliers, distributors and potential customers) helps the entrepreneurs acquire finances, human resources and raw materials much easier. Also, awareness of the supporting network and considerable network of social and professional contacts exposes students to more ideas and opportunities which help in shaping individual career aspirations and attitudes towards entrepreneurship. Moreover, bringing students into contact with the network needed to start a new business, arranging conferences or workshops on entrepreneurship, and offering entrepreneurship-focused project work are all types of support deemed important by students at a university (Davey et al., 2016; Oftedal et al., 2018). It is thus essential for the universities to manage an appropriate level of entrepreneurial networking and support, which this study considers a critical factor to influence the entrepreneurial intentions of the students in Pakistan.

### **Factor Three – Supportive Faculty (SF)**

Faculty members/lecturers can play a significant role in fostering interest and developing entrepreneurial thinking among students (Othman et al., 2012a). The collapsed mean score for the three observable variables used to measure the SF factor was 2.77, reflecting respondents' disagreement with this latent factor's statements.

The EFA results revealed that all three measurement items related to SF loaded on factor three and were highly correlated to each other. Moreover, factor nine (SF) alone explains 2.80% of the total variance in the data and the reliability of this construct ( $\alpha=0.85$ ) was adequate (Table 5-10). Additionally, CFA results confirmed that the SF construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). SF was found to influence students' intentions to engage in entrepreneurial activities in several SEI-related studies (such as Kirby, 2004; Hofer et al., 2013; Awang et al., 2014; Youssef, 2021). However, the results of the path measurement coefficients (Table 5.19) revealed that the causal path between the SF and SEI was insignificant ( $p>0.05$ ) and thus provided no support for this assumption. As the beta value was negative and  $p>0.05$ , these results surprisingly imply that the SF construct is not a significant positive predictor of entrepreneurial intentions of the students in Pakistan.

The interviewees provided further support for these positions. Indeed, most participants pointed out that the majority of faculty members are not familiar with the concepts of EE. They use the traditional approach of classroom delivery of lectures on entrepreneurship. Interview participants elaborated that EE should be treated differently from general business studies as more experiential learning techniques – such as case studies, group projects, in-class exercises, computer simulations, student-led discussions, business plan competitions, guest speakers and networking events – need to be adopted to affect students' attitudes and intentions towards entrepreneurship. They further pointed out the lack of support to the faculty members in terms of resources; lack of time and connections with industry also limit their vision towards EE.

The conceptual framework was based on studies which showed SF is strongly and positively related to SEIs (such as Lame and Yusoff, 2012; Othman et al., 2012a; Perera and Igel, 2017, Nabi et al., 2018). However, this study surprisingly concluded that SF has no significant impact on the entrepreneurial intentions of the students in Pakistan. The most likely justification for this contradiction with previous studies is the precise Pakistani context whereby faculty members use traditional methods of teaching even the business-related courses. More emphasis is placed on the theoretical knowledge instead of experiential learning in the Pakistani universities.

Furthermore, there is a lack of faculty members in universities who are specialised in entrepreneurship (such as holding a PhD in Entrepreneurship). Interestingly, there are some studies that support the conclusion of this study. For example, Wibowo et al. (2018), through their study using a sample of 743 students at a vocational institute in Indonesia, found that teachers' creativity has no direct effect on SEIs.

This study, thus, suggests that as faculty members' role is crucial to the success of entrepreneurial learning in the classroom, therefore, their participation in entrepreneurship training or seminars, advanced study groups and engagement with experienced entrepreneurs can help in improving the delivery of EE. Such changes or improvements to the educational system were also identified by Blenker et al. (2012), who claimed that the traditional way of teaching at the university level was not capable of developing students' motivation, competence and skills for innovation and entrepreneurship. They also emphasised that EE required a different set of learning methods, pedagogical processes and frames of education. Hasan and Zaheer (2021) claimed that a mixture of classroom learning, and fieldwork can help in providing students with certain managerial qualities needed for successful entrepreneurship. Similarly, improving the capacity of the faculty members through specialised training was also found to be important by Ghina et al. (2014), who developed a systematic framework based on in-depth interviews with 14 respondents from different hierarchical levels at an Indonesian university. The same steps were also identified by Abou-Warda (2016), who indicated that entrepreneurship educators should be set alongside those with experience of start-ups (as guest speakers) to teach courses. Also, he identified that training programmes for entrepreneurship educators should be rolled out in order to increase their awareness and understanding of EE, foster their skills and attitude development, and, more importantly, equip them with specific skills and knowledge to implement the pedagogy of EE. Overall, it can be concluded that, although faculty members (educators) fail to have an impact on the SEIs in Pakistan, by providing training programmes for their capacity building and other support mechanisms, a faculty would be in a better position to be more supportive to the students and so more strongly affect their EIs.

#### **Factor Four – Entrepreneurship Clubs (EC)**

The role played by entrepreneurship clubs in enhancing SEIs in the KP universities was found to be significant by the study. ECs are student-led societies aimed at attracting students who are interested in learning about enterprise and developing enterprising skills to either start their own businesses or become more enterprising people (Pittaway et al., 2010). In this study, the average mean score for the four observable items used to measure the EC construct was 3.34, indicating respondents' general agreement about these items. This result shows that the majority of the respondents deem ECs to be important in enhancing their entrepreneurial intentions.

Three items (EC2, EC3 and EC4) were identified by the EFA as EC measurement items. All three measurement items related to the EC construct were highly correlated (Table 5.8) and loaded on factor eleven, which explains 2.19% of the total variance in the data. The construct reliability ( $\alpha = 0.846$ ) was confirmed using Cronbach's alpha. CFA confirmed these results and provided statistical evidence of internal consistency and construct validity of the EC construct (Table 5.10). However, one measurement variable (EC2) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The results of path measurement coefficients (Table 5.19) revealed that the causal path between the EC and SEI constructs was significant at a level of  $p < 0.001$ . As the beta value was positive, these results imply that Entrepreneurship Clubs (EC) positively influence students' intentions to engage in venture creation in Pakistan.

The qualitative data also revealed the EC to be a significant element for students' intention to adopt entrepreneurship. All interviewees agreed that ECs provide the students with opportunities to engage in experiential activities which help them in developing enterprising behaviour and obtaining practical experience. Many interviewees believed that, although the EC are a new phenomenon in Pakistan, it is significant in enhancing entrepreneurial learning by enabling students to develop their skills, knowledge and capabilities to establish and run a business. Similarly, they also suggested that ECs provide the students with an environment which gives them experience in dealing with risks and uncertainties, raises their awareness and helps them in enhancing their problem-solving skills. Conclusively, empirical data from the

interviews asserts that ECs help in fostering an entrepreneurial spirit among students and thus positively affected the SEIs.

These results are consistent with findings from prior studies. For example, research by Rubin et al. (2002), through their study on a sample of 600 undergraduate students, found that participants who were members of ECs exhibited teamwork, decision-making, initiative and superior communication skills compared to non-members. Similarly, the findings from Preedy and Jones (2017) both supported and updated the prior studies that posit a link between the ECs and opportunities for experiential and social learning. Likewise, Eldredge et al. (2017), while describing extra-curricular student entrepreneurship activities, averred that ECs promote innovative thinking by encouraging their members to participate in creative activities, thus increasing their presentation skills and creating networking opportunities. More recently, Sansone et al. (2021) argued that, the more time students spent on ECs and the higher the number of events they attended, the greater their entrepreneurial intention was.

Therefore, it can be seen that ECs, although a new phenomenon in Pakistan, provide the students with an opportunity to undergo personal development by experiential and practical learning. They also help in developing interpersonal and problem-solving skills along with management and enterprising skills. As the ECs are led by students, thus they are seen as a means of enhancing formal EE by providing additional space outside of the curriculum for students to take initiatives and risks. In practical terms, this study therefore suggests that universities in Pakistan may further need to provide students with the opportunity to establish and engage in ECs. This will not only help in enhancing their entrepreneurial skills but will also increase their experiential learning. This study therefore supports the notion that, the more students engage in ECs, the greater their entrepreneurial intentions will be.

### **Factor Five – Entrepreneurial Resources (ER)**

The different types of resources that are available at universities for the development of student entrepreneurship include venture financing (Kuratko, 2005), incubator facilities (Hughes et. al., 2007), start-ups (Mueller 2008), seed funds (Saeed et al., 2014) and market research resources (Potishuk and Kratzer, 2017). The collapsed

mean score for the three observable variables used to measure the ER factor was 2.83, reflecting respondents' disagreement with this latent factor's variables.

The EFA results revealed that all three measurement items related to RE (ER1, ER2 and ER3) loaded on factor twelve and were highly correlated to each other. Moreover, factor twelve (RE) alone explains 2.13% of the total variance in the data and the reliability of this construct ( $\alpha=0.81$ ) was adequate (Table 5-10). Additionally, CFA results confirmed that the RE construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). RE was found to influence students' intentions to engage in entrepreneurial activities in several SEI-related studies (such as Mueller, 2008; Volery et al., 2013; Xu, 2013; Guerrero et al., 2017; Shi et al., 2019). However, the results of the path measurement coefficients (Table 5.19) revealed that the causal path between the ER and SEI was insignificant ( $P > 0.05$ ) and thus provided no support for this assumption. As the beta value was negative and  $P > 0.05$ , these results surprisingly imply that the RE construct is not a significant positive predictor of the entrepreneurial intentions of the students in the Pakistani context.

The qualitative findings further explained that, as most of the universities in Pakistan are reliant on public funding, therefore, due to the scarce funding, they are not in a position to allocate extra funds for providing these entrepreneurial resources in the form of venture financing, seed funds and incubation facilities. Interviewees explicated that, although some funding from the provincial government is available under its 'KP-Impact' programme, the complexities involved in obtaining these funds stop the entrepreneurs from applying for them. They further explained that the joint-family structure is still strongly intact in the KP culture; therefore, students or aspiring entrepreneurs prefer to arrange finances from their family or friends.

The conceptual framework was based on studies which demonstrated ER to be strongly and positively related to the SEIs (such as DeTienne and Chandler 2004; Brush et al., 2008; Volery et al., 2013; Guerrero et al., 2017). However, this study surprisingly imply that ER has no significant impact on the entrepreneurial intentions of the students in Pakistan. The most likely justification for this contradiction with previous studies is the precise Pakistani context whereby most of the entrepreneurial

resources are lacking or are not utilised effectively. Also, the universities are facing funding issues, therefore they find it hard to allocate extra funding for these entrepreneurial resources. Interestingly, there were some contradictory studies which support the current study and showed negative or no effect of ER on SEIs. For example, while, investigating the impact of university's financial support (in the form of seed funds) on the SEIs, Shirokova et al. (2018) also found that seed funding has a negative impact on the scope of students' entrepreneurial activities. They used a sample of students from 26 countries and 489 universities. Similarly, other literature (such as Audretsch et al., 2007; Minniti, 2008; Spigel and Harrison, 2017) also indicated that failed government-backed venture support programmes suggested that the presence of entrepreneurial resources, e.g. investment capital, alone does not guarantee entrepreneurial success. Overall, it can be concluded that, although entrepreneurial resources fail to have an impact on the SEIs in Pakistan, by having more funds the universities will be able to allow access to more entrepreneurial resources, which may improve the students' perception of these resources in the venture creation process.

### **Factor Six – Linkages with Society (LWS)**

A university's linkages with society include collaboration with local businesses/SMEs, government institutions and regional development agencies, and exchanges with other universities. These linkages were found to have a significant influence on the SEIs in Pakistan. In this study, the average mean score for the three observable items used to measure the LWS construct was 3.34, indicating respondents' general agreement about these items. This result shows that the majority of the respondents deem LWS essential in enhancing their entrepreneurial intentions.

Three items (LWS1, LWS2 and LWS3) were identified by the EFA as LWS measurement items. All three measurement items related to the LWS construct were highly correlated (Table 5.8) and loaded on factor six, which explains 3.55% of the total variance in the data. The construct reliability ( $\alpha=0.80$ ) was confirmed using Cronbach's alpha. CFA confirmed these results and provided statistical evidence of the internal consistency and construct validity of the LWS construct (Table 5.10). However, one measurement variable (LWS2) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The

results of the path measurement coefficients (Table 5.19) revealed that the causal path between the LWS and SEI constructs was significant at a level of  $p < 0.001$ . As the beta value was positive, these results imply that a university's Linkages with Society (LWS) positively influence students' intentions to engage in entrepreneurial activities after graduation in Pakistan.

