The Impact of Skill Development Trainings on Performance: An Empirical Evidence from Pakistan

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Abstract

The purpose of this study was to investigate the impact of skills development trainings on performance in terms of productivity and income level. This study formulated one hypothesis about the effect of skills development trainings on performance. The study is based on data that was collected through survey via convenient sampling method from the 207 female participants of the skills development training programs in the province of Khyber Pakhtunkhwa. Statistical techniques including factor analysis and regression analysis were used respectively to identify first the factors structure and later on test the hypothesized relationship between the skills development trainings and performance. The results show that skills development-training programs enhance performance in terms of raising productivity and income level of the participants. This result is very promising and encouraging in the context of a developing country. The link between the skills development trainings and performance is under-researched in the context of Pakistan. Studies in particular that address the effects of the skills development trainings in women are lacking in the existing literature in the Pakistan. Given the large portion of population of female, it is very important to explore the implementation of skills development trainings in females and the resulting outcomes of these trainings. This study fills this gap and contributes to the existing literature on the relationship between skills development trainings and the performance outcomes. Finally, the study results provide inputs to the policymakers in devising the practical implications for the policy makers while formulating policies regarding skills development training programs and assessing the outcomes of these programs.

Keywords: skills development trainings, performance, income level, productivity, survey; Pakistan

Introduction

Poverty is a widespread problem all over the world. Poverty is defined as a lack of income and productive resources to support a stable way of life. Furthermore, poverty includes a lack of

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access to education and basic services, social discrimination and exclusion, and a lack of participation in decision-making (Addae-Korankye & Alex, 2014). The global effects of the 2008 financial crisis are still felt today, and a new, even more serious crisis—the coronavirus disease 2019 (COVID-19)—is on the horizon. Global economies are being badly impacted by the COVID-19 epidemic, which is causing high unemployment rates. In order to address the inclusion of young in the labour market, governments in both developed and least developed countries (LDCs) are up against increasing obstacles (Chamadia et al., 2021). To eradicate poverty, the World Social Summit (WSS) calls on governments to address the root causes of poverty, meet basic needs for all, and ensure that the poor have access to productive resources such as education and training for skill development.

There are numerous interventions that can be used to alleviate poverty around the world. One of these interventions is to provide labor-force skill development training, which allows them to find work and, as a result, reduce poverty. UNESCO (2010) defines skills development training as the acquisition of practical skills and knowledge related to particular occupations. Skills development trainings refer to the trainings that enhance the skills of labour force for particular occupations. In this study, we will interchangeably use the terms skills development trainings and vocational trainings to refer to the same thing. According to UNESCO (2015), figures, the nations with effective skills development programs were successful in preserving employment rates both during and after the crisis. This encourages emerging and less developed nations to make investments in skills development training programs to boost economic growth in their national economies (Mubarik al., 2016).

Given the importance of skill development trainings, their role is visible in every economy; however, the importance attached to these trainings differs in developed countries versus developing economies (Adams, 2007; Pongo et al., 2019). Given the size of the developed countries' economies, skill development trainings are required to sustain growth, whereas developing countries require these trainings to enter new markets/industries. Vocational training improves the mobility of workers who do not wish to pursue higher education in order to find relevant jobs in developed countries. In contrast, in developing countries, vocational training is viewed as a tool for equipping workers with skills and enabling them to find work, thereby addressing the problem of unemployment (ibid).

Many developing countries, particularly, in the South-Asia, rely on remittances and require the vocational training programs to equip their workforce with skills and get employment in foreign

countries as well as help them to compete in the local market (Bhurtel, 2015). According to the ILO (1980), given the higher employment opportunities in informal economy than the formal economy, skills development trainings is important to reduce the gap between the skills required for a job and to get the employment. In summary, skills development trainings can play a vital role to reduce the unemployment and consequently poverty level in these countries. However, unlike the developed countries, in developing countries vocational trainings suffers failure because mostly these countries lack resources and curricula are not aligned with the labor market requirements, which makes it difficult for the vocational training programs to create employment opportunities in these countries (NICDHE, 2010). Therefore, more attentions should be devoted to explore the implementation of vocational trainings and the outcomes of these trainings in developing countries. A question arises whether investment in vocational trainings pay in terms of performance given the low resources availability in developing countries. Keeping this question in mind, many studies have researched the effect of vocational training on performance (e.g., Tan and Chanrasiri, 2004; King and Palmer, 2008; Karki, 2011; Janjua, 2011; Hilal, 2012; Peter-Cookey, 2017). The outcomes of these trainings are mixed. Some studies have come with positive outcomes in terms of productivity and income (Tan & Chandrasiri, 2004; King & Palmer, 2008; Billakhal & Mahjoub, 2015) whereas others have come with no effect (e.g., Klue, 2010; Hirshleifer et al., 2015; Murgor, 2017). These mixed findings show that there is a need to investigate the link between vocational trainings and the performance effects of these trainings.

