

# Unveiling the Dynamics of Vocational Training Sustainability: Insights from a Field Study

Muhammad Adnan<sup>1</sup>, Muhammad Zubair Khan<sup>2</sup>, Muhammad Niaz Khan<sup>3</sup>

## Abstract

The study examines the impact of trainee demographics, psychological attributes, social dynamics, and organizational influences on the sustainability of vocational training outcomes. The data was collected through structured questionnaires from 255 respondents who were ex-trainees of 6 vocational organizations of district Bannu, Khyber Pakhtunkhwa (KP) Pakistan. The selection of this location was primarily motivated by the authors' convenient access to data, their intimate familiarity with the local culture and context, and generalizability of the research to southern part of the province. The study's outcomes indicate that specific demographic factors, such as belonging to the 31-40 age group ( $2.62 \pm 0.92$  min,  $p = 0.000$ ), possessing a bachelor's degree ( $4.2667 \pm .65$  min,  $p = .000$ ), being unmarried ( $3.6 \pm 1.13$  min,  $p = .000$ ), and having a guardian employed as a skilled worker ( $2.6462 \pm .83$  min,  $p = .000$ ), exhibit a statistically significant influence ( $p < .05$ ) on the maintenance of skills. Furthermore, the result reveals that organizational, social, and psychological influences have moderate positive and significant associations with the sustainability of vocational training. Our research can provide valuable insights to practitioners and policymakers of international developmental organizations, non-governmental vocational organizations, and training institutes involved in candidate selection for training programs. Specifically, it can assist organizations in identifying individuals who are more likely to sustain the acquired skills in the future and leverage them for their benefit.

**Keywords:** Skills sustainability, Vocational training, Vocational skills, Training sustainability project sustainability

## 1. Introduction

Sustainability, often used interchangeably with development success, was described as the foremost and leading development challenge of the 1990s (Dichter, 1997). Sustainability can be defined as the continuation of activities and the lasting benefits attained even after the termination of donor funding (Bossert, 1990). In this context,

1 University of Science and Technology, Bannu

2 University of Science and Technology, Bannu. Email: mzkhan@ustb.edu.pk

3 University of Science and Technology, Bannu

### ARTICLE HISTORY

19 May, 2023 Submission Received

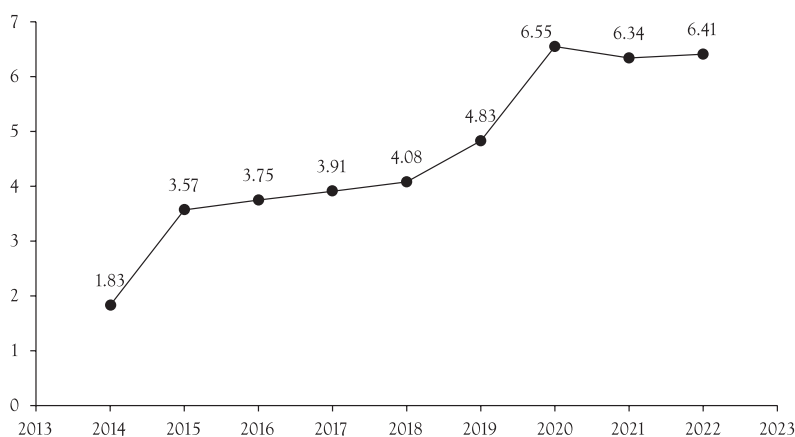
21 Jul, 2023 First Review

23 Aug, 2023 Second Review

18 Sep, 2023 Accepted

the present paper assesses the lasting impact of vocational trainings. Specifically, it examines whether skill trainings enable participants to launch their own ventures, obtain a job, or transfer skills to others. By effectively utilizing their vocational skills in the workplace or entrepreneurial pursuits, individuals have the potential to enhance productivity, foster innovation, and contribute to overall economic development. For example, Fatima & Saleem (2016) discovered that vocational education significantly contributes to economic growth of Pakistan by enhancing labor force efficiency and enabling income generation. It also plays a crucial role in a country's economic development and social progress through the acquisition of knowledge and skills.

Certainly, poverty and unemployment are critical social and economic issues in developing countries. According to the world bank report titled *Poverty and Equity Brief (2023)*, 37.2 percent of the population in Pakistan lives below the poverty line, which is an increase of 3 million people since 2018. KP is the third poorest province in the country, with a poverty ratio of 24.3 percent, slightly better than Sindh and Baluchistan. According to Pakistan poverty alleviation fund report (2018), district "Bannu" is classified as one of the poorest districts, with a poverty intensity rate of 0.519, ranking it 64th district-wise in the country. Pakistan faces another significant challenge in the form of high unemployment. One of the main reasons for this issue is the rapid increase in population. The level of employment and productivity in a country is often used as a measure of prosperity (Torres, 2011). Unemployment refers to individuals who are actively seeking employment but are unable to find one. Figure 1 shows the unemployment rate from 2014 to 2022. It started at 1.83 percent in 2014 and gradually increased until 2019, when it reached 4.83 percent. The COVID-19 pandemic caused a significant jump in 2020 to 6.55 percent, with slight fluctuations in subsequent years.



**Figure 1:** Unemployment rate in Pakistan

The figure shows the unemployment % of total labor force in Pakistan Source: World Bank data

To address these challenges, the government has implemented initiatives like Wasilla Rozgar, Wasilla Haq, the Benazir Income Support Programme, and the Youth Loan Scheme. The private sector is also involved in projects to improve the socio-economic conditions of the low-income class. Vocational colleges and Vocational Education and Training (VET) play a crucial role in promoting entrepreneurship (Cao, 2022) and have been linked to improvements in employment (Gupta & Datta, 2023), productivity, health, income, and poverty reduction (King & Palmer, 2007; McGrath & Powell, 2016). Government-run technical and vocational institutions provide vocational training programmes to develop a skilled labor force, foster self-employment, and reduce poverty while increasing employment rates.

Technical and vocational education focuses on developing occupational skills. It involves three years of education after matriculation or 10th grade and offers vocational training certificate courses of different durations (three months, six months, Nine months, one year, and 18 months) after 8th or 10th grade. These diploma and certificate programmes cover various technologies and are open to both genders throughout the country. In Pakistan, various technical and vocational fields are being offered, ranging from three-month certificate courses to three-year Diploma of Associate Engineering (DAE). All these diverse programmes serve the purpose of providing employment opportunities, including both traditional employment and self-employment ventures.

The vocational fields offered vary in different areas of Pakistan on the basis of demand. In district Bannu, technical and vocational colleges offer three-month to one-year skills training, which includes Sewing and embroidery, electrical, refrigeration, air conditioning, pipe fitting, and other trainings. Similarly, NGO's also run skill development projects where unprivileged and deserving communities benefit from skills training. These vocational skills enable people to earn income and develop crucial life skills to give them economic independence (Bairagya, 2021). Government institutions, NGOs, and other international developmental organizations such as USAID and UNDP utilise their precious time, human resources, and large amounts of funds for the completion of projects and put their efforts into making such projects successful.

Despite the existence of numerous large and small vocational institutes in Pakistan, the successful translation of these initiatives into the development of a skilled and capable workforce remains challenging and elusive. A significant challenge arises when a community fails to witness the continuation of skills and long-term benefits once donor funding comes to an end, highlighting the crucial issue of sustainability that requires attention from researchers. Previous studies have primarily focused on examining the sustainability of educational projects (Mendenhall, 2014), development projects (Peter, 2012), and health projects (Sarriot et al 2004). The socio-economic

sustainability of vocational projects has not received adequate attention in prior research. There is certainly a need to investigate the effect of vocational programmes to analyse the long-term benefits, making this study crucial in filling this research gap.

The current study addresses the research question “What are the individual and training-related factors that exert influence on the sustainability of vocational training and its enduring benefits? To answer this question, we adopted a strategy to trace the trainees who graduated from the vocational centers in district Bannu through structured questionnaires. Out of 600 trainees who successfully obtained training in these programmes, we obtained data of 255 participants. The data collected through structured questionnaires from trainees at vocational training centers across the district. The study examined the effect of individual’s traits, including psychological and social, as well as the characteristics of the organizational features, on the sustainability of the training programmes. We define the sustainability of training in terms of self-employment, obtaining a job, or involvement in transferring the same skills to others. We find answer of the research questions that age, education, marital status, and guardian occupation significantly influence the sustainability of vocational skills. Additionally, organizational, social, and psychological factors have a positive and significant effect on sustainability.

In the following sections, we explore literature. Subsequently, the research methodology section describes the data collection methods and instrumentation. Next, the analysis part presents the statistical analyses and discusses the results in relation to the research hypothesis and real-world scenario. The final part embraces conclusion, theoretical contribution, and future direction.