The interviewees also supported this notion, as they all emphasised the importance of better linkages between universities and society for enhancing the students' entrepreneurial spirit. They believed that such linkages are helpful for allowing their students to do the compulsory internships in these organisations. They also articulated that such linkages provide a source of market and resource information for the students. A university's linkages with organisations are also deemed important by the interviewees for their role in promoting employability skills among the students. They therefore stated that such linkages were significant in fostering SEIs.

Moreover, this result concurs with the previous SEI-related studies that frequently refer to the importance of a university's linkages with society. For example, Pickernell et al. (2011) concluded that graduate entrepreneurs are more likely to access a university's sources linked to informal networks/trade associations as well as direct industry sources, customers, and suppliers. Similarly, Walter and Doshe (2012), through their study on a sample of 1949 students in German universities, found that a university's collaboration with regional industry has a significant role in shaping, motivating, and facilitating entrepreneurial activity among students. Also, Wright et al. (2017) argued that a university's collaborations/linkages with external enterprises can be a prominent solution for the work-readiness problems being faced by students, in terms of covering any skills gaps. Moreover, Towers et al. (2020) claimed that university-enterprise collaboration was essential for promoting graduate employability and entrepreneurship.

Therefore, a university's linkages with local businesses/SMEs, government institutions, regional development agencies and other universities are helpful not only in obtaining market and resource information but also help students in enhancing their employability skills. Such established links may prove to be a positive sign that students can obtain advice and information regarding resources and opportunities to

develop their entrepreneurship ideas. Another aspect of such linkages is bringing together academic researchers and industry, thus paving way for knowledge transfer. Practically, this study therefore suggests that the universities in Pakistan may establish further linkages with the organisations and institutes in the society that will help the students in developing an entrepreneurial mindset. This study therefore supports the notion that, the more linkages/collaborations the universities have, the stronger the SEIs will be.

After answering the first research question and achieving the first research objective by identifying the significant internal environmental factors, the next section deals with the second research objective.

### **7.3.2 Research Objective 2**

As outlined in Chapter 1, the second research objective aimed to identify the different factors from the external environment of the universities which affect the entrepreneurial intentions of the students, with a specific focus on the KP region of Pakistan. The following research question was formulated.

#### **Research Question 2:**

“What external university environmental factors affect SEIs?”

To answer this question, six factors from the external environment of the university were assumed to have a direct influence on the SEIs. Out of the six factors, five factors (CA, RE, Eco, SS and WA) were empirically proved significant while one factor (GP) was found to have no significant influence on the entrepreneurial intentions of the students in the Pakistani context. All of these factors are discussed in the following sub-sections.

#### **Factor One – Capital Availability (CA)**

Capital availability in the form of personal liquidity, formal bank financing, venture capital and financial support from family is considered the main source of equity for financing new venture creation. The capital availability was found to have a significant influence on the SEIs in Pakistan. In this study, the average mean score for the three observable items used to measure the CA construct was 2.95, indicating respondents’

slight disagreement about these items. This result shows that the majority of the respondents identified a lack of capital availability for venture creation.

The EFA results (Table 5.8) revealed that three measurement items (CA2, CA3 and CA4) were highly loaded on this factor (CA). Factor seven (CA) was found to explain 3.20% of the total variance in the data. However, one measurement variable (CA4) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The construct's reliability ( $\alpha=0.81$ ) was confirmed using Cronbach's Alpha. Additionally, CFA results confirmed that the CA construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). Regarding the influence of CA on SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that CA would have a positive influence on the entrepreneurial intentions of the students. The results of the path measurement coefficients (Table 5.19) revealed that the causal path between CA and SEI was significant at a level of  $p<0.001$ . As the beta value was positive, the result demonstrates that CA positively influences students' entrepreneurial intentions in Pakistan.

The qualitative data also revealed CA as a significant factor for students' intentions to engage in entrepreneurship. All interviewees believed that availability of capital is not only essential at the inception stage of a venture but also for the survivability and success of the business. The formal sources of capital include bank loans, venture capital and government business grant schemes. However, due to religious beliefs about avoiding interest-based transactions, informal sources of capital are mostly preferred in the KP region. These informal sources include financial support from family and friends. The qualitative data also pointed out that the emerging financing offered by Islamic banks was acting as an alternate source of capital availability.

The quantitative and qualitative results are consistent with earlier studies that have shown a strong positive link between the capital availability and the students' intentions to start their own business. For example, this result is consistent with results reached by Bowen and De Clercq (2008) that indicated that the availability of financial resources aimed at entrepreneurship positively affects the high growth orientation among entrepreneurs. This result is also aligned with the results reached by Tanveer

et al. (2013) and Staniewski and Awruk (2015), who identified that, along with other factors, lack of financial resources/capital was also a prominent entrepreneurial barrier among students. The current study result is also in line with other studies (such as Kim et al., 2014; Khyareh, 2018; Kovarova and Simsova, 2019) which identified that entrepreneurs prefer to borrow money from family and friends, instead of going for bank financing.

Therefore, the accessibility of different financial resources such as banks, venture capitals and start-up grants affect the entrepreneurial intentions. When students perceive that the available capital is insufficient for establishing a business, they find it difficult to engage in entrepreneurial activities. The start-up capital – including access to bank financing, low-interest loans and start-up grants – remains a major concern for the nascent entrepreneurs. Also, due to religious beliefs negating interest-based transactions, many entrepreneurs also resort to informal sources of finances including family members and friends. In practical terms, this study therefore suggests that the sources of finances for venture creation should be easily available in Pakistan whereby banks can offer low-interest loans and government grants for start-ups should also be made easier to apply for. Even in cases where entrepreneurs want to avoid interest-based financing, interest-free loans (such as offered by the Akhuwat Foundation and Islamic banks) can also be used for accomplishing a range of start-up activities. This study therefore supports the notion that, the easier the capital availability for venture creation is, the stronger the SEIs will be.

### **Factor Two – Government Policies (GP)**

Government policies include any course of action that aims to improve and regulate entrepreneurship in terms of support, funding and implementation guidelines (Obaji and Olugu, 2014). The collapsed mean score for the five observable variables used to measure the GP factor was 2.91, reflecting respondents' slight disagreement with this latent factor's variables.

The EFA results revealed that all five measurement items related to GP (GP1, GP2, GP3, GP4 and GP5) loaded on factor two and were highly correlated to each other. Moreover, factor two (GP) alone explains 9.91% of the total variance in the data and the reliability of this construct ( $\alpha=0.85$ ) was adequate (Table 5-10). Additionally, CFA

results confirmed that the GP construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). GP was found to influence students' intentions to engage in entrepreneurial activities in several SEI-related studies (such as Mason and Brown, 2011; Greene, 2012; Dutta et al., 2015; Miranda et al., 2017; Wu and Mao, 2020; Ma et al., 2021). However, the results of the path measurement coefficients (Table 5.19) revealed that the causal path between the GP and SEI was insignificant ( $p > 0.05$ ) and thus provided no support for this assumption. As the beta value was negative and  $p > 0.05$ , these results surprisingly imply that the GP construct is not a significant positive predictor of the entrepreneurial intentions of the students in the Pakistani context.

The interviewees provided further support for this position. Indeed, most participants referred to the inconsistent government policies as the main reason for this insignificant influence. They indicated that, although some political stability has been witnessed recently in Pakistan as governments have been completing their five-year tenures, a different party comes into power after every election. The problem is that every incumbent government abandons the policies pursued by the previous government, in order to undermine their political opponents. Similarly, if two different political parties are ruling at national and provincial levels (in the case of KP in the last tenure), then there are more problems with securing funds from federal government and in policy implementation.

The qualitative findings further explained that there are complex bureaucratic and administrative procedures to follow when establishing a business which are also costly, lengthy and time consuming. Secondly, the involvement of too many departments in this process and the lack of coordination between these departments pave the way for corruption/bribery. Interviewees also stated that government taxation policies and the costs of business start-up procedures also influence aspiring and nascent entrepreneurs.

The conceptual framework was based on studies which showed government policies are strongly and positively related to SEIs (such as Sebora et al., 2009; Koski and Pajarinen, 2013). However, this study surprisingly implies that GP has no significant impact on the entrepreneurial intentions of the students in Pakistan. The most likely

justification for this contradiction with previous studies is the precise Pakistani context whereby the political instability coupled with inconsistent government policies hampers the entrepreneurial activities in the country. The complex bureaucracy and administrative procedures can also be cited as influential factors that discourage aspiring entrepreneurs. Interestingly, there were some contradictory studies which support the current study and showed negative or no effect of GP on SEIs. For example, while investigating the causal relationship between the nurturing of entrepreneurs and the societal factors, Shabib-ul-Hasan et al. (2012) also found that an unstable political condition is one of the major concerns badly affecting entrepreneurial activities in Pakistan. They also identified the lack of government support in terms of implementing sound commercial policies and the provision of safe and secure market conditions. They further discovered that the continuous failure of government policies and bad governance promote corruption, nepotism, fraud and misappropriation of resources. Teixeira et al. (2018), from their study of a sample of 22 European countries, also found that government policies and support do not influence entrepreneurial intentions. Overall, it could be concluded that the direction of entrepreneurial activity may be influenced by government policies such as tax relief, subsidies, ease in establishing business, fewer bureaucratic hurdles, etc., in Pakistan. Therefore, to create a conducive environment for entrepreneurship, policymakers in Pakistan can play a key role by implementing initiatives such as investment support policies, legislation that attracts investors, tax benefits, relief, and subsidies for new graduates, establishing incubators, among others.

### **Factor Three – Regulatory Environment (RE)**

The regulatory environment not only includes the legal system, i.e., the formal rules and regulations concerning venture creation and its enforcement (Lim et al., 2010), but also bankruptcy laws (Lee et al., 2011). In this study, the regulatory environment was found to have a significant influence on the SEIs in Pakistan. The collapsed mean score (3.10) for these items reflects the respondents' general agreement with this latent factor's statements. The EFA results revealed that four measurement items were highly loaded on this factor (RE1, RE2, RE3 and RE4). However, one measurement variable (RE1) was later dropped, as suggested by the CFA Second run, to enhance the measurement model goodness-of-fit. RE explains 3.70% of the

total variance in the data and the reliability of this construct ( $\alpha=0.81$ ) was confirmed using Cronbach's Alpha.

Additionally, CFA results confirmed that the RE construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). Regarding the influence of RE on SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that RE would have a positive influence on the entrepreneurial intentions of the students. The results of the path measurement coefficients (Table 5.34 on page 165) revealed that the causal path between RE and SEI was significant at a level of  $p<0.001$ . As the beta value was positive, the result demonstrates that RE positively influences SEIs in Pakistan.

Furthermore, the results of the semi-structured interviews also supported RE as an important factor influencing SEIs. Many interviewees advocated that entrepreneur-friendly regulations help in developing enterprising behaviour among students. A regulatory environment that has relaxed regulations for new entrants not only reduces transaction costs but also increases efficiency in business transactions, as opined by most of the interviewees. Similarly, most of the interviewees also indicated that relaxed market entry regulations and property rights which safeguard the entrepreneurs from counterfeiters, would provide the entrepreneurs with a sense of trust and confidence in the legal system.

Both the quantitative and qualitative results concur with earlier research studies that have established a strong positive link between regulatory environment and SEIs. For example, this result is consistent with results reached by Lim et al. (2010), who identified that individuals in economies with less complex regulatory regimes and more property rights protection demonstrated higher levels of willingness to engage in entrepreneurial activities. In addition, Stenholm et al. (2013) ascertained that an environment with regulatory arrangements that support entrepreneurial activity is more significant than any other country-level institutional features. Also, Schulz et al. (2016) found that, in Mexico, a common type of market entry deregulation, in the form of 'one-stop shops', significantly reduced the time and cost of firm registration and had an evident effect on entrepreneurs. More recently, Kor et al. (2020), from their survey of

268 students of Turkish universities, found that perceived regulatory support had a significant direct effect on the students' EIs.

Therefore, the flexibility or relaxation in the regulations for the new entrepreneurs who want to enter the market affects their entrepreneurial intentions. When students perceive the regulatory environment as conducive, i.e., with less regulatory complexity and stronger property rights, they find it encouraging to engage in entrepreneurial activities. In addition, it can be argued that favourable laws, rules and regulations not only facilitate entrepreneurs' efforts to acquire resources but also provide support for the new businesses. Such relaxed regulations also help the new entrepreneurs in reducing their time and costs involved in the inception stages. In practical terms, this study therefore suggests that the government in Pakistan can further relax the rules and regulations regarding the market entry and registration in order to encourage the aspiring students who want to become entrepreneurs. Furthermore, a concept of 'one-stop shop' or 'one-window service' for the new entrepreneurs may also be encouraging. This study therefore supports the notion that, the more the regulatory system is relaxed, the more it will bring in the entrepreneurs for venture creation.