Pakistan is a developing country with a majority of the population living below the poverty line. Despite the significant growth rate, human capital indicators are not satisfactory (Ali et al., 2012). Poverty in Pakistan cannot be alleviated solely through economic growth. All indicators must be improved, and investing in people will help them develop and get out of poverty (Ali et al., 2012). In comparison to capital, the human factor is an active factor of production that can increase capital and create social and economic organizations. It is difficult to effectively exploit capital and natural resources without improving workforce skills (Harbinson & Myers, 1964). Human resource development is a critical condition for economic growth (Ali et al., 2012). As a result, investment in skill development is required to improve people's economic and social well-being, and thus the country's growth (Ali *et al.,* 2012). To create job opportunities and reduce poverty, the government must establish vocational education training programs in all provinces. Recognizing the realized gains of skills development programs globally, the country

has introduced a skills development trainings reforms support system funded by international donor agencies like Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ), European Union (EU), and the Kingdom of the Netherlands. There are couple of studies that focus the skills development programs in Pakistan (e.g., Chamadia & Shahid, 2018; Raza & Khalid, 2017). Investigating the link between the implementation of vocational training programs and the performance effects of these trainings is critical; however, this is understudied in Pakistan. According to our knowledge, only one study, Chamadia and Mubarik (2021), which addresses the outcomes of the vocational and technical training programs in the province of Sindh, Pakistan. Furthermore, gender equality is widely recognized as a human rights issue. Gender inequality, which disadvantages women, is relatively high in Pakistan. The United Nations ranks Pakistan 135 out of 162 countries on the Gender Inequality Index (UNDP, 2020). It is extremely difficult for women to stand on their own two feet unless they are empowered with necessary skills that they can use to increase their earning potential. The above discussion suggests that women are not only discriminated in training opportunities, but they are also subject to even more severe discrimination in employment. For example, number of employed women (13 million) is not even one third of that of men (44million) (Pakistan Bureau of Statistics, 2015). Secondly, gender-training gap is also accruing for women. To the best of our knowledge, this study is the only study that investigate the effect of skills development trainings on performance in particularly females in Pakistan.

Based on the earlier discussion this study formulated the following research question:

Does an association exist between skill development trainings and performance (income level and productivity?

Theoretical Lenses and Hypothesis Development

Theoretical lenses

Two theories including human capital theory and resource-based view (Schultz, 1961) provide base for this research. The human capital theory (Becker, 1964) states that human capital, which can be produced through education, on-the-job training, and vocational training, can have an impact on a person's and a society's ability to earn money. Contrary to the traditional definition of labour, human capital refers to the knowledge, skills, abilities, and characteristics that a person develops through education, training, and experience. Becker (1964) emphasized the value of investing in people while pointing out the socioeconomic significance of human capital.

Numerous academics have since advanced the idea of human capital (e.g., Schultz, 1981; Becker, 1964; Psacharopoulos & Patrinos, 2018), and they have all viewed education and training as the two essential strands of the development of human capital. The valuable, rare, inimitable, non-substitutable (VRIN) resources, according to another viewpoint that emphasizes the significance of the resource-based view (Barney, 1991), give businesses a sustainable competitive advantage. Additionally, it was discovered that an organization's superior performance is dependent on its intangible assets (Ray et al., 2004). As a result, according to the resource-based approach, human resources with specialized skills are the most important scarce asset since, in contrast to broad education; specialized talents are more easily applied in the workplace. These theories give the groundwork for modelling how training affects employment.