## **2. Literature Review**

Sustainability is defined as the aim to “[meet] the needs of the present without compromising the ability of future generations to meet their own need” (Brundtland, 1987). Bossert, (1990) defined the term as the continuation of activities and the lasting benefits attained even after the termination of donor funding. This definition has been widely used by researchers. Given these considerations, the definition of sustainability can be operationalized within the context of vocational training projects. It entails “the sustained application of acquired skills for entrepreneurship, employment, and the transfer of skills to others after the completion of the project phase and to maintain skills for economic independence.

### **2.1. Factors affecting project sustainability**

A project is a collection of tasks that need to be finished within a certain time-

frame to achieve specific goals (Ingvarsson, Hallin & Kier, 2023). NGO projects often run by private individual or group other than public organization. Tall, Matarneh, Sweis, Sweis, and AlBalkhy (2023) discovered that organizational structure, organizational culture, and funding are the key elements of a successful NGO-based project. Rosenberg-Yunger, Daar, Singer and Martin (2008) underscored the significance of establishing relationships with the host government and community-based solutions to ensure sustainability of programs aimed at caring for orphaned and vulnerable children. They further indicated that project fund and project duration have no relationship with sustainability but financial and government support is crucial for sustainability. Similarly, Mendenhall (2014) demonstrate, that bureaucratic or upper management obstacles , insufficient allocation of funds, inadequate staff education, capacity limitations, and limited community involvement can have a profound influence on the long-term sustainability of educational support projects implemented by NGOs.

Shediak-Rizkallah and Bone (1998) presented a theoretical framework in primary health care projects which describe sustaining health benefits consisted of three major pillars. First, achievement of sustaining health benefits through the continuation of preliminary programs. Second, to run the project actions within organization structure and third, building the capacity of community. Sarriot et al. (2004) found important factors in study of 30 NGO's carried health project (funded by USAID). They found community ownership, community capacity development, identification of community-relevant needs, and engagement in sectors beyond health all contribute to creating favorable and essential conditions for sustainable health and play a crucial role in ensuring sustainability. Peter (2012) underscored the significance of community ownership, adherence to committee decisions, and compliance with applicable laws and regulations as key factors in ensuring the long-term sustainability of water supply schemes. Gebrehiwot (2006) indicated that the sustainability of rural water supply scheme can be categorized into pre- and post-execution factors. Before implementation, the vital factors are community participation in planning and decision making of organization, choosing technology for project execution, selection of best location, demand-related work, and training of project employees. Post-execution factors are technical assistance from upper management, public satisfaction, institutional and financial management and willingness to sustain the project.

## **2.2. Demographics features and sustainability of vocational trainings**

The demographics are crucial for vocational projects, particularly regarding women's skills project. This study specifically examines candidate demographics encompassing age, educational background, marital status, the employment status

of their guardian, and the type of training they have received. In addition, the study included responses from both male and female skilled workers. Regarding gender, the study revealed that there is a higher number of male entrepreneurs compared to females. However, it is noteworthy that in recent years, there has been a growing inclination among females towards entrepreneurial activities. This trend is expected to continue to increase in the future. (Torrington, Hall & Taylor, 2005). Mazzarol, Volery, Doss and Thein (1999) discovered that male are more likely to become founder of a business than female. In addition, Kolvereid (1996) conducted a study that found a significant difference in entrepreneurial intention between men and women, with men exhibiting a higher level of entrepreneurial intent. NGOs targeted in the study are implementing skill development projects specifically for impoverished women. The aim is to address poverty and empower these women through vocational training with an entrepreneurial focus. Encouraging women's entrepreneurship is seen as a solution to their unemployment and a means to attain economic independence (Ecevit, 2007).

Age is a crucial variable that is commonly employed by researchers in contemporary social research (Aapola, 2002). Reynold, Carter, Gartner and Greene (2004) analyzed that people are more entrepreneurially active in the age interval 25-44 years. Sinha, (1996) found that successful entrepreneurs in India are usually younger. Bönthe and Piegeler (2013) described that individual's decision to start a business is influenced by his or her age and by the geographical area where the individual lives.

The educational background of training participants plays a significant role in the attainment of enduring project benefits. Research indicates a direct correlation between education and the achievement of desired training outcomes (Baumgartel & Jeanpierre, 1972). Specifically, individuals with higher levels of education exhibit a greater propensity to realize desired results and tend to be more motivated learners (Reeve, 2009). Bazan et al (2020a) proposed that the educational attainment and the socioeconomic background of trainees exert a notable influence on the sustainability of vocational projects. Furthermore, the same study advocates for the significance of conducting mathematical and literacy assessments of prospective candidates before enrolling them in vocational training programs, underlining the importance of this criterion in the selection process. Jyoti (2011) described that formal education is not necessary for females to become entrepreneur.

Literature shows that marital status of trainees play vital role in obtaining project outcomes for instance, Fletcher, Dewberry and Goggin (2001) identified that the marital status of trainees constitutes a significant factor in realizing the desired project outcomes

The advantages of Vocational Education and Training are contingent upon the

abilities of individual students and their family background, as highlighted by (Hoeckel 2008). Family support and the possession of technical skills emerge as critical determinants shaping an individual's trajectory toward entrepreneurship. The study further elucidates that respondents often gravitate towards professions rooted in their family tradition (Saoula Shamim, Ahmad & Abid, 2023). Regarding the type of training, numerous studies indicate that there is no conclusive evidence establishing a direct relationship between the type of training and its impact. Different types of training can yield varying outcomes, with some training programs resulting in greater impact while others may yield less significant results. Training type influences performance of the trainees (Sutherland, 2009; Eraut, 1998). Based on the above literature and discussion, we draw the following hypothesis.

*H1: There is a significant difference in the sustainability of vocational trainings across different age groups.*

*H2: There is a significant difference in the sustainability of vocational trainings across different education levels.*

*H3: There is a significant difference in the sustainability of vocational trainings across different marital status.*

*H4: There is a significant difference in the sustainability of vocational trainings across different groups of guardian occupation.*

*H5: There is a significant difference in the sustainability of vocational trainings across different training trade (training types)*

## **2.3. Factors influencing sustainability of vocational trainings**

### *2.3.1 Organizational factors*

Organizational support during training and post training follow-up is vital for encouraging vocational trainees to become an entrepreneur or sustain skills in another shape. Puyate, (2008) found lack of enough training facilities is one essential factor affecting the successful accomplishment of vocational programs in Nigeria. He further enlightens that funding is the main factors which affect the effective implementation of vocational programs. Provision of start-up capital and necessary tool and equipment to the trainees are more major issues in order to initiate business in Ghana (Imoro & Nti, 2009). Vocational training proves to be more effective when organizations supply tools and equipment for initiating small-scale businesses such as Bazan et al. (2020) reported that the provision of tools and equipment, both during and after training, significantly benefits trainees in launching their businesses. (Al Siyabi, Tuzlukova,

Al Kaabi & Hadra, 2022) analyzed that the deficiency and lack of training resources and required tools and equipment's can be a serious hurdle to achieve effectiveness of training. Therefore, we can assume that organizational support in terms of capital provision, problem-solving attitude, organization follow-up and provision of tools and equipment is crucial for the long-term benefit of vocational training programs. Hence, we hypothesized:

**H6:** *Organizational factors have a significant positive effect on the sustainability of vocational trainings*

### 2.3.2. Social factors

The participation of community members in vocational training projects is essential for their sustainability. However, government intervention and political instability present significant challenges to the success of vocational entrepreneurs (Kennedy, 2014). Gospel and Foreman (2002) found that the benefits of VET rely on how it is offered. A study revealed that there is lack of coordination among the trainees and project operators regarding vocational training (Van Uden, Ritzen & Pieters 2014). Social network is vital for learning and application of skills obtained. Entrepreneurial social networks are the blend of specialized and social connections which all are enclosed by trust and devotion. These network assist vocational entrepreneurs to learn new knowledge from their professional colleague in the field (Mika, 2007). Ajzen, (1991) explained that planned behavior theory states that entrepreneurship activities of an individual may affected by getting social pressure from family members and friends. He further explains that social customs and norms is perceived as social pressure to perform or not to perform a particular behavior. People are more inclined towards entrepreneurial activities when the environment assists him/ her for entrepreneurship in which they live. They cite that surroundings is a key factor in their decision to pursue entrepreneurship (Linan, 2008). The most influential factor can often be one's family members, who can either discourage or encourage a person to engage in entrepreneurial activities (Moriano, Gorgievski, Laguna, Stephan & Zarafshani , 2012). Based on this argument, we can assume that a person's social network can either facilitate or hinder their ability to apply the skills they have learned in the future. Hence, we hypothesized that:

**H7:** *Social factors have a significant positive effect on the sustainability of vocational trainings.*

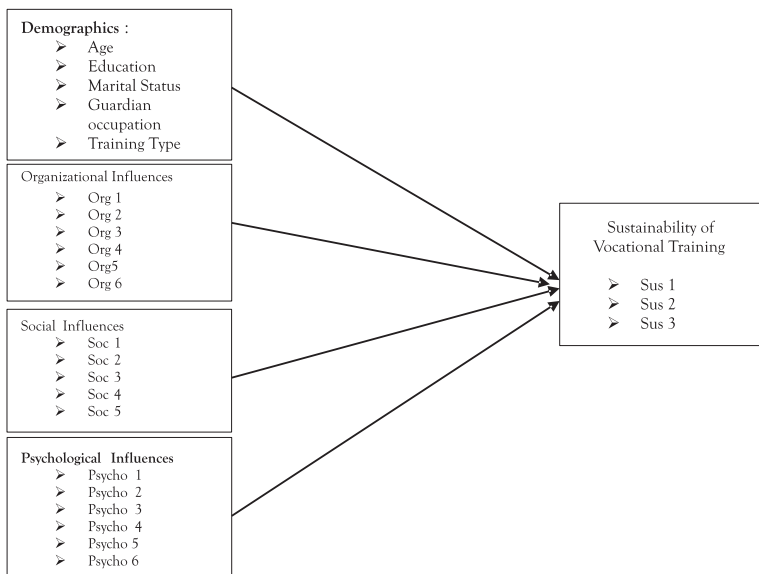
### 2.3.3. Psychological factors

Psychological factors have a significant influence on individuals' long-term



motivation to maintain acquired skills. Studies have shown that training is more successful when trainers effectively motivate trainees (Punia & Kant, 2013). Internal motivation plays a vital role in trainees ability to establish new ventures. This belief in themselves act as essential resources that help potential entrepreneurs to navigate challenges (Herron & Sapienza, 1992). Additionally, self-efficacy is an important determinant of self-employment. Individuals with self-efficacy but lacking the necessary skills may struggle to produce tangible achievements (Bandura, 1986). In the context of entrepreneurship, self-efficacy is a technical dimension, such as skill and talent which plays a pivotal role in the the creation of opportunities. When individuals possess a high level of self-efficacy in these technical aspects, they have confidence in their ability to leverage their skills to develop innovative business ideas and capitalize opportunities. (Top, 2006). Attitude plays a significant and influential role as a strong causal factor in shaping entrepreneurial intention (Moriano et al., 2012). The trainee's interest is another key factor that contributes to the effectiveness of training. For example Tabassi, Ramli and Bakar (2012) described that trainee's interest can influence the willingness of an individual to follow the content and objectives of the training programme. Therefore, psychological influences such as positive motivation, attitude and interest of an individual trainee are necessary to sustain skills in future. Hence, we hypothesized;

**H8:** *Psychological factors have a significant positive effect on the sustainability of vocational trainings.*



**Figure 2:** Theoretical Framework: The Impact of Demographic and Organizational, Social and Psychological Influences on Sustainability of Vocational Trainings

### 3. Methodology

There are 409 vocational institutes at public sector are operating in all provinces of Pakistan which offer training in over 40 skills / trades (Technical and Vocational Education Report, 2009). These consist of 183 institutes for boys, 225 institutes for women and 1 institute for co-education. KP has 36 institutes for boys and 11 vocational institutes for women in public sector where 3243 students are enrolled in total.

There are total of three government sector vocational institutes and 41 Non-Government Organizations (NGO's) registered with social welfare department of district Bannu. Out of these 41 NGOs, about eight of them run vocational skills programs. In these 8, one is not relevant to the research due to training conducted outside district Bannu, four could not be accessed for data collection, and only three NGOs provided the data. The government-run institutions also facilitated us in data collection. Total of six institutes (01 vocational colleges for boys, two vocational colleges for girls and 03 non-government organizations for girls) that have, so far, run total of 30 skill centers participated in the data collection. A total of 600 trainees, who had received vocational training from these six institutes in various years, were available for data collection. To ensure the accuracy and reliability of our data, our collection process exclusively targeted respondents who had completed their vocational training at least two years prior. The specific duration of at least two years was chosen because this timeframe enables us to thoroughly evaluate the sustainability of these training programs by examining the transaction history and long-term outcomes. This long term impact can be measured in terms of skill retention, economic independence, and entrepreneurial endeavors. Stratified sampling was employed as the data collection method. This choice was made due to the presence of six training institutes, for which a proportional stratification approach was implemented to select respondents for data collection in order to ensure comprehensive representation of each stratum. It can help us to generalize the study results to vast region. Notably, respondents within each stratum were selected using a convenient method.

The sample size is concluded through the following formula.

$$n = N / 1 + N (\infty^2)$$

Where n = Sample Size, N = Population or Sampling frame,  $\infty$  = Margin of Error.

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

$$n = \frac{600}{1 + 600(0.05)^2}$$

$$n = \frac{600}{1 + 600(0.0025)^2}$$

$$n = \frac{600}{1 + 1.5}$$

$$n = \frac{600}{2.5}$$

$$n = 240$$

Out of the 600, 270 respondents were traced to collect data. After data collection, we found that 15 questionnaires were incomplete and ineligible for analysis, resulting in a final dataset comprising of 255 valid responses.

The first part of the questionnaire relates to demographic information such as age, education, marital status, guardian background, and type of training. The second part measures the facets of sustainability, including job attainment, self-employment, and skills transfer. The third part focuses on organizational factors such as provision of tools and equipment, start-up capital, communication with the community, organization feedback, and community participation. The fourth part involved social factors, including reference groups, peers, friends, family members, networks, and empowerment, which can influence individual decisions. The final part measures psychological influences such as attitude and motivation towards skills. The instrument using evaluation measure from Rudhumbu, Gumbo and Gumbe, (2016) and Leone, (1994).

To test the reliability of the instrument, the data was collected from 30 respondents initially. *Causal relationship was checked in pilot study to check the reliability of the instrument.* Mcconnel et al (1994) found that sample size of 10-20% of the actual sample size is most appropriate for pilot studies in social sciences. Cronbach Alpha Test was conducted to measure the internal consistency and reliability of the instrument. In Table 1, the value of Cronbach's alpha for different constructs is  $> 0.7$  which means the instrument is reliable. After this process of validation, the questionnaire was circulated among whole sample. As per Table 2 in descriptive statistics, the mean value of dependent variable "sustainability" is close to 4, which indicate that most of the people failed on sustaining the obtained vocational skills in training.

#### 4. Results

The correlation results presented in Table 9 of Appendix A indicate that there is a significant relationship between organizational, social, and psychological factors and sustainability. The correlation coefficients between organizational influence ( $r = .516, p < .001$ ), social influence ( $r = .536, p < .001$ ), and psychological influence ( $r = .481, p < .001$ ) respectively, demonstrate moderate and significant correlations with the sustainability of vocational trainings. These result shows that the dependent variables have a meaningful impact on the sustainability of vocational trainings, as indicated by the p-values being less than .05. The selection of  $\alpha = 0.05$  as the significance level has become a widely recognized practice across various scientific fields, implying a 95% confidence in the accuracy of the results. Another reason is that, in comparison to the entire population, our sample size is larger. This larger sample size helps mitigate the potential for erroneous or incorrect effects. These findings indicate

**Table 1:** Reliability of Instrument

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha
Sustainability	8.0867	7.211	.707	.791
Organizational Influence	7.9144	7.543	.782	.759
Social Influence	8.7444	8.896	.720	.803
Psychological Influence	8.9478	7.364	.586	.856

The table shows Alpha Cronbach of the instrument. Sustainability (dependent variable) measured through starting a business based on skills required, job attainment or skills transfer to other in the community. Organizational Influences measured through provision of tools and equipment, start-up capital, communication with the community, organization feedback, and community participation. The social influences measured through reference groups, peers, friends, family members, networks, and empowerment, which can influence individual decisions. The psychological influences include attitude and motivation towards skills. All the variables are based on Likert scale 1= strongly agree, 2= agree, 3= Neutral, 4= Disagree and 5= strongly disagree

**Table 2:** Descriptive Statistics

	N	Mean	Std. Deviation
Sustainability	255	3.24	1.0933
Organizational	255	3.20	.88980
Social Factors	255	2.82	.90527
Psychological	255	2.91	1.17266

The table shows descriptive statistics i.e., Frequency, mean and standard deviation of the variables. The dependent variable "Sustainability" measured through starting a business based on skills required, job attainment or skills transfer to other in the community. Organizational Influences encompasses elements such as provision of tools and equipment, start-up capital, communication with the community, organization feedback, and community participation. The social influences measured through reference groups, peers, friends, family members, networks, and empowerment, which can influence individual decisions. The psychological influences include attitude and motivation towards skills. All the variables are based on Likert scale 1= strongly agree, 2= agree, 3= Neutral, 4= Disagree and 5= strongly disagree that strengthening organizational support, social networks, and personal attitude and motivation drive of trainees can contribute to the improved sustainability of vocational training programs.