#### **Factor Four – Economic Environment (Eco)**

An economic environment mainly includes the general economic conditions, economic system, economic policies, and the state of various resources and amenities such as capital, raw material, infrastructure and so on prevailing within the country (Bush, 2016). The economic environment was found to have a significant influence on the SEIs in Pakistan. In this study, the average mean score for the three observable items used to measure the Eco construct was 2.79, indicating respondents' slight disagreement about these items. This result shows that the majority of the respondents see the economic environment as not very conducive for new venture creation.

The EFA results (Table 5.22 on page 145) revealed that three measurement items (Eco1, Eco2 and Eco3) were highly loaded on this factor (Eco). Factor eight (Eco) was found to explain 2.95% of the total variance in the data. However, one measurement variable (Eco1) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The construct's reliability ( $\alpha=0.84$ )

was confirmed using Cronbach's Alpha. Additionally, CFA results confirmed that the Eco construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). Regarding the influence of economic environment on SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that economic environment would have a positive influence on the students' entrepreneurial intentions. The results of the path measurement coefficients (Table 5.19) revealed that the causal path between economic environment and SEI was significant at a level of  $p < 0.001$ . As the beta value was positive, the result demonstrates that economic environment positively influences students' entrepreneurial intentions in Pakistan.

The qualitative data also revealed economic environment as a significant factor for students' intentions to engage in entrepreneurship. All interviewees believed that a conducive economic environment helps in developing enterprising behaviour among students. Interviewees explicated that the economic policies and programmes adopted by the government also have an effect on the entrepreneurial activities. They further explained that the economic system in the form of a market economy with less government intervention and bureaucratic interference has a better scope for innovation and entrepreneurship.

The quantitative and qualitative results are consistent with earlier studies that have shown a strong positive link between economic environment and the proclivity of students towards an entrepreneurial career. For example, Sayed and Slimane (2014), in their analysis of the economic and institutional determinants of the entrepreneurial activity in 10 Middle Eastern and Gulf countries, found that the stage of economic development, employment, financial development and macroeconomic stability, among others, were the most significant factors. The current study results are also in line with Martinez-Fierro et al. (2020), who found that economic development has a substantial impact on entrepreneurial motivation. Similarly, Wu and Mao (2020) also posited that the growth rate of the regional economy and the local economic conditions affect the students' entrepreneurial preferences.

In summary, one of the critical factors to have an impact on the SEIs in Pakistan is the economic environment. A stable economy will help in boosting entrepreneurship.

Students will have to take into account the level of income, consumption, savings and employment opportunities while deciding on their career. Similarly, other factors to consider include cost of production, interest rates, living costs and inflation, etc. Unfortunately, the economy of Pakistan has not posed a nice picture recently, due to a number of factors such as political instability, tensions on its borders, internal insecurity, bad law and order situation, etc. All these factors have proved a challenge to the already struggling economy. Therefore, government economic policies should be focused on bringing economic stability in order to give a boost to entrepreneurial activities in the country.

### **Factor Five – Structural Support (SS)**

The structural support available to the nascent entrepreneurs may be in the form of well-functioning physical infrastructure, entrepreneurial support services, consulting firms and well-developed road networks, etc. (Foo et al., 2005; Bosma and Sternberg, 2014; Ajide, 2020). The structural support was found to have a significant influence on the SEIs in Pakistan. In this study, the average mean score for the three observable items used to measure the SS construct was 2.79, indicating respondents' slight disagreement about these items. This result shows that the majority of the respondents see the economic environment as not very conducive for new venture creation.

The EFA results (Table 5.8) revealed that all four measurement items (SS1, SS2, SS3 and SS4) were highly loaded on this factor (SS). Factor ten (SS) was found to explain 2.33% of the total variance in the data. However, one measurement variable (SS1) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The construct's reliability ( $\alpha=0.85$ ) was confirmed using Cronbach's Alpha. Additionally, CFA results confirmed that the SS construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). Regarding the influence of SS on SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that structural support would have a positive influence on the students' entrepreneurial intentions. The results of the path measurement coefficients (Table 5.19) revealed that the causal path between SS and SEI was significant at a level of  $p<0.001$ . As the beta value was

positive, the result demonstrates that structural support positively influences students' entrepreneurial intentions in Pakistan.

The qualitative data also revealed structural support as a significant factor that impacts the proclivity of students' towards engaging in an entrepreneurial career. All interviewees believed that conducive structural support helps in developing enterprising behaviour among the students. They believed that, along with the improving logistic infrastructure (motorways and road networks), telecom infrastructure has also witnessed improvement such as communications and technology advancement in the form of internet access and connectivity over almost all of the country. The most prominent project of the developing infrastructure, as indicated by all of the interviewees, is the CPEC project, which is a framework of regional connectivity involving infrastructure projects, modern transportation networks, energy projects and special economic zones.

The quantitative and qualitative results are consistent with earlier studies that have shown a strong positive link between structural support and the students' inclination towards entrepreneurship. For example, Denonyah et al. (2015), while investigating the factors that impact on the EIs of polytechnic students in Ghana, empirically tested their proposed model on 228 students. They concluded that structural support along with educational support and family/peer support have a significant impact on the SEIs. Similarly, Ajide (2020), while evaluating the impact of infrastructure on entrepreneurship in a panel of 20 African countries, concluded that there is a positive and significant effect of infrastructures (i.e., transport, electricity, water and sanitation facilities, ICT and broadband) on entrepreneurial start-ups. Most recently, Youssef et al. (2021) carried out a study on the impact of the digitalisation of the economy on SEIs on a sample of 310 students from two different universities in Kosovo. They concluded that digitalised support (in the form of better information and communication technologies) has a significant impact on students' entrepreneurial intentions.

In conclusion, structural support in the form of better communication networks, in the form of both roads and telecoms, is crucial for fostering entrepreneurial processes. Therefore, the current investments in infrastructure development by the Pakistani government will not only help in creating a conducive entrepreneurial environment but

also will have a long-term impact in reducing unemployment and boosting economic development.

### **Factor Six – Workforce Availability (WA)**

New venture creation and entrepreneurial success highly depend on the availability of a skilled workforce (Lim et al., 2010 and Shirokova et al., 2018). The lack of a skilled and experienced workforce also hinders entrepreneurial spirit (Baker et al., 2005). Workforce availability was found to have a significant influence on the SEIs in Pakistan. In this study, the average mean score for the three observable items used to measure the WA construct was 3.31, indicating respondents' agreement about these items. This result shows that the majority of the respondents believe that there is an ample workforce available to entrepreneurs.

The EFA results (Table 5.8) revealed that three measurement items (WA2, WA3 and WA4) were highly loaded on this factor (WA). Factor four (WA) was found to explain 3.94% of the total variance in the data. However, one measurement variable (WA1) was later dropped, as suggested by the CFA Second-run, in order to enhance the measurement model goodness-of-fit. The construct's reliability ( $\alpha=0.86$ ) was confirmed using Cronbach's Alpha. Additionally, CFA results confirmed that the WA construct has a high composite reliability coefficient and a high level of construct validity (convergent and discriminant). Regarding the influence of workforce availability on SEIs, the preliminary research framework (Figure 3.1 on page 71) anticipated that it would have a positive influence on the students' entrepreneurial intentions. The results of the path measurement coefficients (Table 5.19) revealed that the causal path between workforce availability and SEI was significant at a level of  $p<0.001$ . As the beta value was positive, the result demonstrates that workforce availability positively influences students' entrepreneurial intentions in Pakistan.

The qualitative data also revealed workforce availability as a significant factor for students' intentions to engage in entrepreneurial activities. All interviewees believed that workforce availability and human capital help in developing enterprising behaviour among students. They identified that as the firms are vulnerable at initial stages, therefore the non-availability of a skilled workforce may prove detrimental for their

businesses. The interviewees also deemed workforce mobility and flexibility important for the fostering of entrepreneurial activities in the KP region.

This result is consistent with previous SEI-related studies that frequently refer to the importance of a skilled workforce for entrepreneurship (see e.g., Greer et al., 2016; Block et al., 2018; Nystrom, 2021). Martin et al. (2013), in their meta-analysis of 42 samples examining the effect of human capital on entrepreneurship, concluded that the development of entrepreneurial intentions is positively related to the entrepreneurship-related human capital assets. Moreover, workforce age was also found to be a triggering factor for entrepreneurial behaviours which affects EIs both directly and indirectly (Levesque and Minniti, 2006). Similarly, Marshall et al. (2020), while examining the impact of the access to resources on the self-efficacy of 258 potential entrepreneurs, concluded that access to resources including workforce and human capital act as triggers for nascent entrepreneurs to persist with their start-up activities.

In summary, one of the critical factors to have an impact on the SEIs in Pakistan is workforce availability. The availability of a skilled and experienced workforce has an impact on new venture creation. In Pakistan, youths make up 65% of the total population and youth unemployment, specifically graduate unemployment, is one of the main issues faced by the country. Therefore, the entrepreneurs are mostly at an advantage as they can hire from a large pool of educated youth. Also, the graduates from the technical institutes present a skilled workforce pool to hire from as compared to the university graduates. Due to its proximity with the Punjab province, where industry is much more developed than in the KP region, the flexibility and mobility of a skilled workforce into the KP region is also helping the local entrepreneurs. It can therefore be concluded that, if a critical workforce is scarce, a potential entrepreneur may decide against engaging in entrepreneurial activities as finding the workforce with the right skills will add to the initial costs of the venture creation.

After discussing the first two research objectives, the next section deals with the research objectives 3 and 4.

### **7.3.3 Research Objectives 3 and 4**

While the third objective in the current research was to develop a conceptual framework that portrays the critical factors from both the internal and external environments of the university, the fourth objective of the research aimed at testing the applicability of the proposed model in explaining and predicting the overall impact of university environment on SEIs. To achieve these research objectives, the following research question was formulated:

#### **Research Questions 3**

“How effective is the proposed model in predicting and explaining the influence of the university environment on SEIs?”

The following sub-section discusses how the study’s findings have answered the questions related to the contextual model of university environment and SEIs in Pakistan.

#### **The Revised (Final) Framework**

As explained in earlier sections, this study utilised empirical data, factor analysis and SEM to enhance the understanding of the university environment and its impact on the students’ entrepreneurial intentions, by specifying a context-based entrepreneurial intentions model that fits the reality in developing countries, the purpose of which is to help in the successful implementation of entrepreneurial support programmes.

Causal models, like the LFM, can help us in understanding the phenomenon of the direct influence of contextual factors on the students’ entrepreneurial intentions. SEM has been widely applied in EI-related studies (such as Mokhtar et al., 2017; Appiah-Nimo et al., 2018; Lopez-Delgado et al., 2019; Kor et al., 2020). However, they need to be representative (Casey and Wilson-Evered, 2012), i.e., fit the data collected, and must also correspond with the system under study. The LFM-based SEM examined in this study produced a set of acceptable fit indices, indicating the model is an acceptable fit with the empirical data and the DV (SEI) is influenced by several latent variables. The acceptable fit indices of a statistical model often known as goodness of fit (GOF) describes how well it fits into a set of observations. GOF indices summarise

the discrepancy between the observed values and the values expected under a statistical model (Maydeu-Olivares and Garcia-Forero, 2010).

The SEM results (GFA, CFI, RMSEA and AIC) of the final eight-construct model represented a relatively better model fit compared to the original model with 12 constructs and 45 variables. Therefore, the results of the current study advance the understanding of the applicability of this SEI model in a Pakistani context. The findings did not support the influence of all the proposed factors presented in Chapter 3 (section 3.3 on page 71). Rather, the results showed that, among the proposed factors, Entrepreneurship Education, Supportive Faculty, Entrepreneurial Resources and Government Policies have an ineffectual impact on SEIs, and thus were excluded from the final model. However, the results (quantitative and qualitative) of the study provide ample support for the final research framework (Figure 7.1 on page 262) and for the causal relationships among the variables. According to the final research framework, KP students' entrepreneurial intentions are determined by eight contextual factors, ENS, EC, LWS, CA, RE, Eco, SS and WA. Two new emergent themes, i.e., University-Industry-Government (U-I-G) Collaboration and Law and Order Situation (LOS), were also found to be influential in having an impact on the KP students' entrepreneurial decisions.