Hypotheses development

Existing research suggests that people who receive skill development training are more likely to improve their financial situation than those who do not. All countries have urged to eliminate poverty by 2030 as part of the millennium goals, which necessitates the development of new ideas, initiatives, and interventions. Skills development programs are designed and implemented all over the world to provide income-generating opportunities to low-income people as well as skills to industries (Siddiky et al., 2020). Unemployment, which is primarily attributed to a lack of appropriate skills, is found not only in developing countries but also in developed countries (Bhurtel, 2015). According to UNESCO-UNEVOC (2013), people have difficulty finding work due to lack of relevant skills. Skills development trainings have been identified as more suitable for meeting the needs of the unemployed. Economically, skill development programs are critical for reducing unemployment and accelerating economic development in both developed and developing countries. The contribution of skill development programs vary across countries due to their unique contexts (Moses *et al.*, 2016).

There is no widely accepted definition of vocational education training. In general, vocational education trainings cover the acquisition of knowledge and skills for the workplace. UNESCO (2010) defines vocational education training as the acquisition of practical skills and knowledge related to specific occupations. Simply put, vocational education is the knowledge that is intended to provide proficiency in manual skills and prepare individuals for jobs in a specific occupation. Vocational training prepares people for specific trades and occupations. Vocational training is inextricably linked to the employment development system.

Outcomes of the vocational education and training

Several studies on the outcomes of skill development trainings have been conducted in both developing and developed countries. For example, providing skill development training empowers people and reduces poverty (Pongo et al., 2019). Younger generations with work skills can gain access to the labour market, reducing unemployment, poverty, and other consequences of social and economic exclusion, and thus boosting growth (Adams, 2007). Bettinger and Soliz (2016) conducted another study from the state of Ohio and discovered that vocational training has statistically significant positive effects on both genders' earnings. However, men were found to benefit more from enrolling in short courses while women benefit more from long duration courses. According to Kirki (2011), both soft and hard skills development have a strong relationship with employment. According to King and Palmer (2008), there is a positive relationship between skill development and productivity. Skills development trainings provide labour force with skills that allow them to gain access to a good job market, which in turn affects macroeconomic growth (Bhurtel, 2015).

Tan and Chandrasiri (2004) show that skill development training has a positive effect on unemployment reduction and earnings. Youth unemployment rates are low in countries where active skill development training programs are in place (UNESCO-UNEVOC, 2013). Skills development programs in Ethiopia, according to Broussar and Tekleselassie (2012), aided in the promotion of self-employment. The gap between the low skilled workforce and the knowledge-based workforce can be bridged by investing in skill development and education. Skills development has emerged as a primary means of reducing income disparities. Aside from that, skill development has been shown to reduce poverty (Cabral & Dhar, 2019). Skill development training programs provide youth with occupation-specific skills, which are critical for increasing their chances of finding work in the absence of access to higher education (Cabral & Dhar, 2019).

According to Bhurtel (2015), vocational education is important in developing job-related skills for specific occupations. Malamud and Pop-Eleches (2010), for example, discovered a strong relationship between vocational training education and craftsman-related occupations in Romania. Similarly, Pongo et al. (2014) argue that skills development trainings have a positive impact on employment skills in Ghana, allowing workers to enter the labour force and earn a living. Due to a lack of available talent and a mismatch in skill sets, Sri Lanka suffers from underemployment and low labour productivity, according to Dundar et al. (2014). They emphasized the

necessity of spending money on workforce skill development to increase productivity and competitiveness needed to achieve economic growth and poverty reduction. For the purpose of reducing poverty in Pakistan, Siddiqui et al. (2019) look into the efficiency of skills development programs. To learn how parents felt about programs that provide vocational training for those who are poor, researchers conducted a descriptive study. In contrast, Murgor (2017) discovered in the context of Kynia that skills development training programs were unable to develop soft skills in training participants, preventing them from finding work and increasing their income level. According to US study, however, job training had a detrimental effect on youth earnings while having a good influence on adult earnings (Heckman et al., 1999). The findings that skills development training programs had little effect or a detrimental effect on European youth were further supported by Kluve (2010). Ahmed and Chattopadhyay's (2016) recent study in India discovered a benefit of vocational training at the basic level of schooling, but they also noted a reduction in benefits at the secondary and tertiary levels. As a result, the relationship between skill development training programs and performance is ambiguous and warrants further investigation. Given the importance of skill development programs, they are designed and implemented in both the developed and developing worlds.