Table 3 presents compelling evidence of a statistically significant difference

**Table 3: Age of Respondents**

Age	N	Mean	Std. Deviation	95% Confidence Interval for Mean		
				Lower Bound	Upper Bound	
under 20	34	3.6667	1.28446	3.2185	4.1148	
21-30	125	3.4640	.99452	3.2879	3.6401	
31-40	76	2.6272	.92049	2.4169	2.8375	
41-50	20	3.4667	1.05076	2.9749	3.9584	
Total	255	3.2418	1.09336	3.1070	3.3767	
<b>ANOVA</b>						
<b>Sustainability</b>						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	42.029	3	14.010	13.441	.000	
Within Groups	261.614	251	1.042			
Total	303.643	254				
<b>Multiple Comparisons</b>						
<b>Dependent Variable: Sustainability Tukey HSD</b>						
(I) Demographics. Age	(J) Demographics. Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
under 20	21-30	.20267	.19747	.734	-.3081	.7134
	31-40	1.03947*	.21064	.000	.4947	1.5843
	41-50	.20000	.28770	.899	-.5441	.9441
21-30	under 20	-.20267	.19747	.734	-.7134	.3081
	31-40	.83681*	.14850	.000	.4527	1.2209
	41-50	-.00267	.24587	1.000	-.6386	.6332
31-40	under 20	-1.03947*	.21064	.000	-1.5843	-.4947
	21-30	-.83681*	.14850	.000	-1.2209	-.4527
	41-50	-.83947*	.25657	.007	-1.5030	-.1759
41-50	under 20	-.20000	.28770	.899	-.9441	.5441

	21-30	.00267	.24587	1.000	-.6332	.6386
	31-40	.83947*	.25657	.007	.1759	1.5030

The table shows ANOVA and Post hoc Tukey test of Age intervals of the respondents. ANOVA tests shows whether there are any significant differences in the means of groups. After that Tukey post hoc test is conducted to check pairwise comparison test to identify which groups have significantly different means. Age is measured by the total number of years a respondent has lived.

between groups, as established by a one-way ANOVA ( $F(3,251) = 13.441, p = 0.000$ ). Moreover, the Tukey post hoc test provided additional insights, highlighting a significant disparity in the sustainability of vocational training among various age groups of respondents. Individuals within the age range of 31-40 exhibited a notable distinction (mean of  $2.62 \pm 0.92$  min,  $p = 0.000$ ). This suggests that the sustainability of vocational training is higher among individuals in this particular age group which gives support to our hypothesis H-1. The result proposes that age plays imperative role, particularly trainees within age range 31-40 years are more likely to find vocational training programs sustainable. One possible explanation is that individuals within this age range demonstrate a higher level of maturity. This maturity allows them to recognize the substantial advantages of vocational training in terms of securing a livelihood.

**Table 4:** Education of Respondents

Education	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Illiterate	29	3.2874	.96249	.17873	2.9212	3.6535
Primary	37	2.5225	.81476	.13395	2.2509	2.7942
Metric	96	3.0347	1.01622	.10372	2.8288	3.2406
Intermediate	51	3.5229	1.21153	.16965	3.1821	3.8636
Bachelor	30	4.2667	.65741	.12003	4.0212	4.5121
Master	12	3.2500	.99620	.28758	2.6170	3.8830
Total	255	3.2418	1.09336	.06847	3.1070	3.3767
ANOVA						
Sustainability						
		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	58.860	5	11.772	11.975	.000
	Within Groups	244.783	249	.983		

Total		303.643	254			
Multiple Comparisons						
Dependent Variable: Sustainability Tukey HSD						
(I) Educa- tion	(J) Demo- graphics. Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Illiterate	Primary	.76483*	.24590	.025	.0586	1.4711
	Metric	.25263	.21009	.835	-.3508	.8560
	Intermedi- ate	-.23552	.23060	.910	-.8978	.4268
	Bachelor	-.97931*	.25820	.003	-1.7209	-.2377
	Master	.03736	.34032	1.000	-.9401	1.0148
Primary	Illiterate	-.76483*	.24590	.025	-1.4711	-.0586
	Metric	-.51220	.19186	.085	-1.0632	.0388
	Intermedi- ate	-1.00035*	.21411	.000	-1.6153	-.3854
	Bachelor	-1.74414*	.24359	.000	-2.4438	-1.0445
	Master	-.72748	.32938	.237	-1.6735	.2185
Metric	Illiterate	-.25263	.21009	.835	-.8560	.3508
	Primary	.51220	.19186	.085	-.0388	1.0632
	Intermedi- ate	-.48815	.17180	.054	-.9816	.0053
	Bachelor	-1.23194*	.20739	.000	-1.8276	-.6363
	Master	-.21528	.30358	.981	-1.0872	.6566
Intermedi- ate	Illiterate	.23552	.23060	.910	-.4268	.8978
	Primary	1.00035*	.21411	.000	.3854	1.6153
	Metric	.48815	.17180	.054	-.0053	.9816
	Bachelor	-.74379*	.22813	.016	-1.3990	-.0886
	Master	.27288	.31812	.956	-.6408	1.1865
Bachelor	Illiterate	.97931*	.25820	.003	.2377	1.7209
	Primary	1.74414*	.24359	.000	1.0445	2.4438
	Metric	1.23194*	.20739	.000	.6363	1.8276
	Intermedi- ate	.74379*	.22813	.016	.0886	1.3990
	Master	1.01667*	.33866	.035	.0440	1.9893

Master	Illiterate	-.03736	.34032	1.000	-1.0148	.9401
	Primary	.72748	.32938	.237	-.2185	1.6735
	Metric	.21528	.30358	.981	-.6566	1.0872
	Intermedi- ate	-.27288	.31812	.956	-1.1865	.6408
	Bachelor	-1.01667*	.33866	.035	-1.9893	-.0440
*. The mean difference is significant at the 0.05 level.						

The table shows ANOVA and Post hoc Tukey test of Education intervals of the respondents. ANOVA tests shows whether there are any significant differences in the means of groups. After that Tukey post hoc test is conducted to check pairwise comparison test to identify which groups have significantly different means. Education is measured respondent's attainment of formal education and assessed through six groups i.e., illiterate= Respondent with no formal education, Primary= Education up to the 5th grade, Metric= Completion of 10 years of education, intermediate= Education completed up to the 12th grade, Bachelor = Completion of 14 years of formal education and Master= 16 years of education.

Table 4 shows statistically significant difference between education groups as determined by one-way ANOVA, ( $F(3,251) = 11.975, p = .000$ ). The test shown that sustainability of vocational training is significantly lower among the education of respondent having bachelor level ( $4.2667 \pm .65$  min,  $p = .000$ ) giving support to H-2. There is no significant difference among other groups. Based on these results, it appears that individuals with different education levels indeed have significantly different perceptions of sustainability in vocational training programs. The "Bachelor" education group emerged as noteworthy, exhibiting significantly higher sustainability scores compared to other education levels. This observation was supported by statistically significant differences between the "Bachelor" group and the remaining education levels. These results lend themselves to a plausible interpretation: individuals with bachelor's degrees may possess a higher capacity for learning and a greater ability to absorb new skills. Furthermore, this group of individuals may demonstrate a higher level of professionalism, enabling them to establish valuable networks that can facilitate their entrepreneurial endeavors or enhance their employment prospects.