Squared multiple correlations obtained by SEM indicate that the explanatory power of the proposed model in this study is 67.3% (Table 5.35 on page 169). The path statistics exhibited (Table 5.35 on page 165 ) indicate that capital availability, structural support regulatory environment and entrepreneurship clubs are the most important determinants of the DV (SEIs). As discussed earlier (section 7.3 on page 236), despite a few unexpected results, most of the results are very much aligned with the qualitative findings and prior studies related to EIs. Such as the significant impact of ENS was expected given the work of Nabi et al. (2019) and Fauzi (2021). Similarly, the significance of EC was also expected given the work of Eldredge et al. (2017) and Sansone et al. (2021). Likewise, the significance of SS corroborates to the work of Misoska et al. (2016); Foo et al. (2016), and Kor et al. (2020).

Figure 7.1 illustrates the results of the aforementioned validated factors (in red) and additional factors (in blue) that affected the SEIs in the KP region of Pakistan.

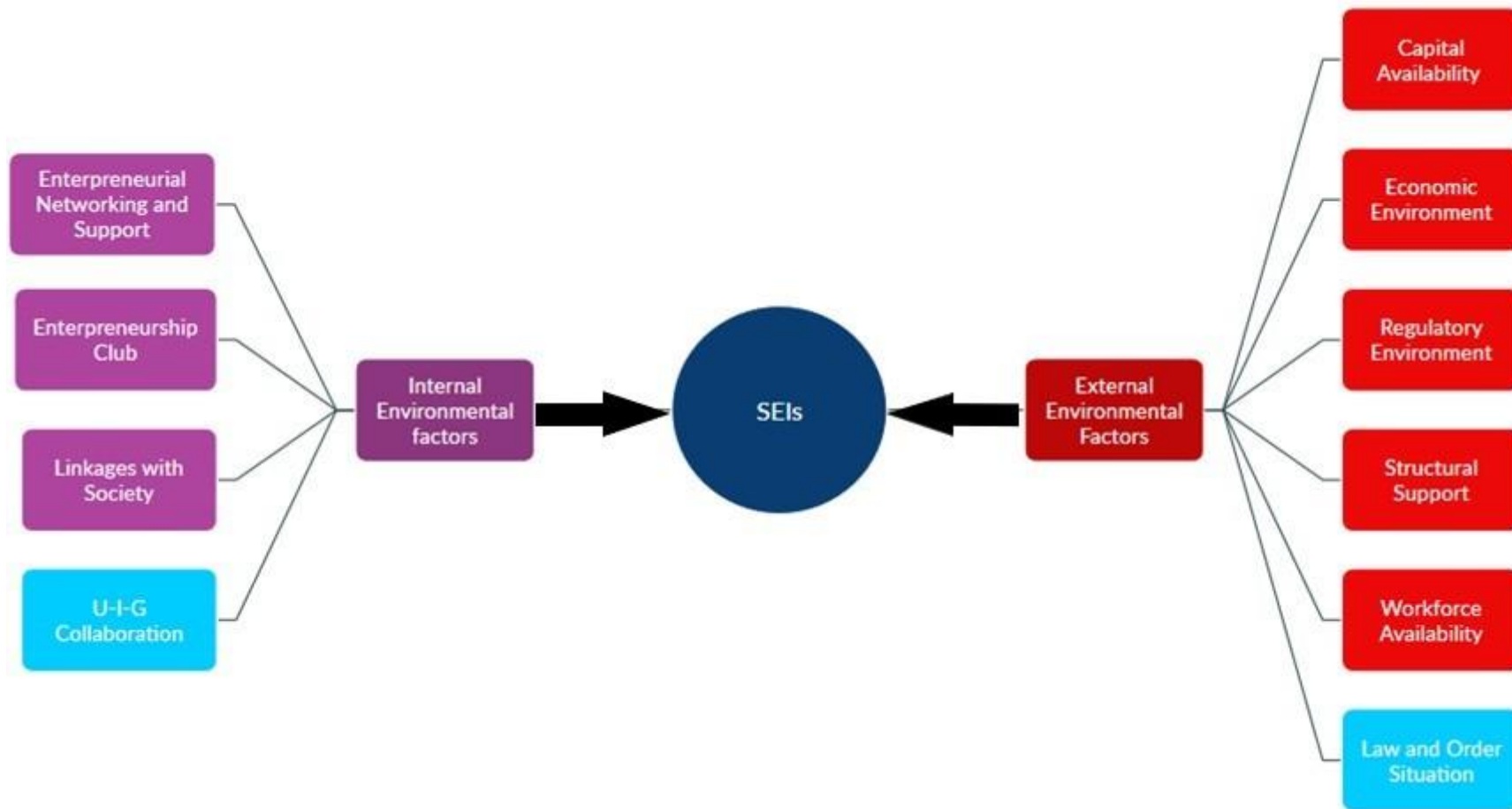


Figure 7.1 Final Research Framework

The explanatory power of the established models of previous studies that focused on the determinants of the entrepreneurial intentions among students is around 40-60% (Zainuddin and Ismail, 2011; Solesvik et al., 2012; Mokhtar et al., 2017; Mubarak et al., 2019 and Kor et al., 2020). In their study, Solesvik et al. (2012) used three different theories (i.e. Entrepreneurial Event Theory [EET], Theory of Planned Behaviour [TPB] and an Integrated Conceptual Model [ICM]) in order to explain the variance relating to the intention to become an entrepreneur in Ukraine. They concluded that these models explained 40%, 55% and 60% of the variance in the EI dependent variable, respectively. Similarly, Zainuddin and Ismail (2011), while studying the effect of push and pull factors in an entry into employment route, concluded that EE explained about 45% of variance towards Entrepreneurial Self-Efficacy (ESE). Mukhtar et al. (2017) were more successful in combining the Need for Achievement (NA) and Theory of Planned Behaviour (TPB) in order to investigate the factors influencing SEIs in Malaysia. They reported that the proposed model explained approximately 54.6% of the variance in SEIs. In addition, Mubarak et al. (2019), who used entrepreneurship characteristics, subjective norms and entrepreneurship competencies to study SEIs in Indonesia, found their model to explain 46.2% of the variance in entrepreneurial intentions. Mohamad and Chin (2019) found that their model explained about 48% of the variance in entrepreneurial orientation. However, the explanatory power of the proposed model in this study (in respect to SEIs) is shown as 67.3%. Therefore, compared with other SEI-related studies, this study produces results that confirm the model as developed, to have better explanatory power, and to be robust in predicting students' entrepreneurial intentions in Pakistan.

The final framework (Figure 7.1 on page 262) also proposed two emergent themes, i.e. U-I-G Collaboration and LOS. The study suggests that greater interaction between universities, industries and the government is important for fostering regional economic growth and promoting entrepreneurship (Rasmussen et al., 2006; Guerrero and Urbano, 2012; Cai and Etzkowitz, 2020). The qualitative data also supported an integrated mechanism of collaboration between these three spheres of institutions. However, institutional-level support by the government in the form of funds provision and policy implementation was stressed by the participants in this regard. Along with U-I-G Collaboration, the study also identified LOS as another significant factor influencing the SEIs in Pakistan. Although the literature on the direct effect on LOS on

SEIs is scarce, the literature does identify the consequential factors of LOS that impact the SEIs (Sandler and Enders, 2008; Noor et al., 2013; Krasniqi and Mustafa, 2016; and Shah and Lala, 2021). These consequential factors include political instability, economic consequences, insurgency, capital risks, damaged financial sector, corruption, etc. A detailed discussion in this regard is presented in section 6.4.6 (on page 208).

Overall, it could be concluded from the foregoing discussion that the model proposed in this study provides a good understanding of the factors that influence students' intentions to engage in an entrepreneurial career in Pakistan. Moreover, this result also suggests that the model could serve as an adequate conceptualisation of SEIs in Pakistan.

#### **7.4 Summary**

This chapter has presented a discussion of the combined results gathered via the questionnaire and interviews. It has considered the key findings related to each research question in the light of the literature, in an attempt to show how the research objectives have been met. The first two research objectives aimed at analysing what internal and external university's environmental factors influence SEIs. Overall, eight (ENS, EC, LWS, CA, RE, Eco, SS and WA) of the 13 variables tested in the preliminary research model were found to have a significant influence on the SEIs in the KP region of Pakistan. Therefore, these variables have been incorporated into the final model. Variables that had no significant influence on SEIs were excluded. The other research objectives aimed at the validation of the proposed research framework in the KP region. The final SEI framework proposed in the study was validated, confirmed and proved to be effective in explaining students' intentions to adopt entrepreneurship as a career. The study also identified U-I-G Collaboration and LOS to be significantly influencing the SEIs in the KP region of Pakistan.

In the following chapter, the thesis is drawn to a final conclusion, the contributions made by the study are outlined, recommendations based on the findings are made, and the limitations of the study are presented. Some directions for future research are also offered.

# **Chapter 8: Conclusion**

## **8.1 Introduction**

This chapter consolidates previous discussions, presenting the theoretical and practical contributions made by this study to develop a better understanding of the factors that influence the entrepreneurial intentions of students in Pakistan. Additionally, study limitations and potential directions for future research are presented.

The chapter is divided into six sections. After this introduction, section 8.2 presents the summary of key findings of the entire research. The theoretical and practical contributions are detailed in section 8.3. Section 8.4 offers recommendations for key public officials in Pakistan in order to provide a conducive environment at universities that would help in nurturing an entrepreneurial mindset among students. The limitations of the study are presented in section 8.5, and finally, in section 8.6, directions for future research are highlighted.

## **8.2 Research Summary**

The research presents new data and analysis and a comprehensive discussion on the university environment and its impact on the entrepreneurial intentions of students in the KP region of Pakistan. The purpose of this research was to examine the influence of key factors from both the internal and external environments of the universities which significantly influence the SEIs in Pakistan with specific reference to the KP region. While doing so, this study tries to answer and explore the following: (1) What internal university environmental factors affect SEIs? (2) What external university environmental factors affect SEIs? (3) How effective is the proposed model in predicting and explaining the influence of the university environment on SEIs?

To answer the above questions, the study commenced with an introduction to the background of the research, as well as the associated inspirations and problems, so that consideration could be given to the significance of the research and the potential it has to contribute to the field of entrepreneurial intentions among students. The discussion revealed that Pakistan, in order to tackle the problem of growing youth unemployment and upskill the youth graduating from the universities, embarked on an educational reform programme which was aimed at the promotion and development

of entrepreneurship. The programme pressed universities to focus on developing entrepreneurial opportunities and flexibility among their graduates. The positive behaviour of policy makers encouraged educational institutions to start contributing towards entrepreneurship development by establishing business incubators, start-up programmes, EDCs and other such initiatives. To date, little research has been undertaken to investigate how these initiatives have influenced the SEIs in the country. In addition, studies that examine and establish the extent to which these efforts have affected the SEIs in the KP region are scarce.

The literature review (Chapter 2) revealed that there is a lack of consensus among previous studies about factors that may influence SEIs. Moreover, the existing models for explaining the key determinants affecting the SEIs have shown conflicting results and contradictory findings. Also, there has been isolated research identifying different contextual factors that affect the SEIs; a consolidated effort to develop a framework that outlines all the possible factors from both internal and external environments of universities, as well as their theoretical explanations, remains elusive. To address this gap, this study aimed at providing a holistic view of both internal and external environmental factors in the form of a consolidated framework. Two major outcomes were derived from the review of the literature. The first was a comprehensive list of the key determinants affecting the SEIs in different contexts (Table 2.7 on page 46). The second was the identification of two core categories of these determinants affecting SEIs: internal environmental factors in the form of entrepreneurial offerings by universities (Table 3.3 on page 62) and external environmental factors (Table 3.4 on page 70).

A research framework was developed to investigate the factors affecting the SEIs in the KP region of Pakistan (Chapter 3). Based on a review of the extant literature and different theoretical perspectives, a conceptual framework (see Figure 3.1 on page 71) was adopted which included both internal and external environmental factors assumed to be affecting the SEIs. The main benefits of the conceptual framework are its clear structure, sound theoretical basis and its wide recognition within the literature (Maxwell, 2013; Harfoushi et al., 2016); though it should be noted that the relative importance of each determinant can vary across different domains and contexts. Therefore, based upon the literature review and research context, the conceptual

framework incorporated 13 independent variables (key determinants) and one dependent variable (SEIs).