Unemployment occurs in both developing and developed countries due to lack of appropriate skills (Adams, 2007). In terms of skill development programs, many developing countries also use these trainings. The Netherlands initiatives for capacity development in higher education (2010) implemented a strategy for capacity building in vocational education in 23 South Asian countries, including Bangladesh, Afghanistan, and Bhutan, with the goal of enhancing such nations' innovative capacity, which could help them find new solutions and even export to the developing world. In Bangladesh, self-employment empowerment through vocational training and education has already been incorporated into the national employment policy (Tansen, 2012). In Nepal, the project “Skills for Employment Opportunity” is being implemented as a poverty-reduction strategy (Kafle, 2007). Due to a variety of factors such as limited employment opportunities, unskilled workforce, and increasing competition, the population has recognised the need for vocational training programs (Pant, 2008). Furthermore, more projects are incorporating vocational training into their plans (Lamichaane, 2013). Entrepreneurship courses are also required in both formal and informal education sectors to encourage self-employment in developing countries (UNESCO-UNEVO, 2006).

However, vocational training in developing countries continues to suffer as a result of factors such as non-aligned curricula and a lack of resources, making it difficult for vocational training programs to create employment opportunities in these countries (NICDHE, 2010). Given the scarcity of resources in developing countries, it is reasonable to wonder whether investing in vocational trainings pays off in terms of performance.

Pakistan is a developing country where a large proportion of the population lives in poverty. Despite the significant growth rate, human capital indicators are unsatisfactory. Poverty cannot be eradicated solely through economic growth in Pakistan. All indicators must be improved, and investing in people will accelerate their development and enable them to escape poverty (Ali et al., 2012). When compared to capital, the human factor is a more active factor of production because it can increase capital and create social and economic organizations. It is difficult to effectively exploit capital and natural resources without improving workforce skills (Harbinson & Myers, 1964). Human resource development is a critical condition for economic growth (ibid). As a result, investment in skill development is required to improve people's economic and social well-being, and thus the country's growth (Ali et al., 2012). Historically, the government focused on physical capital while ignoring the human capital sector, resulting in high unemployment and poverty levels. To address these issues, more skill development programs are required to reduce unemployment and poverty while also boosting economic growth. Recognizing the importance of vocational educational trainings, the Pakistani government has begun to prioritize vocational training programs.

Women make a marginal contribution to the economy in Pakistan, despite accounting for half of the total workforce, except in the labour market. Women's labor-force participation has increased in recent years, but there has been no discernible improvement in their economic well-being as a result of this increase. There is also a significant pay disparity between men and women working in different places. The main reason for this is that female employees receive no formal education, qualifications, or vocational training (Khan et al., 2013). Steps have also been taken to increase women's capacity and ability to bring equality, justice, and dignity to the workplace.

Credit services and female quotas for structured employment have already been announced. Thus, the education and health indices have begun to show changes, but there has been little progress in reducing gender disparities in the labour force and improving women's access to economic growth (Khan *et al.*, 2013). Women are discouraged from studying for a variety of reasons,

including low levels of female ability utilization, limitations to only certain areas of trade, socio-cultural representation, the principle of pardah (women's shielding), perceptions of female jobs, geographical location, cast and religion, financial role of the family, and many more (Janjua, 2011).

Overall, the relationship between economic and social outcomes of vocational education trainings in Pakistan is understudied. Few studies (for example, Raza & Khalid, 2017; Chamadia & Shahid, 2018), but studies that evaluating the outcomes of skills development training programs are scant with exception of Chamadia and Mubarik (2021). These authors conducted their study in the context of Sindh province and find that skills development trainings improved participants earning. There has been less research on the effect of skill development training on females than on males. Females constitute a sizable proportion of our population. It is critical to investigate the impact of skill development trainings on females. There are no studies in the context of Pakistan that have addressed the relationship between the performance outcomes of skills development training on performance, particularly in females, to the best of our knowledge. Our study is different from Chamadia and Mubarik (2021) as we focus on performance of skills development training programs including productivity and income particular in the female participants in the province of Khyber Pakhtunkhwa, Pakistan. We formulate the following hypothesis:

H1: Skills development trainings has a significant and positive effect on performance.