**Table 5:** Marital status of Respondents

Marital Status	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Unmarried	115	3.6493	1.13584	3.4395	3.8591
Married	116	3.0489	.93896	2.8762	3.2215
Widowed	18	2.2593	.57798	1.9718	2.5467



Divorced	6	2.1111	.45542	1.6332	2.5890	
Total	255	3.2418	1.09336	3.1070	3.3767	
<b>ANOVA</b>						
<b>Sustainability</b>						
	Sum of Squares	Df	Mean Square	F	Sig.	
Between Groups	48.460	3	16.153	15.889	.000	
Within Groups	255.182	251	1.017			
Total	303.643	254				
<b>Multiple Comparisons</b>						
<b>Dependent Variable: Sustainability Tukey HSD</b>						
(I) Demographic Marital status	(J) Demographics. Marital status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Unmarried	Married	.60042*	.13268	.000	.2573	.9436
	Widowed	1.39002*	.25558	.000	.7290	2.0510
	Divorced	1.53816*	.42224	.002	.4461	2.6302
Married	Unmarried	-.60042*	.13268	.000	-.9436	-.2573
	Widowed	.78959*	.25543	.012	.1290	1.4502
	Divorced	.93774	.42215	.120	-.1541	2.0295
Widowed	Unmarried	-1.39002*	.25558	.000	-2.0510	-.7290
	Married	-.78959*	.25543	.012	-1.4502	-.1290
	Divorced	.14815	.47532	.989	-1.0812	1.3775
Divorced	Unmarried	-1.53816*	.42224	.002	-2.6302	-.4461
	Married	-.93774	.42215	.120	-2.0295	.1541
	Widowed	-.14815	.47532	.989	-1.3775	1.0812

\*. The mean difference is significant at the 0.05 level.

The table shows ANOVA and Post hoc Tukey test of Marital status of the respondents. The marital status measured through four groups i.e., Unmarried= Individuals not currently legally bound in a marital partnership, Married= Legally joined in a recognized marital union or partnership, Widowed= Spouse has passed away, marriage ended due to death and Divorced= Marriage legally dissolved.

In the above Table 5, There is statistically significant difference between groups as determined by one-way ANOVA, ( $F(3,251) = 15.889, p = .000$ ). The results of the test in Table 6 indicate that the unmarried group significantly differs from other groups, including the married group ( $3.0489 \pm .93$  min), widow group ( $2.25 \pm .57$  min), and

divorced group ( $2.11 \pm .45$  min). These findings provide support for H-3, suggesting that marital status has an impact on the sustainability of vocational trainings. The result suggests that among the marital status groups, “Unmarried” individuals consistently show a significantly different perception of sustainability compared to “Married,” “Widowed,” and “Divorced” individuals. Trainees with unmarried marital status are more likely to find vocational training programs sustainable. It may be because unmarried individuals may have less family related responsibilities which assist them to focus on career. Second, they may have more time available and financial independence to invest in practicing and applying acquired skills.

**Table 6:** Guardian Occupation of Respondents

	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Govt employee	41	3.2764	1.10530	2.9275	3.6253
Shopkeeper	35	3.3810	1.15227	2.9851	3.7768
Skilled worker	65	2.6462	.83308	2.4397	2.8526
Farmer	47	3.1348	1.16648	2.7923	3.4772
Labor	38	3.5877	.88509	3.2968	3.8786
Private employee	29	4.0805	.93289	3.7256	4.4353
Total	255	3.2418	1.09336	3.1070	3.3767
ANOVA					
Sustainability					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	49.271	5	9.854	9.646	.000
Within Groups	254.371	249	1.022		
Total	303.643	254			
Multiple Comparisons					
Dependent Variable: Sustainability Tukey HSD					

(I) Demographics. Guardian Occupation	(J) Demographics. Hereditry	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Govt. employee	Shopkeeper	-.10453	.23260	.998	-.7726	.5635
	Skilled worker	.63027*	.20158	.024	.0513	1.2092
	Farmer	.14167	.21599	.986	-.4787	.7620
	Labour	-.31130	.22760	.746	-.9650	.3424
	Prvt. em- ployee	-.80404*	.24524	.015	-1.5084	-.0997
Shopkeeper	Govt. employee	.10453	.23260	.998	-.5635	.7726
	Skilled worker	.73480*	.21191	.008	.1262	1.3434
	Farmer	.24620	.22566	.885	-.4019	.8943
	Labor	-.20677	.23679	.953	-.8868	.4733
	Private employ	-.69951	.25380	.068	-1.4284	.0294
Skilled worker	Govt em- ployee	-.63027*	.20158	.024	-1.2092	-.0513
	Shopkeeper	-.73480*	.21191	.008	-1.3434	-.1262
	Farmer	-.48860	.19353	.021	-1.0444	.0672
	Labor	-.94157*	.20640	.000	-1.5343	-.3488
	Private employee	-1.43431*	.22571	.000	-2.0825	-.7861
Farmer	Govt em- ployee	-.14167	.21599	.986	-.7620	.4787
	Shopkeeper	-.24620	.22566	.885	-.8943	.4019
	Skilled worker	.48860	.19353	.021	-.0672	1.0444
	Labor	-.45297	.22050	.315	-1.0862	.1803
	Privt em- ployee	-.94571*	.23867	.001	-1.6312	-.2602
Labor	Govt em- ployee	.31130	.22760	.746	-.3424	.9650
	Shopkeeper	.20677	.23679	.953	-.4733	.8868

	Skilled worker	.94157*	.20640	.000	.3488	1.5343
	Farmer	.45297	.22050	.315	-.1803	1.0862
	Private employee	-.49274	.24922	.358	-1.2085	.2230
Private employee	Govt employee	.80404*	.24524	.015	.0997	1.5084
	Shopkeeper	.69951	.25380	.068	-.0294	1.4284
	Skilled worker	1.43431*	.22571	.000	.7861	2.0825
	Farmer	.94571*	.23867	.001	.2602	1.6312
	Labour	.49274	.24922	.358	-.2230	1.2085
*. The mean difference is significant at the 0.05 level.						

The table shows ANOVA and Post hoc Tukey test of Guardian occupation of the respondents. The Guardian occupation measured through six groups i.e., Government employee= Respondent works for the government. Shopkeeper= A person Manages and operates a retail store or shop. Skilled worker= Possesses specialized expertise in a particular trade or occupation. Farmer= A person engaged in agriculture, cultivating land and producing crops. Labor= Performs manual or physical work, often in various industries. Private employee= Works for a non-governmental, non-public sector employer or company.

The results in Table 6 indicated a significant effect ( $F(3,251) = 9.64, p = 0.000$ ), suggesting that there are meaningful variations among the groups. The post hoc test further revealed that trainees with guardians employed as skilled workers significantly differed from the other groups. The test demonstrated that the sustainability of vocational training is significantly higher among trainees whose guardians are skilled workers ( $2.6462 \pm .83$  min,  $p = .000$ ). However, no significant differences were found among the other groups. Therefore, hypothesis H-4, which suggests a significant difference in the sustainability of vocational trainings based on guardian occupation, is confirmed. In simple terms, we can say that trainees with guardian occupation as “skilled worker” tend to have high probability to start his own business, get employment or skill transfer to the community. One reason is that skilled workers’ parents may provide supportive environment for their children to practice skills. Beside this, such families may have network with relevant industry which could help trainee in job placement or apprenticeship.

**Table 7:** Training Types

Trade Type	N	Mean	Std. Deviation	Std. Error	ANOVA	
					F	Sig.
Electrical	36	3.0556	1.20975	.20162	1.210	.307
Ref & AC	21	3.3810	1.08672	.23714		
Plumbing	24	3.2917	.99909	.20394		
Sewing & Embroidery	153	3.2004	1.07832	.08718		
Any other (Machinist, CDC, Welding)	21	3.6667	1.08012	.23570		
Total	255	3.2418	1.09336	.06847		

The training type represent the trade in which the respondent gets enrolled and obtained certificate. Electrical= Tradesperson specializing in electrical systems, wiring, and installations. Ref & AC= A person having expertise in refrigeration and air conditioning system installation and repair. Plumbing= Skilled in pipes, fixtures, and water system installation and maintenance. Sewing & Embroidery= person having skills and Proficient in fabric crafting, sewing, and decorative needlework techniques. Other means any other trade such as Machinist, welding etc The only table exhibits no significant differences among groups; therefore, ANOVA and Post Hoc tests were not conducted.

Table 8 indicates that there is no significant difference in the sustainability of vocational trainings among the five types of trainings, as evidenced by a p-value of .307, which is greater than the significance level of .05. Therefore, the results suggest that there is no association between the sustainability of vocational trainings and the type of training, leading to the rejection of hypothesis H-5. In other words, we found no empirical evidence to suggest that participating in a particular vocational trade leads to a higher probability of to sustain the acquired skills.