Chapter 4 comprised two main parts; the first discussed the philosophical paradigms within the field of entrepreneurial research and looked at various research approaches and methods, and different sources for collecting data. The second part proposed the research methodology used for this study along with justifications for the chosen methodology. It gave reasons for the choice of a post-positivist paradigm rather than a positivist or interpretivist paradigm. It also justified the combining of quantitative and qualitative approaches. Additionally, it explained the motivations behind the selection of the survey and case study methods over other research methods such as grounded theory, ethnography and action research. All sources that this research chose to investigate, such as public documents, and the research methods chosen, surveys and interviews, were also discussed, and explanations for such choices were provided. Finally, Chapter 4 described in detail the procedures carried out during the two phases of data collection and analysis.

Chapter 5 dealt with phase one of the data collection, using a questionnaire distributed among 490 business students from universities in the KP region. The research instrument scales were designed to investigate how the universities' internal and external environmental factors affect the SEIs. Prior to the final distribution of the survey, the questionnaire was pre-tested and piloted. To ensure data quality, students from different specialisations and programmes were included. For quantitative data, 386 responses from the sample were deemed usable. After the survey administration, descriptive statistics were employed to assist in detecting mistakes and missing data as well as in describing the demographic characteristics of the sample. In addition to describing the demographic characteristics of the study sample, normality assessments and potential bias examinations were also addressed as parts of the data validation. To identify the specific factors that affect the SEIs, the study framework was carefully assessed; this involved assessment of measurement as well as structural modelling. As the measurement model was concerned with reliability and validity evaluation, exploratory and confirmatory factor analysis were carried out to evaluate the construct validity and reliability, which were found to satisfy the general minimum criteria. The structural modelling involved testing the hypothesised

relationships and propositions related to the university environment and SEIs. Inferential analyses were then conducted to test the conceptual framework by using AMOS and SPSS software.

Chapter 6 dealt with phase two of the collection and analysis of the qualitative data. Six Head/Directors of the business department in universities were interviewed to gain an in-depth insight about concerns related to the university environment and its impact on the entrepreneurial intentions among students. Based on the theoretical framework and findings obtained from the quantitative data, a semi-structured interview guide was developed. The questions were about a general overview of the entrepreneurial support available to the students at the universities, the role of the HEC in enhancing entrepreneurship in the universities, different environmental factors affecting SEIs and the results of the quantitative stage of this study (Appendix C on page 330). Qualitative data results were consistent with the quantitative findings and there were no interview responses that challenged the survey result findings. However, interviewees identified two additional concepts (emergent themes), i.e., University-Industry-Government (U-I-G) Collaboration and Law and Order Situation (LOS), both of which were subsequently included in the final model (Figure 7.1 on page 262).

While the statistical findings assisted by enabling testing of the conceptual framework, the qualitative analysis of the semi-structured interviews triangulated the quantitative findings of the impact of the university environment on the entrepreneurial intentions of students in Pakistan. Subsequently, to help identify managerial and practical implications related to EE adoption and implementation in this little-explored context, interpretations based on the study findings were discussed, as presented in Chapter 7. Research findings were discussed and linked with previous work in the field. Finally, Chapter 7 presented a final model that portrays the key determinants affecting the entrepreneurial intentions of students in Pakistan. Eight of the twelve determinants were found to have a significant influence on SEIs (see Table 5.33 on page 165). After reviewing the research process, significant factors and key findings, the following sections will highlight the major theoretical and practical contributions of this research.

### **8.3 Theoretical Contributions**

In relation to the theoretical contributions, there are six different aspects worthy of consideration as follows:

Firstly, entrepreneurial intentions literature shows the scarcity of a consolidated research framework regarding the critical factors impacting the students' entrepreneurial intentions. Although there has been isolated research identifying different contextual factors that affect the SEIs, a consolidated effort to develop a framework that outlines all the possible factors from both internal and external environments of universities, as well as their theoretical explanations, remains elusive. This study therefore contributes to the existing body of knowledge by filling this important gap by taking on a theory-based empirical investigation of the critical factors from the universities' environment that impact the students' SEIs. Consequently, a key contribution relates to the fact that this study presents a consolidated model encompassing critical factors from universities' internal and external environments that have a significant impact on SEIs in Pakistan.

Secondly, it has been identified in the literature review (chapters 2 and 3) that the existing literature presents conflicting results and contradictory findings, based on studies undertaken in different contexts. These conflicting results may be because of the differences in context, as each country has its own environment and specific set of circumstances, opportunities and problems. Therefore, as discussed in the earlier chapters, one-size-fits-all approach may not be suitable while studying SEIs in Pakistan, thus there was a need for further investigation into critical factors influencing SEIs in the Pakistani context in order to confirm/reject the existing results. The current study contributes significantly to previous studies by filling this gap through exploring and examining the critical factors that stimulate or impede the SEIs in the Pakistani context, with results that both confirm and reject those of some of the previous studies. Additionally, it explains the role of each factor and the nature of its relationship with the SEIs.

Thirdly, the novelty of this research is based on the development of a comprehensive theoretical framework that examines the factors that influence the SEIs, based on perceptions and views from different stakeholders. Literature (such as Wang and

Wong, 2004; Lee et al., 2005; Thompson, 2009; Goyanes, 2015) suggests that most of the EI-related studies use students as the sample object of analysis, ignoring other stakeholders such as academics, mentors, guest speakers, role models, etc. Therefore, in order to form a comprehensive picture of the issues related to entrepreneurship support at universities, this study not only assessed the perceptions and views of students, but also other key stakeholders involved, including Head/Directors of the Business departments in the universities in the KP region of Pakistan.

The fourth major contribution of this study is the development of a 22-item research instrument involving a dependent variable and eight independent variables designed to measure students' positive attitudes and perceptions towards the key determinants of their EIs. The instrument development process included reviewing the related literature for empirically confirmed items, choosing appropriate items, pilot testing, and finally testing the instrument empirically. Moreover, several steps were involved in the validation of the developed instrument scales. Initially, EFA was employed to identify the major SEIs related dimensions, and then CFA was used to validate the underlying structure of the main constructs of the instrument as well as to assess the composite reliability and construct validity. High internal consistency levels were reported among all constructs using two reliability indicators (Cronbach's Alpha and composite reliability). The constructs of the final proposed instrument also demonstrated high convergent and discriminant validities. Therefore, it is believed that this instrument can be used with confidence by researchers aiming to study SEIs in developing countries that have a similar culture and share the same contextual issues as Pakistan.

Fifthly, the study applied a novel research design based on a mixed-methods approach. Despite the mixed-methods approach being common in social research, it was the first time this strategy had been used to study SEIs in Pakistan. Two data collection phases were applied: quantitative data was collected in the first phase using a survey questionnaire and qualitative data was gathered thereafter via a semi-structured interview exercise. Linkages were made within and across the two research phases in order to obtain a rich picture of the university environment, which had been mostly investigated only through a single research design (quantitative) previously. While the quantitative findings highlighted eight factors (ENS, EC, LWS, CA, ER, Eco,

SS and WA) that influence SEIs, the qualitative findings highlighted U-I-G Collaboration and LOS to also be contributing to the influence of the university environment on the SEIs.

Finally, a major contribution of this study to the existing theory is the validation of the research framework with empirical data collected from students and Head/Directors of the Business Schools in the universities in the KP region of Pakistan. An integrated university entrepreneurial environment model, based on the Luthje and Franke Model (LFM), was developed. Thirteen variables were synthesised into a single integrated model, which then was tested for its predictive and explanatory power to determine what factors influence students' intentions to adopt entrepreneurship as a career in Pakistan and in other developing countries with similar circumstances. The findings of the current study show that the final refined model is valid and exhibits good explanatory power in predicting the behavioural intentions of students to engage in entrepreneurial activities after graduation.

Overall, this research has utilised findings from prior EI-related studies in association with findings from its quantitative and qualitative phases to provide a holistic view of SEIs in Pakistan as an example of an Asian developing country. Therefore, this research has provided new insights into the impact of the university environment on SEIs in Pakistan, which could be generalised to other developing countries. In conclusion, the research findings have offered new insights into how SEIs are influenced by various determinants from different angles and how these effects are perceived by students and teachers in a developing country context.

#### **8.4. Practical Contributions**

The investigation of the environmental factors that influence the entrepreneurial intentions of the students is an important endeavour. Eventually, the environment in which the students interact daily affects their attitudes and behaviours. The findings of this study have several practical implications; however, a few important implications for university administration and policy makers are outlined here.

Firstly, this study highlighted the importance of the environmental factors for their influence on students' entrepreneurial intentions. The results showed that, along with other factors, students in Pakistan also develop their positive attitudes and behaviours on the basis of environmental factors such as entrepreneurial networking and support, capital availability, structural support, etc. When they perceive that the environment is conducive for entrepreneurship, they are more likely to exhibit higher levels of entrepreneurial intentions and eventually engage in entrepreneurial activities. Results assessed the relative influence of both internal and external environmental factors on SEIs. Findings indicated a positive influence on the dependent variable, i.e. students' entrepreneurial intentions. This means that, when students are provided with enough entrepreneurial support and networking opportunities at universities along with experiential learning at ECs, they are more likely to demonstrate higher entrepreneurial intentions. Similarly, at the institutional level, the government support in the form of friendly policies, economic programmes, friendly regulatory regimes, structural support and ease in capital access all lead the students to exhibit higher levels of EIs. This conceptualisation further suggests that both internal and external environmental factors are equally important in influencing SEIs.

Secondly, the conceptual framework highlights multidimensional elements of the university environment encompassing the internal and external environmental factors that affect the students' entrepreneurial decisions. Through a conceptualisation of the relationships between SEIs and the key factors, the study offers a number of practical guidelines for the development of entrepreneurship support programmes at university level and a road map for the government policy perspectives.

Thirdly, understanding the influence of the critical factors on SEIs, and the causal relationships among them, will provide a roadmap for university administration and policy makers in the HEC and government departments to help in devising future policies or improving current practices. To ensure the success of the entrepreneurship support programmes at universities, it is important for policy makers/leaders to acquire a comprehensive understanding of factors affecting students' intentions to engage in entrepreneurship. Without this fundamental understanding, it is hard for policy makers to suggest what kinds of factors have strategic importance, and what are irrelevant in terms of the successful implementation of such support programmes. Moreover, it is

believed that this understanding will enable leaders to become more effective in allocating and utilising scarce resources. For example, leaders can employ more attention and allocate additional resources to the key determinants (Entrepreneurial Networking and Support, Entrepreneurship Clubs, Linkages with Society, Capital Availability, Regulatory Environment, Economic Environment, Structural Support, and Workforce Availability).

Fourthly, this study provides the Government of the KP with a university entrepreneurial environment model that can be utilised by the policy makers and leaders as a guide and tool to support and improve the decision-making process regarding the implementation of entrepreneurship support programmes in the region's universities. The final causal relationship model (see Figure 7.1 on page 262) developed by the researcher can help managers to organise thinking regarding where to focus attention when planning and implementing support programmes; how to intervene and ensure the success of such programmes.

Fifthly, the empirical findings suggest that efforts to provide a conducive environment for fostering an entrepreneurial mindset among students require a multi-levelled approach, targeting both the internal and external environments of the university. Within the universities, the administration should not only focus on the educational curriculum and classroom learning but also on practical learning and networking support. Similarly, the external environment is mainly related to the policy makers at the government level. Therefore, they should focus on providing entrepreneur-friendly policies, regulations, incentives, relief and structural support. Finally, due to the similar nature of the several areas in KP region, the study findings could be generalised to the population of the study (i.e., the universities in the KP region), as well as potentially other similar contexts in the other provinces of Pakistan, along with similar countries in other regions.

Whilst the main contribution of this study is the empirically derived university entrepreneurial environment model for developing countries like Pakistan, the researcher has also created a set of recommendations for practice. Therefore, the final contribution is the study's presentation of a set of specific recommendations to overcome the main research problem, which is the low impact of the university

environment on the SEIs in developing countries such as Pakistan. Policy makers and leaders can use these recommendations to identify key factors influencing decisions to implement entrepreneurship support programmes and to be able to make informed decisions. These practical recommendations and guidance are presented in the following section.