The following figure shows the research framework depicting the hypothesis

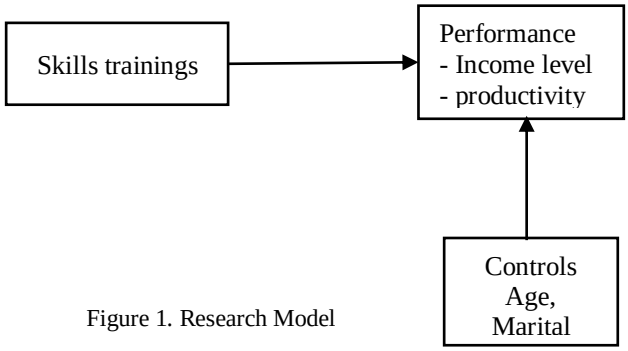

Figure 1. Research Model

Research Methodology

Data Source

This study is based on data collected through a questionnaire. Given the existing literature, the questionnaire was first developed in English and then translated into Urdu while keeping the participants' educational level in mind. The survey was conducted between September and December of 2020. In total, 500 questionnaires were distributed among female participants in training centers across Pakistan. Out of them 230 people returned the questionnaires with full data, which shows a response rate of 46%. Convenient sampling technique was followed to collect the data. The questionnaire was divided into two sections. The first section displays respondents' background information, such as age, education, and marital status, while the second section presents information on the constructs of the dependent and independent variables. After deleting cases, which provided incomplete information, the final sample of this study consists of 207 people. The characteristics of the study's sample are shown in Table 1.

Table 1. Characteristics of the selected sample

Respondents characteristics	Number	Percent
Marital status		
Married	114	55
Unmarried	93	44.92
Total	207	100
Age categories		
16-26 years	81	39.13
27-36 years	52	25.12
37-46 years	40	19.32
47-56 years	34	16.42
Total	207	100

Operationalization

This study includes three constructs: skill training, productivity, and income level. The independent variable is skills training, while the dependent variables are productivity and income level. Five questions are used to assess the construct of skills training: 1) Did the training improve your skills? 2) Did the training improve your work ability? 3) Did you receive embroidery training? 4) Did you receive sewing instruction? 5) How effective do you believe the instruction was? These are excerpts from the Chamadia et al. (2018). The productivity construct was measured by five items: 1) Did this training enable you to do more work in less time?, 2) Did the training improve the quality of work?, 3) Did you gain control over the work after receiving the training?, 4) Did the work become easier after receiving the training?, and 5) Did the training enable you to work in a more organized manner than before? These items are based on (Tripney et al., 2013). The income level construct is measured by four items, including 1) how much your income level increased as a result of using community-based learning program skills? 2) Did the cost of work decrease as a result of the training? , 3) Were you able to sell your products at higher prices after the training? 4) Did your income increase as a result of the trainings? All of the items listed above were assessed using a Likert scale ranging from '1 = strongly disagree' to '5 = strongly agree.'

We controlled for the respondents' age, education, and marital status, all of which could influence the relationship between skill training and productivity and income level. Age was determined by asking respondents about their age, education level, and marital status (whether or not they are married).

Statistical Techniques

Factor analysis and regression analysis are the statistical techniques we used in this study. In this study, we have used different methodological methods. The first approach is the component analysis of which cluster variables are shared in few classes (Yong and Pearce, 2013). It is used in a collection of variables to identify patterns (ibid). Big study of the components of each individual interrelated component to define different (construction) variables (Abdi & Williams, 2010). In exploratory and confirmatory factor analyses, the factor analysis can be listed in significant numbers. The factor structure is calculated by exploratory factor analysis, while the confirmatory factor analysis confirms this structure further (Hair et al., 2010). After finding the causes, we checked the impact of the

independent variable skills instruction on the dependent variables, including efficiency and income levels, using regression analysis. Regression is one of the most common methods used in many disciplines, primarily to relate dependent and independent variables regression (Liang and Zeger, 1993). Regression models can only yield true results if all of these models' assumptions are met (ibid).