**Table 8:** Multiple Regression

Model Summary and ANOVA <sup>a</sup>							
Model		R	R Square	Df	Mean Square	F	Sig.
1	Regression	.621	.386	3	39.041	52.537	.000b
	Residual			251	.743		
	Total			254			

a. Dependent Variable: Sustainability

b. Predictors: (Constant) Organizational, Social and Psychological factors						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.903	.211		4.280	.000
	Organizational	.342	.074	.278	4.588	.000
	Social	.366	.076	.303	4.832	.000
	Psychological	.154	.059	.165	2.602	.010

The table shows Multiple Regression Analysis for independent and dependent variables. Sustainability (dependent variable) measured through starting a business, job attainment or skills transfer to other in the community. Organizational Influences measured through provision of tools and equipment, start-up capital, communication with the community, organization feedback, and community participation. The social influences measured through reference groups, peers, friends, family members, networks, and empowerment, which can influence individual decisions. The psychological influences include attitude and motivation towards skills. All the variables are based on Likert scale 1= strongly agree, 2= agree, 3= Neutral, 4= Disagree and 5= strongly disagree.

Table 8 demonstrates the relationship between sustainability of vocational trainings and various potential predictors. The multiple regression model with all three predictors produced  $R^2 = .386$ ,  $F(3, 251) = 52.53$ ,  $P < .001$ . The value of R-square (.386) shows that approximately 38% variation in sustainability of vocational trainings was due to organizational, social and psychological factors. The effect of organizational influence has been analyzed on training's sustainability. The value of unstandardized coefficient,  $B_1 = .342$  implies 34% variations in the sustainability of vocational trainings due to the organizational factors. Thus, H-6 holds that Organizational influence has significant effect on the sustainability of vocational trainings. This suggests that when training programs provide strong organizational support during training and offer resources such as funds and equipment to trainees after training, there is a higher likelihood of skills sustainability in the future. To measure H-7, we have examined the effect of social factors on the sustainability of vocational trainings. The value of the unstandardized coefficient of 0.366 means that 36% variations in the sustainability of vocational trainings is due to the social influences. This gives support to the hypothesis H-7. This means that when individuals receive strong social support from friends, family, relatives, teachers, and government institutions regarding their vocational training decisions, it is associated with a higher likelihood of sustaining the skills acquired during training. Organizations should focus on mind

set of the social network of the trainees. The manager assure them the importance of vocational training so that it could not impede in trainees' decision to become either entrepreneur or getting job based on the skills acquired.

Finally, we investigate H-8 for the effect of psychological factors on the sustainability of vocational trainings. Result illustrates that 15% variations in the sustainability of vocational trainings are attributed to the psychological factors. The result is also significant statistically giving support to H-4. An explanation for this result is that individual's motivation, interest and positive attitude towards training is essential for the sustainability of skills in the future. The trainer and organization may reap long run productivity of the project, if they guide and motivate trainees for sustaining skills in future.

These results provide insights into the nuanced factors influencing the sustainability of skills acquired through vocational training. Policymakers, educators, and employers can use this information to tailor training programs, support structures, and resources to better meet the diverse needs of trainees. Understanding these dynamics is crucial for enhancing the long-term impact of vocational training on entrepreneurship and employability.

Through a comprehensive analysis of individual and training-related aspects, we have discerned significant differences and correlations that contribute to a deeper understanding of this crucial domain. The study developed a rich model which described the sustainability of vocational skills. The analysis achieved research objective and research question with only variable insignificant is training type. In demographic analysis, age (31-40 years), guardian occupation (as skilled worker), particular marital (being unmarried) and education (especially bachelor degree) were identified as significant factors influencing trainees' ability to sustain their acquired skills. The study found that factors such as organizational support, social encouragement, and psychological disposition are vital in determining the sustainability of vocational training.

## **5. Discussion and Conclusion**

The main objective of the study is to explore the sustainability of vocational trainings in self-employment, obtaining jobs and skill transfer. The study analyzed the organization, social and trainee's psychological influences on the sustainability of vocational training programs. The calculated sample size is 255 respondents (from 6 vocational training institutions, collected primary data through questionnaire). The findings show that most of the trainees could not contribute to the sustainability as the mean value of 3.24 is quite low. We have analyzed demographic factors thorough ANOVA post hoc test and simple descriptive statistics. The age group between 31 to

40 years emerges as the most conducive for the success of vocational training, which is in line with previous research findings of (Hill & Kellems, 2002). Furthermore, we found that the sustainability of vocational training is significantly associated with education and marital status, with unmarried individuals showing higher sustainability. With regard to guardian occupation, our results indicate that trainees whose guardians or family members work as skilled workers, such as tailors, electricians, and mechanics, tend to sustain their skills better compared to those whose parents do not possess these skills. Interestingly the type of training showed no significance relationship with training's sustainability.

In order to test the hypothesis, the research employed correlation and multiple regression models to analyze scale questions. The research found that all these factors has positive significant relationship with sustainability of trainings as  $p > .05$ . All the hypotheses were accepted except training type in demographic. The result of psychological effects similar those found by Marques et al., (2012) while social factors align with Zvarikova and Kacerauskas, (2017).

### **5.1. Theoretical contribution**

The research makes a significant contribution by pioneering a field study that uncovers key factors associated with the sustainability of vocational training at both, the individual and training levels. First, to the best of our knowledge, it is the pioneering study conducted in KP province of Pakistan which can be applicable to other parts of the province due to same socio-economic condition. It provides a good insight to improve the concerned organizational performance in the province and socio economic condition of citizens who acquired entrepreneurial vocational trainings in this region. Second, Previous studies have primarily focused on examining the sustainability of educational projects (Mendenhall, 2014), development projects (Peter, 2012), and health projects (Sarriot et al. 2004). Our study significantly contributes by examining organizational, social, and psychological influences concurrently to examine the vocational projects. Beside this. the incorporation of demographic factor analysis further enhances the research's value by cultivating some new findings for practitioners. Third, our research significantly enhances the current body of literature on the sustainability of vocational training by addressing a crucial gap: the sustainable aspects of skill training programs. It is a dimension that prior research has ignored. Finally, other studies that employed diverse analysis techniques for vocational entrepreneurial intention research, such as Structural Equation Modeling (Galvão et al, spearman correlation and regression analysis (Ndofirepi & Rambe, 2017) and ANOVA, Principal Component Analysis (PCA) and General Linear Models employed by (Popescu, et al 2016). Our research distinguishes itself by utilizing ANOVA post



hoc Tukey tests to analyze demographic factors. This test refines the results and can identify specific pairs of groups with significant differences

## **5.2. Practical/ Managerial implications:**

The research yields significant practical implications for multiple stakeholders. For project managers, our research provides guidance on structuring and managing vocational programs with a focus on achieving enduring positive outcomes. Policymakers in public vocational organizations can utilize this knowledge to inform the development of policies and initiatives that foster sustainability. Additionally, international donor agencies can employ these insights to optimize the allocation of resources and support for vocational projects, ensuring that their investments may harvest lasting benefits and contribute to broader socio-economic development. For individual trainee, the continuation of skills would help him to earn livelihood, contribute in the economic empowerment and foster economic development at local level.

The project managers of vocational trainings may consider demographic factors when choosing trainees for the vocational training. The sustainability of the vocational training program is influenced to some extent by factors such as age, education level, marital status, and the occupation of the trainees' guardians. To ensure a sustainable vocational training program, it is recommended to select trainees between the ages of 31 and 40. Moreover, trainees with a bachelor's degree, unmarried individuals, and trainees whose guardians as skilled workers are the most important and influential demographic factors for sustaining acquired skills in the future.

To achieve a lasting impact from vocational training, it is crucial for the organization to provide trainees with necessary tools, equipment, and, if possible, start-up capital. Additionally, when the training period concludes, the organization should guide trainees on establishing skill-based businesses and securing relevant employment for income generation. Resolving issues is a key factor in ensuring sustainability. During the implementation of vocational projects' institutions, particularly non-governmental organizations should involve community members in the planning and decision-making processes to foster participation and ownership.

In social aspect, trainees who make decisions independently and are not influenced by peers, friends and family members should be avoided. Similarly, trainee who is willing to establish a strong network with field professionals should be preferred.

The institute should identify the psychological features of candidates through questionnaire or interview before offering vocational training. Before admission, the organization should evaluate and select the candidates having positive attitude towards the selected trade skills and highly motivated to learn the skills in training.