#### **8.4.1 Recommendations**

The literature review and the empirical findings indicate that policy makers and leaders at both the university and government levels must acknowledge critical factors if they seek to provide a conducive entrepreneurial environment at universities. In this study, the significant environmental factors affecting SEIs were identified and explained in detail. Based on that, a number of recommendations for universities (entrepreneurship educators) and policy makers at government level (HEC and provincial government of the KP) are suggested as follows:

##### **Recommendations for Universities**

The lack of employment opportunities and the low entrepreneurship activity rates in Pakistan have an impact on the entrepreneurial offerings of the universities. In light of the findings of this research, the following recommendations for the universities in Pakistan in general and for the KP universities in particular are thus made:

--- The study through the literature review found that youth unemployment in general, and graduate unemployment in particular, is one of the major issues faced by Pakistan currently (Tipu and Arain, 2011; Imtiaz et al., 2020; Hassan and Zaheer, 2021). Literature further suggests that entrepreneurship has contributed to the economic growth and youth employment not only in developed countries but also in developing countries (Autio et al., 2000; Delmar et al., 2003; Audretsch, 2007; Zahra et al., 2014; Rauch and Hulsink, 2015; Sukru, 2018). Therefore, where entrepreneurship is considered a possible solution to tackle the unemployment problem in Pakistan (Haque, 2007; Bokhari, 2013; Imtiaz et al., 2020), governments and universities need to know how best to develop students' entrepreneurial intentions. However, as found by this study, the current entrepreneurship education at universities is not having any significant impact on the SEIs. Thus, in order to inculcate an entrepreneurial spirit

among university students, this study suggests a holistic approach of enhancing the educational curricula at universities. The relative weight of entrepreneurship-oriented curricula in the total curricula should be enlarged by offering more compulsory courses related to entrepreneurship.

--- This study also found that the current method of delivering EE is mainly focused on the theoretical aspects, with very little or no focus on the practical/experiential learning. As suggested by Kolb (1984) allowing students to put their knowledge into practice by active experimentation ensures that the information is retained and used in future situations. Therefore, this study also suggests that the entrepreneurship educators should also focus on the experiential learning (practical learning), instead of just focusing on the theoretical side, by including more simulation exercises, interactive sessions, case competitions, idea development workshops and behavioural games within the classroom environment. These particular exercises and activities will help in developing the particular leadership competencies required for students to take on successful new ventures.

--- The study highlighted that entrepreneurship clubs play an important role in the nurturing of an entrepreneurial mindset among students by providing them with an opportunity to learn by doing. Thus, the incorporation of real-life business experience with theory in ECs may go a long way towards supporting entrepreneurial activities in the future. Therefore, this study suggests that the universities in Pakistan can help in this regard by supporting ECs at universities, in terms of both finances and administrative support.

--- In order to provide students with an opportunity to learn from real entrepreneurs, a university can involve successful entrepreneurs by arranging mentoring sessions and guest lectures. Lectures given by successful entrepreneurs will help in promoting role modelling and vicarious learning. Also, students will be motivated by observing the working style of and collaborating with the successful entrepreneurs.

--- The study also highlighted that among the graduate unemployed were graduates of technical institutes and other specialised universities such as engineering universities and agriculture universities. It is therefore suggested that the universities

with business schools/departments can establish collaboration with these universities in order to inculcate the entrepreneurial attitude among their students as well, so as to enable them to start their own business in the future.

--- The findings of this study also highlighted that the students found the support provided by the teachers to be insufficient in order to stimulate an entrepreneurial spirit among them. This study therefore suggests the need for programmes of entrepreneurship training for teachers in order to increase their teaching competence and widen entrepreneurship teaching (Tumasjan and Braun, 2012; Ghina et al. 2014).

Along with recommendations for university administrators, the study also makes recommendations for government leaders and policy makers, which are explained below.

### **Recommendations for the Government**

In light of the findings of this research, the following recommendations can be made for government leaders and policy makers, particularly those involved with entrepreneurship-driven programmes.

--- As highlighted by the research findings, the inconsistency in government policies was hampering the SEIs. Therefore, it is suggested that the government, while devising any policy aimed at the development of entrepreneurship, should also introduce adequate legislation to ensure its continuation by the succeeding government or by defining a time frame for each policy. Moreover, the government needs adequate monitoring system to ensure that any entrepreneurship development programme aimed at young people is implemented in the true letter and spirit and corrective measures can be taken where problems are encountered.

--- In order to inculcate an entrepreneurial spirit among students at an earlier stage, the inclusion of entrepreneurship at college level at least, if this is not possible at school level, will help them develop the motivation and proclivity for entrepreneurship at an earlier age. Such entrepreneurial support provided at college level is evident in

China (Ma et al. 2014), USA (Trebar, 2014) and Indonesia (Ahamed and Rokhman, 2019).

--- The study findings highlighted that entrepreneurship-friendly regulations help in stimulating students' entrepreneurial intentions. Therefore, it is suggested that any impediments in the entry stages such as strict market entry regulations, higher transaction costs, bureaucratic hurdles etc, must be removed by the government. Also, the idea of 'one-window-operations' or 'one-stop-shops' can be helpful in inspiring the nascent entrepreneurs by portraying fewer bureaucratic hurdles and administrative procedures at the inception stage.

--- The study has identified the law-and-order situation (LOS) as one of the most important factors influencing SEIs. In the post-9/11 scenario, when Pakistan became an ally of the USA by joining their 'War on Terror', it has to face the brunt of insurgency by local militant groups, in the form of kidnappings, target killings, suicide bombing and extortion (Noor et al., 2013). This deteriorated security condition created a 'law and order situation', forcing Government to take military operations to out these groups (Kwong, et al., 2019). Although the LOS has shown signs of improvement in recent years due to these military actions, it is suggested that the government continues to work on its further improvement so that it does not have any detrimental effects on the economy in general and on entrepreneurs in particular in the future.

--- The study also identified U-I-G collaboration as a significant factor. Currently, a lack of co-ordination between the universities, industry and government was identified by the interviewees. The study also witnessed a lack of coordination even between the different government departments. For example, the provincial Ministry of Information Technology (IT) is running the 'Durshal' project while the Ministry of Youth Affairs is running a 'KP-Impact' programme, both of which are aimed at the development of youth entrepreneurship. The running of two very similar programmes by two different ministries, is not only adding to their running costs but also requires more human and financial resources. It is mainly about inefficiency through duplication of programs, which may result in wastage of funds and other key resources. Therefore, strong co-ordination and collaboration between all the stakeholders working for the promotion of youth entrepreneurship is needed. Although the U-I-G collaboration is a new

phenomenon in the Pakistani context, an institutional approach based on the relations of academia, industry and government is deemed important for the adoption of knowledge strategies, which combine education with research and innovation for the development of entrepreneurial activities in the KP region.

After making recommendations for the university and government leaders, the next section comments on the limitations of the study.

### **8.5 Research Limitations**

Like any other research, this study is subject to limitations, which need to be taken into consideration when attempting to generalise findings to the whole research population or trying to apply its proposed model to other research contexts.

Although this study has tried to encompass as many factors as were identified during the literature review, there still may be some important factors which may have been missed by the initial research instrument. For example, collaboration, LOS, and other cultural related factors could have been investigated.

Secondly, the direct effect of environmental factors on SEIs has been analysed. However, there may be some moderators affecting the relation between environmental factors and SEIs which are not explored and discussed, as the research objectives only aimed at exploring the direct impact of environmental factors on SEIs.

Thirdly, the restrictions on resources (time, funds, and effort) meant that only 12 of the 22 universities in the KP region were included in the process of sampling for the questionnaire survey. Although the findings can be generalised to the overall research population with a suitable level of confidence, the researcher is aware that the inclusion of more geographical areas could have enhanced this generalisability. However, it is obvious that a researcher will hardly ever be in a situation where the whole population can be scrutinised (Saunders et al., 2015b; Taherdoost, 2016; Malhotra and Birks, 2018).

Fourthly, the generalisability of the current study findings is limited to its specific context (Pakistan). Other countries may have different environments, cultures and sets of circumstances (Hussein et al. 2010; Blenker et al., 2012 and Mayhew et al., 2012). Therefore, the contextual differences should be considered when trying to generalise the findings of this study or apply its proposed model to other contexts/countries.

Finally, initially, face-to-face interviews were suggested with the Head/Directors of the Business departments of the universities in the KP region. However, due to the Covid-19 situation, online interviews were conducted for which the researcher encountered issues in arranging access. To minimise the interviewer bias, the interviews were audio recorded with the prior permission of the participants.

The acknowledged limitations of this research lead to directions for future research, which are described in the following section.

### **8.6 Directions for Future Research**

To build on the findings achieved by this study, this section offers a number of directions for future research.

Firstly, this study has focused on 13 key determinants for the purposes of analysis and development of the model. Further research could extend such a study for the inclusion of additional factors affecting SEIs; particularly, cultural-related factors could be incorporated. Furthermore, a greater deal of attention and investigation could be focused on the two new emergent themes (U-I-G collaboration and LOS), and their role in influencing the proclivity of students towards entrepreneurship. The addition of cultural, U-I-G and LOS factors would expand our understanding of the impact of the university environment on the SEIs, and the contributions they make towards a conducive entrepreneurial environment.

Secondly, since the data in this study was collected at a single point of time through a cross-sectional survey, in-depth longitudinal research would be useful to determine whether students' attitudes and behaviours towards engagement in entrepreneurship change over time. This could be achieved by applying the research framework to

examine SEIs in Pakistan at different points of time (i.e., at graduation and five years after graduation) and comparing the findings for the different data collection periods.

As this study has developed and validated a measurement instrument (questionnaire) to predict students' entrepreneurial intentions, further validation studies in different contexts would be useful in order to improve the external validity of this instrument. Similarly, to enhance the external validity of the proposed model of this study, future research could be directed to examine the SEIs in other regions of Pakistan such as Punjab, Sindh, Islamabad and Baluchistan. The proposed model can also be examined in other countries with a similar background to Pakistan, such as India, Bangladesh, Sri Lanka, Nepal and Maldives. Another interesting investigation in this connection would be the replication of this study in one or more countries with different cultural settings such as other developing or developed countries. This would verify the robustness of the research framework across different cultural settings as well as develop the understanding of cross-cultural effects on the SEIs.

Moreover, as this study used MBA students as the sample object of analysis for finding the impact of the university environment on their entrepreneurial intentions, future research may be carried out with students from other disciplines, such as engineering and agriculture students in both the KP and the wider Pakistani contexts. Such a comparison may help the policy makers and university administration in extending EE to educational institutions imparting specialised subjects. This replication of the study using different samples will also help in improving the study's external validity.

Even though the Structural Equation Model was able to provide valuable insights regarding the environmental factors related to SEIs, future research could be directed towards improving its predictive power by including the new emerging themes (U-I-G Collaboration and LOS) which was stressed by the interviewees. Future studies may be based on exploring some moderators affecting the relation between environmental factors and SEIs which are not included in this study.

Finally, to optimise the value of this research field to entrepreneurial practices, developing and testing the effectiveness of identified factors on the SEIs should be a clear prerogative for future research.

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## Appendix A: The Questionnaire (Final Version)

### LIVERPOOL JOHN MOORES UNIVERSITY PARTICIPANTS INFORMATION SHEET



**Title of Project:** The Impact of the University Environment on the Students' Entrepreneurial Intentions in the Khyber-Pukhtunkhwa (KP) Region of Pakistan.

**Name of Researcher:** Zafar Ali  
**School/Faculty:** Liverpool Business School

Dear Participant

You are being invited to take part in the above research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

#### **1. What is the purpose of the study?**

The purpose of this research is to investigate the impact of university offerings and external environmental factors on the students' entrepreneurial intentions. The main objective is to create a contextual model that portrays the critical factors affecting students' entrepreneurial intentions in the KP region of Pakistan. The study will contribute to the knowledge in the field of entrepreneurship education in Pakistan.

#### **2. Do I have to take part?**

This questionnaire is intended for the Masters students only. Also, the participation in this study is **voluntary** so it is up to you to decide whether to take part in the research or not. If you do wish to participate, you will be given this information sheet. You are still free to withdraw at any time and without giving a reason. You may withdraw your participation at any time during the study that will not affect your rights. Data cannot be withdrawn once the questionnaire has been completed and placed in the collection box. By completing the questionnaire, the participants will be consenting to be part of this research.

#### **3. What will happen to me if I take part?**

Your participation in the study is by being involved in filling the attached questionnaire that would serve as the primary source of data. It will take approximately 10-15 minutes to answer the questionnaire.

The questionnaire relates to demographics, participant's attitude about the internal and external environmental factors which impact on the students' Entrepreneurial Intentions and the overall impact of the university environment in this regard.

The data collected will be solely for the research/academic purposes and your identity will be kept anonymous. Therefore, I can confirm that there will be no risks to you due to your participation. The data (completed questionnaires) will be used for further analysis and will be treated confidentially, stored securely at the university. Only the researcher and his supervisory team will have access to it. All personal information will be retained for a period of 5 years when it will then be destroyed.

#### **4. Are there any risks / benefits involved?**

There are no known or expected risks for involvement in this study. However, the results of the study will be shared with the research participants (on request as researcher email is provided). This investigation may provide business students (research participants) with information and guidance on how the university offerings can be beneficial to develop entrepreneurial skills.

#### **5. Will my taking part in the study be kept confidential?**

Yes. The data collected will be solely for the academic use and will not be sold to any third party or so. The demographic data such as age, gender, course details and university details will only be used for the academic research purpose. All the questionnaires will be anonymised and no names will be used in the study itself or in any further publications. The data collected will be stored on the password-protected computers at LJM University, Liverpool UK. The access to these computers is only given to the researcher. The data will be stored for the purpose of this study for next 5 years and thereafter the data will be destroyed.

**This study has received ethical approval from LJMU's Research Ethics Committee**

(Approval Ref: **18/LBS/003**)

**Thank you for your valuable assistance and your co-operation is highly appreciated.**

#### **Contact details:**

Name of Researcher: Zafar Ali  
Email: [Z.Ali@2017.ljmu.ac.uk](mailto:Z.Ali@2017.ljmu.ac.uk)

Name of Supervisor: Dr. Phil Kelly  
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#### **Address:**

Liverpool Business School  
Faculty of Business and Law  
Liverpool John Moores University  
Redmonds Building  
Brownlow Hill  
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L3 5UG

**If you any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact [researchethics@ljmu.ac.uk](mailto:researchethics@ljmu.ac.uk) and your communication will be re-directed to an independent person as appropriate.**

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## SURVEY QUESTIONNAIRE FOR UNIVERSITY STUDENTS

**Target Audience: Final Year Masters Students of Business Departments/Institutes at the Universities of the Khyber Pukhtunkhwa, Pakistan**

### **Part One – About You**

1.1) Please indicate your gender

Male  Female

1.2) Indicate your age group (years)

21 -- 25  26 -- 30  31 or Over

1.3) Indicate your university status

Public  Private

1.4) Indicate your course

MBA   Other, please specify \_\_\_\_\_

1.5) Indicate your mode of study: Full-time  Part-time

1.6) Indicate your Semester

1<sup>st</sup>  2<sup>nd</sup>  3<sup>rd</sup>  4<sup>th</sup>  Other, please specify \_\_\_\_\_

1.7) Indicate your area of specialisation (majors)

Accounting  Entrepreneurship  Finance  General  HRM

Marketing  Other, please specify \_\_\_\_\_

1.8) Does any of your family member own business? Yes  No

1.9) Have you ever held a job where you were paid? Yes  No

1.10) Have you any experience of running a business? Yes  No

**Part Two - Participants' attitudes about the Environmental Factors related to Entrepreneurial Intentions in the universities of the Khyber-Pakhtunkhwa, Pakistan.**

This questionnaire is with reference to the impact of both the internal and external factors of the university environment on the entrepreneurial intentions of students in the KP Region of Pakistan. Using the ratingscale provided, please tick (✓) in the box that indicates your level of agreement/ disagreement with the following statements.

<b>Section 1 - Internal Environmental Factors (University's Entrepreneurial Offerings)</b>					
<b>Statements</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>A- Entrepreneurship Education:</b> My university has...					
(2.1) elective courses on entrepreneurship.					
(2.2) project work focused on entrepreneurship.					
(2.3) a bachelor or masters study on entrepreneurship.					
(2.4) conferences or workshops on entrepreneurship.					
(2.5) courses to provide students with the knowledge needed to start a new business.					
<b>B- Entrepreneurship Support Programme:</b> My university has...					
(2.6) a dedicated Entrepreneurship Support Programme.					
(2.7) counselling/mentoring regarding starting a new firm.					
(2.8) technical support to start a new firm.					
<b>C- Entrepreneurial Networking:</b> My university has networking events that ...					
(2.9) have prominent entrepreneurs.					
(2.10) introduce me to successful entrepreneurs.					
(2.11) help in promoting entrepreneurial activities.					
(2.12) help in accessing key suppliers/ distributors.					
(2.13) help in accessing available resources.					
<b>D- Supportive Faculty:</b> My University's faculty...					
(2.14) has a supportive attitude towards entrepreneurship.					
(2.15) motivates me to become entrepreneur.					
(2.16) gives importance to entrepreneurship.					
<b>E- An Entrepreneurship Club/Society...</b>					
(2.17) exists in my university.					
(2.18) gives me an opportunity to engage in entrepreneurial activities.					
(2.19) provides a forum for sharing ideas.					
(2.20) helps students develop their own ideas.					

Statements Continued...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>F- Entrepreneurial Resources:</b> My university has...					
(2.21) Seed funding for new venture creation.					
(2.22) Incubator facilities.					
(2.23) Market Research resources.					
<b>G- Linkages with Society:</b> My university has...					
(2.24) established linkages with local businesses.					
(2.25) collaboration with Government institutions e.g., SMEDA					
(2.26) exchange programmes with other universities.					
<b>Section 2 - External Environmental Factors (Contextual Factors)</b>					
Note: These factors are in relation to the KP Region only.					
Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>A- Availability of Finances (Capital Availability)</b>					
(2.27) Funds can be easily secured for venture creation.					
(2.28) Commercial Banks readily give credit for establishing new business.					
(2.29) Small and Medium Enterprise (SME) Banks give easy loans for venture creation.					
(2.30) Venture Financing is easily available for establishing a new firm.					
<b>B- Government Policies (State Incentives)</b> The Government...					
(2.31) supports Entrepreneurship well.					
(2.32) policies are conducive for the promotion of entrepreneurship.					
(2.33) provides several incentives for new entrepreneurs.					
(2.34) offers ample grants for starting a business.					
(2.35) offers ample subsidies for starting a business.					
<b>C- Regulatory Environment</b>					
(2.36) The regulatory environment supports entrepreneurship.					
(2.37) The laws regarding registration of new ventures are flexible.					
(2.38) Legal requirements for establishing a business can be easily met by entrepreneurs.					
(2.39) The bureaucratic procedures for founding a new company are facilitative.					
<b>D- Economic Environment</b>					
(2.40) The overall economy of the KP region is stable.					
(2.41) The economic growth in the region is satisfactory.					
(2.42) There is generally a favourable environment for investment.					

Statements Continued...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>E- Structural Support</b>					
(2.43) There is a well-functioning support infrastructure in place to support the start-up of new firms.					
(2.44) There are sufficient consulting firms that can help start up a business.					
(2.45) There is adequate technical support available for start-ups.					
(2.46) There is a well-developed transportation /road system for linking start-ups at different locations.					
<b>F- Workforce Availability</b>					
(2.47) Ample workforce is available to entrepreneurs.					
(2.48) Skilled workforce is available in the region.					
(2.49) An experienced workforce is easily available in the KP region.					
(2.50) There are enough sub-contractors, suppliers and consultants to support new firms in the KP region.					

Section 3- Students' Entrepreneurial Intentions					
Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>A- Entrepreneurial Intentions</b>					
(3.1) I would very much like to be an entrepreneur.					
(3.2) I have seriously considered starting my own business immediately after graduation.					
(3.3) I would strongly consider starting my own business sometime in the future.					
(3.4) I would strongly consider starting my own business if I cannot find a job.					

**Continued**

**Part Three - Taking an overview of the whole project about the impact of the university environment on your entrepreneurial intentions...**

Please rank the following **in order** of the importance from 1 to 7 where 1 is the most important to you and 7 is the least important. Please do not rank items individually.

University Offerings	Rank
Entrepreneurship Education	
Entrepreneurship Support Programme	
Entrepreneurial Networking	
Supportive Faculty	
Entrepreneurship Club	
Entrepreneurial Resources	
Linkages with Society	

Please rank the following **in order** of the importance from 1 to 6 where 1 is the most important to you and 6 is the least important. Please do not rank items individually.

Contextual Factors	Rank
Availability of Finances	
Government Policies	
Regulatory Environment	
Economic Environment	
Structural Support	
Workforce Availability	

**Part Four-** In your opinion, are there any other internal/external factors that might influence Entrepreneurial Intentions.

**Thank you for your co-operation**

## Appendix B: The Interview Information Sheet

LIVERPOOL JOHN MOORES UNIVERSITY



### PARTICIPANTS INFORMATION SHEET

**Title of Project:** The Impact of the University Environment on the Students' Entrepreneurial Intentions in the Khyber-Pukhtunkhwa (KP) Region of Pakistan.

**Name of Researcher:** Zafar Ali

**School/Faculty:** Liverpool Business School

Dear Sir/Madam

You are being invited to take part in the above research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

#### 1. What is the purpose of the study?

The purpose of this research is to investigate the impact of university offerings and external environmental factors on the students' entrepreneurial intentions. The main objective is to create a contextual model that portrays the critical factors affecting students' entrepreneurial intentions in the KP region of Pakistan. The study will contribute to the knowledge in the field of entrepreneurship education in Pakistan.

#### 2. Do I have to take part?

No, there is no obligation to participate in the study. The participation in this study is **voluntary** so it is up to you to decide whether to take part in the research or not. If you do wish to participate, you will be given this information sheet. You are still free to withdraw at any time and without giving a reason. You may withdraw your participation at any time during the interview that will not affect your rights.

#### 3. What will happen to me if I take part?

Your participation is completely voluntary – you do not have to participate in the study if you don't wish. If you agree to participate, I will ask you to sign a consent form to show you have agreed to take part. You will be asked for an appointment to conduct an interview or to fill a questionnaire. Please allow about 1 hour for the interview. The questions during interview will relate to the entrepreneurial support available at your university, the internal and external environmental factors which impact on the students' Entrepreneurial Intentions and the overall impact of the university environment in this regard.

#### 4. Will the data be kept confidential?

The data collected will be solely for the research/academic purposes and your identity will be kept anonymous. Therefore, I can confirm that there will be no risks to you due to your participation. The data (interview transcripts) will be used for further analysis and will be treated confidentially, stored securely at the university. Only the researcher and his supervisory team will have access to it. All personal information will be retained for a period of 5 years when it will then be destroyed.

### **5. Are there any risks/benefits involved?**

There are no known or expected risks for involvement in this study. However, the results of the study will be shared with the research participants (on request as researcher email is provided). This investigation may provide the business school leaders (interview participants) with information and guidance on how the university offerings can be beneficial to develop entrepreneurial skills of the students.

The Final decision about participation is yours. Please feel free to contact me if you have any questions regarding the research.

**This study has received ethical approval from LJMU's Research Ethics Committee**

(Approval Ref: **18/LBS/003**)

**Thank you for your valuable assistance and your co-operation is highly appreciated.**

#### **Contact details:**

Name of Researcher: Zafar Ali  
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**If you any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact [researchethics@ljmu.ac.uk](mailto:researchethics@ljmu.ac.uk) and your communication will be re-directed to an independent person as appropriate.**

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## Appendix C: Interview Guide – Themes and Questions

### (A) General and Demographic Information:

<b>Gender</b>	
<b>Age</b>	
<b>Education</b>	
<b>Position</b>	
<b>Institute/University</b>	
<b>Day</b>	
<b>Date</b>	
<b>Start Time</b>	
<b>End Time</b>	
<b>Contact Number (optional)</b>	
<b>Email (Optional)</b>	
<b>Agreed or did not agree to record</b>	

### (B) General Questions:

1. How long have you been working in this Institute/university?
2. Can you explain briefly your role?

### (C) Background information about Entrepreneurship Education at the University:

3. Is a dedicated Bachelors or Masters programme in Entrepreneurship offered at your university?
4. Which elective courses on entrepreneurship are available at your university?
5. Do you think the courses at your university provide students with ample knowledge to start their own business?

### (D) Interviewees' perceptions about the Entrepreneurship Support Programmes in the Universities in the KP Region:

6. Apart from education, do you think extra-curricular activities can help in enhancing Entrepreneurial intentions of the students?
7. In your opinion, what are the salient features of an Entrepreneurship Support Programme at the university?

8. To what extent, do you think the networking events can help in promoting entrepreneurial activities?
9. Do you have faculty members who are qualified in entrepreneurship related fields?
10. What entrepreneurial resources are available to those students who want to pursue their career as an entrepreneur after graduation?
11. Have your university got established linkages with the other Government departments such as Department of Youth Affairs, Enterprise Development Authority and Chamber of Commerce etc?
12. So far, how supportive are the universities in the KP region towards entrepreneurship in your view?