### 5.3. Limitations

It is worth noting that a subset of participants lacked sufficient education to independently complete the questionnaires. In such cases, the researcher employed a verbal questioning approach, asking questions orally and recording the participants' responses on their behalf in the questionnaires. For female participants, the researcher deployed a female assistant for data collection that might have created communication gap. This was due to the highly culturally sensitive location where female cannot be accessed by male researchers for interviews or data collection. However, the questions asked were mostly of objective in nature and the truth exist externally in this case that mitigates this concern. Moreover, we trained the assistant well before allowing her to conduct survey. Some areas were difficult to access, so data were collected through telephone calls, which may lead to the concealment of actual data by the trainee. However, telephonic data collection can be advantageous in certain aspects, as it allows for reaching a larger number of respondents, and some individuals may be more truthful when not in a face-to-face interaction. In terms of theoretical limitations, the research does not explore potential interaction or mediation effects, which could offer a more comprehensive understanding of the interplay between variables.

### 5.4. Future directions

The current study focused on examining some demographics, institutional, social and psychological influences. due to the challenges of tracing and collecting data from all trainees, the research restricted to a single district. Despite this limitation, the study's findings can be reasonably generalized to the southern regions of KP, including districts such as Kohat, Karak, Lakki Marwat, and Tank, as these areas share similar socio-economic conditions with Bannu. Future research has the potential to expand upon the current study by investigating training programs across other provinces and even the entire country. This broader scope would provide a more comprehensive understanding of the effectiveness and impact of vocational training initiatives nationwide. Moreover, the influences (each item in questionnaire) may be upgraded to complete factors and detailed variables to examine the phenomenon. Moreover, future researchers may examine variables such as monitoring and evaluation, government policies, and the integration of technology to assess the long-term benefits of vocational training projects or explore the sustainability of industry-relevant skills within a particular region.

## References

- Aapola, S. (2002). Exploring Dimensions of Age in Young People's Lives: A discourse analytical approach. *Time & Society*, 11(2-3), 295-314.

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Al Siyabi, J., Tuzlukova, V., Al Kaabi, K., & Hadra, M. (2022). Assistive Technology in the English Language Classroom: Reality and Perspectives. *Journal of Language Teaching and Research*, 13(6), 1203–1210.
- Bairagya, I. (2021). Impact of formal vocational training on the earnings of self-employed individuals in rural India. *Journal of Business Venturing Insights*, 16, e00269.
- Bandura, A. (1986). Social foundations of thought and action. *Englewood Cliffs, NJ*, 1986(23–28).
- Baumgartel, H., & Jeanpierre, F. (1972). Applying new knowledge in the back-home setting: A study of Indian managers' adoptive efforts. *The Journal of Applied Behavioral Science*, 8(6), 674–694.
- Bazan, C., Gaultois, H., Shaikh, A., Gillespie, K., Frederick, S., Amjad, A., Yap, S., Finn, C., Rayner, J., & Belal, N. (2020a). A systematic literature review of the influence of the university's environment and support system on the precursors of social entrepreneurial intention of students. *Journal of Innovation and Entrepreneurship*, 9, 1–28.
- Bazan, C., Gaultois, H., Shaikh, A., Gillespie, K., Frederick, S., Amjad, A., Yap, S., Finn, C., Rayner, J., & Belal, N. (2020b). Effect of the university on the social entrepreneurial intention of students. *New England Journal of Entrepreneurship*.
- Bönte, W., & Piegeler, M. (2013). Gender gap in latent and nascent entrepreneurship: driven by competitiveness. *Small Business Economics*, 41, 961–987.
- Bossert, T. J. (1990). Can they get along without us? Sustainability of donor-supported health projects in Central America and Africa. *Social Science & Medicine*, 30(9), 1015–1023.
- Brundtland, G. H. (1987). What is sustainable development. *Our Common Future*, 8(9).
- Cao, Y. (2022). A Study of the Influencing Factors of Higher Vocational College Students' Entrepreneurial Intention. *Procedia Computer Science*, 214, 212–220.
- Dichter, T. (1997). Appeasing the Gods of sustainability: The future of international NGOs in microfinance. *NGOs, States and Donors: Too Close for Comfort*, 128–139.
- Ecevit, Y. (2007). *A critical approach to women's entrepreneurship in Turkey*. Citeseer.
- Eraut, M. (1998). Concepts of competence. *Journal of Interprofessional Care*, 12(2), 127–139.
- Fatima, A., & Saleem, R. (2016). The impact of vocational education on economic growth of Pakistan. *Bulletin of Business and Economics (BBE)*, 5(2), 83–91.
- Fletcher, K., Dewberry, E., & Goggin, P. (2001). Sustainable consumption by design. In *Exploring sustainable consumption* (pp. 213–224). Elsevier.
- Galvão, A., Marques, C. S., & Marques, C. P. (2018). Antecedents of entrepreneurial intentions among

- students in vocational training programmes. *Education+ Training*, 60(7/8), 719-734.
- Gebrehiwot, M. (2006). An assessment of challenges of sustainable rural water supply: The case of Ofla woreda in Tigray Region. *Addis Ababa, Ethiopia*.
- Gospel, H., & Foreman, J. (2002). The Provision of Training in Britain: Case studies of inter-firm coordination'Paper presented at The First International Conference on Training. Employability and Employment. 11" and 12" July 2002. *Monash University Centre, London*.
- Gupta, P., & Datta, A. (2023). The Role of Accurate Identification of Vulnerable Youth in Vocational Education and Training Systems for Improved Employability: Insights from Experimental Data. *Data in Brief*, 109258.
- Herron, L., & Sapienza, H. J. (1992). The entrepreneur and the initiation of new venture launch activities. *Entrepreneurship Theory and Practice*, 17(1), 49-55.
- Hill, C. E., & Kellems, I. S. (2002). Development and use of the helping skills measure to assess client perceptions of the effects of training and of helping skills in sessions. *Journal of Counseling Psychology*, 49(2), 264.
- Hoeckel, K. (2008). Costs and benefits in vocational education and training. *Paris: Organisation for Economic Cooperation and Development*, 8, 1-17.
- Imoro, B., & Nti, K. O. (2009). Sustainable vocational skills development for poverty reduction in Northern Ghana. *Journal of Sustainable Development in Africa*, 10(4), 250-267.
- Ingvarsson, C., Hallin, A., & Kier, C. (2023). Project stakeholder engagement through gamification: what do we know and where do we go from here? *International Journal of Managing Projects in Business*, 16(8), 152-181.
- Jyoti, J. (2011). FACTORS AFFECTING WOMEN ENTREPRENEURSHIP IN J&K (INDIA). *Journal of Services Research*, 11(1).
- Kennedy, A. (2014). Understanding continuing professional development: the need for theory to impact on policy and practice. *Professional Development in Education*, 40(5), 688-697.
- King, K., & Palmer, R. (2007). *Technical and vocational skills development*. Comparative Education Research Centre.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice*, 21(1), 47-58.
- Leone, C. (1994). Opportunity for thought and differences in the need for cognition: A person by situation analysis of self-generated attitude change. *Personality and Individual Differences*, 17(4), 571-574.
- Linan, F. (2008). Skill and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4, 257-272.

- Marques, C. S., Ferreira, J. J., Gomes, D. N., & Gouveia Rodrigues, R. (2012). Entrepreneurship education: How psychological, demographic and behavioural factors predict the entrepreneurial intention. *Education+ Training*, 54(8/9), 657-672.
- Mazzarol, T., Volery, T., Doss, N., & Thein, V. (1999). Factors influencing small business start-ups: a comparison with previous research. *International Journal of Entrepreneurial Behavior & Research*, 5(2), 48-63.
- Mcconnel, F. M. S., Logemann, J. A., Rademaker, A. W., Pauloski, B. R., Baker, S. R., Lewin, J., Shedd, D., Heiser, M. A., Cardinale, S., & Collins, S. (1994). Surgical variables affecting postoperative swallowing efficiency in oral cancer patients: a pilot study. *The Laryngoscope*, 104(1), 87-90.
- McGrath, S., & Powell, L. (2016). Skills for sustainable development: Transforming vocational education and training beyond 2015. *International Journal of Educational Development*, 50, 12-19.
- Mendenhall, M. A. (2014). Education sustainability in the relief-development transition: Challenges for international organizations working in countries affected by conflict. *International Journal of Educational Development*, 35, 67-77.
- Mika, P. (2007). Ontologies are us: A unified model of social networks and semantics. *Journal of Web Semantics*, 5(1), 5-15.
- Moriano, J. A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development*, 39(2), 162-185.
- Ndofirepi, T. M., & Rambe, P. (2017). Entrepreneurship education and its impact on the entrepreneurship career intentions of vocational education students. *Problems and Perspectives in Management*, 15, Iss. 1 (cont.), 191-199.
- Peter, J. (2012). Modelling Uncertainty and Flexibility in the Financial Analysis of a Real Estate Development Project in Switzerland. *Management Technology and Economics (MTEC) at the Swiss Federal Institute of Technology Zurich, Submitted to ETH Zurich*.
- Popescu, C. C., Bostan, I., Robu, I.-B., Maxim, A., & Diaconu, L. (2016). An analysis of the determinants of entrepreneurial intentions among students: a Romanian case study. *Sustainability*, 8(8), 771.
- Poverty & Equity Brief*. (2023). World Bank Report.
- PPAF report. (2018). Geography of Poverty in Pakistan Update. *Pakistan Poverty Alleviation Fund*.
- Punia, B. K., & Kant, S. (2013). A review of factors affecting training effectiveness vis-à-vis managerial implications and future research directions. *International Journal of Advanced Research in Management and Social Sciences*, 2(1), 151-164.
- Puyate, S. T. (2008). Constraints to the effective implementation of vocational education programme in private secondary schools in Port Harcourt Local Government Area. *International Journal of Work-Integrated Learning*, 9(2), 59.

- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159–175.
- Reynolds, P. D., Carter, N. M., Gartner, W. B., & Greene, P. G. (2004). The prevalence of nascent entrepreneurs in the United States: Evidence from the panel study of entrepreneurial dynamics. *Small Business Economics*, 23, 263–284.
- Rosenberg-Yunger, Z. R. S., Daar, A. S., Singer, P. A., & Martin, D. K. (2008). Healthcare sustainability and the challenges of innovation to biopharmaceuticals in Canada. *Health Policy*, 87(3), 359–368.
- Rudhumbu, N., Gumbo, C., & Gumbe, S. (2016). Antecedents of Entrepreneurship Intentions of Final Year Students in the Faculty of Business and Accounting at Botho University in Botswana. *Journal of Entrepreneurship and Business Innovation*, 3(2).
- Saoula, O., Shamim, A., Ahmad, M. J., & Abid, M. F. (2023). Do entrepreneurial self-efficacy, entrepreneurial motivation, and family support enhance entrepreneurial intention? The mediating role of entrepreneurial education. *Asia Pacific Journal of Innovation and Entrepreneurship*, ahead-of-print.
- Sarriot, E. G., Winch, P. J., Ryan, L. J., Bowie, J., Kouletio, M., Swedberg, E., LeBan, K., Edison, J., Welch, R., & Pacqué, M. C. (2004). A methodological approach and framework for sustainability assessment in NGO-implemented primary health care programs. *The International Journal of Health Planning and Management*, 19(1), 23–41.
- Scoones, I. (2007). Sustainability. *Development in Practice*, 17(4–5), 589–596. <https://doi.org/10.1080/09614520701469609>
- Shediac-Rizkallah, M. C., & Bone, L. R. (1998). Planning for the sustainability of community-based health programs: conceptual frameworks and future directions for research, practice and policy. *Health Education Research*, 13(1), 87–108.
- Sinha, T. N. (1996). Human factors in entrepreneurship effectiveness. *The Journal of Entrepreneurship*, 5(1), 23–39.
- Sutherland, J. (2009). Skills and training in Great Britain: further evidence. *Education+ Training*, 51(7), 541–554.
- Tabassi, A. A., Ramli, M., & Bakar, A. H. A. (2012). Effects of training and motivation practices on teamwork improvement and task efficiency: The case of construction firms. *International Journal of Project Management*, 30(2), 213–224.
- Tall, B., Matarneh, S., Sweis, G., Sweis, R., & AlBalkhy, W. (2023). Factors affecting the success of development projects of the non-governmental organizations (NGOs) in Jordan. *International Journal of Construction Management*, 23(10), 1756–1767.
- Technical and vocational education report*. (2009).
- Top, S. (2006). Girişimcilik Keşif Süreci, Beta Yayınları. Basım, İstanbul.

- Torres, R., Organisation, I. L., & Studies, I. I. for L. (2011). World of Work Report 2011. Making markets work for jobs. *International Labour Organisation. International Institute for Labour Studies.*
- Torrington, D., Hall, L., & Taylor, S. (2005). Ethics and corporate social responsibility. *Human Resource Management, 6.*
- Van Uden, J. M., Ritzen, H., & Pieters, J. M. (2014). Engaging students: The role of teacher beliefs and interpersonal teacher behavior in fostering student engagement in vocational education. *Teaching and Teacher Education, 37*, 21–32.
- Zvarikova, K., & Kacerauskas, T. (2017). Social and economic factors affecting the entrepreneurial intention of university students. *Transformations in Business & Economics, 16(3)*, 220–239.

## Appendix-A

Table 9: Correlation

		Sustainability	Organizational	Social	Psychological
Sustainability	Pearson Correlation	1	.516**	.536**	.481**
	Sig. (2-tailed)		.000	.000	.000
	N	255	255	255	255
Organizational	Pearson Correlation	.516**	1	.502**	.520**
	Sig. (2-tailed)	.000		.000	.000
	N	255	255	255	255
Social	Pearson Correlation	.536**	.502**	1	.565**
	Sig. (2-tailed)	.000	.000		.000
	N	255	255	255	255
Psychological	Pearson Correlation	.481**	.520**	.565**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	255	255	255	255

The table revealed correlation analysis between independent and dependent variables. Sustainability (dependent variable) measured through starting a business, job attainment or skills transfer to other in the community. Organizational Influences measured through provision of tools and equipment, start-up capital, communication with the community, organization feedback, and community participation. The social influences measured through reference groups, peers, friends, family members, networks, and empowerment, which can influence individual decisions. The psychological influences include attitude and motivation towards skills. All the variables are based on Likert scale 1= strongly agree, 2= agree, 3= Neutral, 4= Disagree and 5= strongly disagree.



## Appendix-B

### QUESTIONNAIRE

#### Factors influencing sustainability of vocational Trainings

Name: \_\_\_\_\_ District: \_\_\_\_\_ Mob No: \_\_\_\_\_

Gender: Male  Female  Project of (institute Name): \_\_\_\_\_

Encircle the best option in following questions.

Demographic Factors

Q1: How old are you? (Age)

- 1) Under 20
- 2) 21-30
- 3) 31-40
- 4) 41-50
- 5) 51 or Above

Q2: What is your qualification? (Formal Education)

- 1) Illiterate
- 2) Primary
- 3) Matric
- 4) Intermediate
- 5) Bachelor ( B.A, B.Sc)
- 6) Master (BS HONS)

Q3: What is your marital status? (Marital Status)

- 1) Single
- 2) Married
- 3) Widowed

4) Divorced

Q4: what is your father/husband occupation? (Guardian occupation)

1) Government employee

2) Business man/ Shopkeeper

3) Vocational/ skilled person

4) Farmer

5) Labour

6) Private employee

Q 5: What type of training you attended? (Training type)

1) Electrical

2) Refrigeration and Air-condition

3) Plumber

4) Sewing and Embroidery

5) Any other\_\_\_\_\_

Ticks the most suitable option as strongly agree (1) and most inappropriate option as strongly disagree (5).

Q.6	(Dependent variable Sustainability of entrepreneurship training	S.A 1	A 2	D.K 3	D.A 4	S. 5
A	After attending vocational training I got employment based on skills, I learnt.					
B	After training, I started small business based on skills I learnt in vocational training.					
C	I transferred learnt skills to my family members, relatives, friends and others.					
	(Independent Variables) Organizational Factors	1-S.A	2-A	3-N	4-D.A	5-S.D.A
1	My institution/trainer helped me to meet successful entrepreneurs who motivated me towards entrepreneurship or job	1	2	3	4	5

2	organization provided all tools and equipment's needed for skills trade.	1	2	3	4	5
3	Organization provided me funds (start-up) capital.	1	2	3	4	5
4	Project manager always guided me and communicate useful instructions as per need.	1	2	3	4	5
5	I am satisfied with staff to resolve our problems.	1	2	3	4	5
6	Institute involved us in planning and decision making for the program.	1	2	3	4	5
	Social influences					
1	My close friends support my decision.	1	2	3	4	5
2	My family support my decision	1	2	3	4	5
3	I get enough help from my relatives about profession selection based on voc training.	1	2	3	4	5
4	My teachers support my decision..	1	2	3	4	5
5	Government and social institutions support my decision.	1	2	3	4	5
	Psychological influence					
1	Entrepreneurship education prepared me to make innovative and informed decisions about career choices	1	2	3	4	5
2	Vocational training increased my interest in a career in entrepreneurship or skill based job	1	2	3	4	5
3	I consider starting skills based business/job as being as important.	1	2	3	4	5
4	I describe vocational training as very interesting	1	2	3	4	5
5	I enjoyed learning skills during training very much.	1	2	3	4	5
6	I put a lot of effort in learning vocational skill.	1	2	3	4	5