**(E) Interviewees' perceptions about the External Environmental Factors related to Entrepreneurship development in KP Region:**

13. In your opinion, what are the critical factors affecting the entrepreneurship development in the KP Region?
14. Can you describe key drivers that you think are encouraging entrepreneurship development in the KP Region?
15. Can you describe key barriers that you think are discouraging entrepreneurship development in the KP Region?
16. Do the Government policies influence the university efforts towards entrepreneurship development?
17. Is the general infrastructure of the KP region conducive for entrepreneurship?
18. Do you believe that the regulatory environment of the KP region is supportive for entrepreneurs?
19. Do you believe that work force availability in the KP region is sufficient to cater the needs of entrepreneurs?
20. Any recommendations you would like to suggest for the universities to become entrepreneurship oriented.

## Appendix D: Data Analysis Techniques Used

Techniques (Software Package used)	Purpose of the Analysis
Cronbach's Alpha Test (SPSS 24)	<ul style="list-style-type: none"> <li>- To assess construct internal consistency of the current study questionnaire.</li> </ul>
Confirmatory Factor Analysis- CFA (AMOS 24)	<ul style="list-style-type: none"> <li>- To validate relationships between the observed and latent variables.</li> <li>- To confirm the validity and reliability of the scales and measures derived from EFA.</li> <li>- To assess the goodness-of-fit for the measurement model in the present study.</li> </ul>
Content Analysis (NVivo)	<ul style="list-style-type: none"> <li>- To organise, classify, sort and arrange qualitative data (primary and secondary).</li> <li>- To clarify meanings, organise and explain data, to search for relationships, and to gain an understanding of the various dimensions explored in semi-structured interviews.</li> </ul>
Data Management	<ul style="list-style-type: none"> <li>- To check the missing data and potential outliers, which can affect the results of the analysis.</li> <li>- To check the normality of the quantitative data in the current research.</li> </ul>
Descriptive Statistics (SPSS 24)	<ul style="list-style-type: none"> <li>- To create a profile data of the surveyed respondents' characteristics.</li> <li>- To summarise the results in a form of easy-to-understand tables and charts.</li> </ul>
Exploratory Factor Analysis-EFA (AMOS 24)	<ul style="list-style-type: none"> <li>- To identify the underlying structure of the research model constructs and the observable variables for these constructs.</li> <li>- To summarise and reduce the number of study variables to a smaller and more manageable set of variables.</li> <li>- To explain the variance in the observed variable in terms of underlying latent factors.</li> </ul>
Kaiser-Meyer-Olkin (KMO) Bartlett's test of Sphericity (SPSS 24)	<ul style="list-style-type: none"> <li>- To assess the suitability of the data set for EFA, sample size, and the pattern of relationships among the variables.</li> </ul>
Regression Analysis	<ul style="list-style-type: none"> <li>- To analyse the relationship between dependent and independent variables.</li> <li>- To examine the ability of the independent constructs in the proposed model.</li> </ul>
Structural Equation Modelling-SEM (AMOS 24)	<ul style="list-style-type: none"> <li>- To assess the goodness-of-fit for the structural model of the present study.</li> <li>- To test the relationships among the different constructs in the proposed model.</li> </ul>

## Appendix E: Model-fit Summary for CFA (First-run)

### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	171	1839.923	864	.000	2.130
Saturated model	1035	.000	0		
Independence model	45	11379.938	990	.000	11.495

### RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.060	.832	.799	.695
Saturated model	.000	1.000		
Independence model	.320	.210	.174	.200

### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.838	.815	.907	.892	.906
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.873	.732	.791
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

### NCP

Model	NCP	LO 90	HI 90
Default model	975.923	856.307	1103.255
Saturated model	.000	.000	.000
Independence model	10389.938	10049.965	10736.384

### FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	4.779	2.535	2.224	2.866
Saturated model	.000	.000	.000	.000
Independence model	29.558	26.987	26.104	27.887

### RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.054	.051	.058	.023
Independence model	.165	.162	.168	.000

### AIC

Model	AIC	BCC	BIC	CAIC
Default model	2181.923	2228.330	2858.371	3029.371
Saturated model	2070.000	2350.885	6164.292	7199.292
Independence model	11469.938	11482.151	11647.951	11692.951

**ECVI**

<b>Model</b>	<b>ECVI</b>	<b>LO 90</b>	<b>HI 90</b>	<b>MECVI</b>
<b>Default model</b>	<b>5.667</b>	<b>5.357</b>	<b>5.998</b>	<b>5.788</b>
<b>Saturated model</b>	<b>5.377</b>	<b>5.377</b>	<b>5.377</b>	<b>6.106</b>
<b>Independence model</b>	<b>29.792</b>	<b>28.909</b>	<b>30.692</b>	<b>29.824</b>

**HOELTER**

<b>Model</b>	<b>HOELTER .05</b>	<b>HOELTER .01</b>
<b>Default model</b>	<b>196</b>	<b>202</b>
<b>Independence model</b>	<b>37</b>	<b>38</b>

**Appendix F: Model-fit Summary for CFA (Second-run)**

**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	158	1675.283	832	.000	2.014
Saturated model	990	.000	0		
Independence model	44	11088.161	946	.000	11.721

**RMR, GFI**

Model	RMR	GFI	AGFI	PGFI
Default model	.060	.841	.810	.707
Saturated model	.000	1.000		
Independence model	.322	.211	.174	.202

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.849	.828	.918	.905	.917
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

**Parsimony-Adjusted Measures**

Model	PRATIO	PNFI	PCFI
Default model	.879	.747	.806
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

**NCP**

Model	NCP	LO 90	HI 90
Default model	843.283	730.384	963.933
Saturated model	.000	.000	.000
Independence model	10142.161	9806.465	10484.325

**FMIN**

Model	FMIN	F0	LO 90	HI 90
Default model	4.351	2.190	1.897	2.504
Saturated model	.000	.000	.000	.000
Independence model	28.800	26.343	25.471	27.232

**RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.051	.048	.055	.269
Independence model	.167	.164	.170	.000

**AIC**

Model	AIC	BCC	BIC	CAIC
Default model	1991.283	2033.107	2616.306	2774.306
Saturated model	1980.000	2242.059	5896.279	6886.279
Independence model	11176.161	11187.808	11350.218	11394.218

**ECVI**

<b>Model</b>	<b>ECVI</b>	<b>LO 90</b>	<b>HI 90</b>	<b>MECVI</b>
<b>Default model</b>	<b>5.172</b>	<b>4.879</b>	<b>5.486</b>	<b>5.281</b>
<b>Saturated model</b>	<b>5.143</b>	<b>5.143</b>	<b>5.143</b>	<b>5.824</b>
<b>Independence model</b>	<b>29.029</b>	<b>28.157</b>	<b>29.918</b>	<b>29.059</b>

**HOELTER**

<b>Model</b>	<b>HOELTER .05</b>	<b>HOELTER .01</b>
<b>Default model</b>	<b>207</b>	<b>214</b>
<b>Independence model</b>	<b>36</b>	<b>37</b>

**Appendix G: Model-fit Summary for CFA (Third-run)**

**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	147	878.825	519	.000	1.693
Saturated model	666	.000	0		
Independence model	36	8526.231	630	.000	13.534

**RMR, GFI**

Model	RMR	GFI	AGFI	PGFI
Default model	.049	.892	.861	.695
Saturated model	.000	1.000		
Independence model	.325	.245	.202	.232

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.897	.875	.955	.945	.954
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

**Parsimony-Adjusted Measures**

Model	PRATIO	PNFI	PCFI
Default model	.824	.739	.786
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

**NCP**

Model	NCP	LO 90	HI 90
Default model	359.825	281.863	445.661
Saturated model	.000	.000	.000
Independence model	7896.231	7601.362	8197.542

**FMIN**

Model	FMIN	F0	LO 90	HI 90
Default model	2.283	.935	.732	1.158
Saturated model	.000	.000	.000	.000
Independence model	22.146	20.510	19.744	21.292

**RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.042	.038	.047	.996
Independence model	.180	.177	.184	.000

**AIC**

Model	AIC	BCC	BIC	CAIC
Default model	1172.825	1204.084	1754.333	1901.333
Saturated model	1332.000	1473.621	3966.588	4632.588
Independence model	8598.231	8605.886	8740.641	8776.641

**ECVI**

<b>Model</b>	<b>ECVI</b>	<b>LO 90</b>	<b>HI 90</b>	<b>MECVI</b>
<b>Default model</b>	<b>3.046</b>	<b>2.844</b>	<b>3.269</b>	<b>3.127</b>
<b>Saturated model</b>	<b>3.460</b>	<b>3.460</b>	<b>3.460</b>	<b>3.828</b>
<b>Independence model</b>	<b>22.333</b>	<b>21.567</b>	<b>23.116</b>	<b>22.353</b>

**HOELTER**

<b>Model</b>	<b>HOELTER .05</b>	<b>HOELTER .01</b>
<b>Default model</b>	<b>252</b>	<b>262</b>
<b>Independence model</b>	<b>32</b>	<b>33</b>

**Appendix H: Model-fit Summary for SEM with DV (SEIs)**

**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	160	908.391	543	.000	1.673
Saturated model	703	.000	0		
Independence model	37	8722.188	666	.000	13.096

**RMR, GFI**

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.891	.859	.689
Saturated model	.000	1.000		
Independence model	.325	.242	.200	.229

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.896	.872	.955	.944	.955
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

**Parsimony-Adjusted Measures**

Model	PRATIO	PNFI	PCFI
Default model	.815	.730	.778
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

**NCP**

Model	NCP	LO 90	HI 90
Default model	365.391	286.281	452.383
Saturated model	.000	.000	.000
Independence model	8056.188	7758.109	8360.715

**FMIN**

Model	FMIN	F0	LO 90	HI 90
Default model	2.359	.949	.744	1.175
Saturated model	.000	.000	.000	.000
Independence model	22.655	20.925	20.151	21.716

**RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.042	.037	.047	.998
Independence model	.177	.174	.181	.000

**AIC**

Model	AIC	BCC	BIC	CAIC
Default model	1228.391	1263.434	1861.325	2021.325
Saturated model	1406.000	1559.971	4186.954	4889.954
Independence model	8796.188	8804.292	8942.554	8979.554

**ECVI**

<b>Model</b>	<b>ECVI</b>	<b>LO 90</b>	<b>HI 90</b>	<b>MECVI</b>
<b>Default model</b>	<b>3.191</b>	<b>2.985</b>	<b>3.417</b>	<b>3.282</b>
<b>Saturated model</b>	<b>3.652</b>	<b>3.652</b>	<b>3.652</b>	<b>4.052</b>
<b>Independence model</b>	<b>22.847</b>	<b>22.073</b>	<b>23.638</b>	<b>22.868</b>

**HOELTER**


<b>Model</b>	<b>HOELTER .05</b>	<b>HOELTER .01</b>
<b>Default model</b>	<b>254</b>	<b>264</b>
<b>Independence model</b>	<b>33</b>	<b>34</b>


# Appendix I: Ethical Approval by LJMU Research Ethics Committee

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Ethics PR - Approved - Ali - LBS - REF: 18/LBS/003

 Research Ethics Proportionate Review  
To: Ali, Zafar  
Cc: Kelly, Phil; Research Ethics Proportionate Review; Williams, Mandy

 Ali - LBS - Final.pdf  
2 MB

Dear Zafar

With reference to your application for Ethical Approval

**REF: 18/LBS003 - Zafar Ali - PGR - An Evaluation of the impact of University Environment on the Students' Entrepreneurial Intentions in the Khyber-Pukhtunkhwa Region of Pakistan (Dr Phil Kelly / Dr Seng Kok)**

**UREC decision: Approved**

The University Research Ethics Committee (UREC) has considered the above application by proportionate review. I am pleased to inform you that ethical approval has been granted and the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project are reported to the Committee immediately by emailing [researchethics@lmu.ac.uk](mailto:researchethics@lmu.ac.uk)
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately emailing [researchethics@lmu.ac.uk](mailto:researchethics@lmu.ac.uk)
- the LJMU logo is used for all documentation relating to participant recruitment and participation eg poster, information sheets, consent forms, questionnaires. The LJMU logo can be accessed at <http://www2.ljmu.ac.uk/corporatecommunications/60486.htm>


Where any substantive amendments are proposed to the protocol or study procedures further ethical approval must be sought (<https://www2.ljmu.ac.uk/rgso/93205.htm>)

Applicants should note that where relevant appropriate gatekeeper / management permission must be obtained prior to the study commencing at the study site concerned.

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be **27<sup>th</sup> March 2023**. An application for extension of approval must be submitted if the project continues after this date.

Yours sincerely

Charlotte Mclean

  
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