Factor Analysis

As mentioned in the methodology section, there are three multi-item constructs identified in this paper: skills training (ST), Productivity increased (PI), and Income increased (II). We ran a factor analysis with the Varimax rotation method on the three sets of items (ST, PI, II) in Table 2. As can be seen from the Table 2, Centered on Eigen values larger than one, three factors were extracted. The scree plot shown in figure 2 further confirms this. The elbow point on the scree plot shows that out of the items that we entered, we get three factors as mentioned above. Validity and reliability of our developed scales established systematically. The validity of material, convergent validity, discriminatory validity and reliability was examined (Anderson & Gerbing, 1988; Nunnally, 1978). Initially, the authenticity of the material was assured across many phases of production and design. In the second case, all the objects are strongly loaded (i.e. > 0.50) and have high validity. Thirdly, cross-loads are below 0.40, which also guarantees the legitimacy of prejudice (Danese & Romano, 2013). Finally, Cronbach's alpha (α) is used for reliability. The Cronbach's alpha values are mostly above 0.70, which shows that reliability is very high. Thus, the reliability and validity of the constructs used in this study is ensured.

Tabel 2. Total variance explained

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total

1	5.142	36.730	36.730	5.142	36.730	36.730	4.759
2	1.816	12.974	49.704	1.816	12.974	49.704	3.235
3	1.444	10.315	60.019	1.444	10.315	60.019	2.336
4	,950	6.785	66.804				
5	0.755	5.395	72.200				
6	0.712	5.083	77.282				
7	0.647	4.618	81.900				

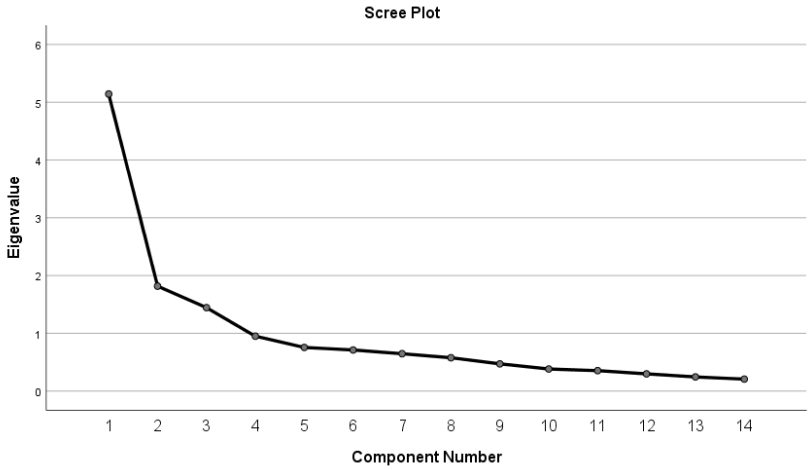

Figure 1. Scree plot showing three factors

Table 3. Factor analysis

Factors	Loadings	Cronbach's

		Alpha
Skills training (ST)		0.70
Training enhanced skills	0.872	
Training enhanced the ability of work	0.898	
Embroidery training	0.709	
Sewing training	0.750	
How much the training was effective	0.698	
Productivity Increased (PI)		0.787
Training enabled to do more work in less time	0.833	
Training enabled to improve quality	0.660	
Training enabled to get control of work	0.510	
Training enabled to work in a more organized way	0.592	
Training enabled the work easier	0.509	
Income Increased (II)		0.784
Training increased income level	0.782	
Training lowered the cost of	0.623	

work	
Training enabled to sell products at higher prices	0.501

Note: Extraction method: Principle factor analysis. Rotation method: Varimax. Rotation converged in five iterations.

As the Cronbach's alpha values are above 0.70, which shows that reliability is very high and we can use the average of items in each construct in the regression to test the hypotheses and answer the research question. The basic descriptive statistics for these constructs is given as under.

Common method bias

Survey research that concerns the perceptions related data often suffers from the limitation that relationship between the variable of interest is normally exaggerated, which act as a threat to validity (Gualandris *et al.*, 2014). We followed the guidelines of Malhotra et al. (2006) while designing this survey. Further, statistically, we checked CMV through Harman's one common factor (Podsakoff et al., 2003), which shows that CMV is not an issue in this survey.

Table 4. Basic statistics, reliability and correlation analysis

			Correlations		
Construct	Mean	SD	ST	PI	II
Skills training (ST)	4.261	0.846	1	.0.68**	0.311**
Productivity increased (PI)	4.331	0.677		1	0.409**
Income increased (II)	3.783	0.827			1

p<0.05; **p<0.01; ***p<0.001

Regression analysis

Next, we used regression to test the hypothesized relationship in the model. First, we entered the control variables including age and married versus unmarried in the regression (model 0 in tables and 5). Second, we entered the main independent variable skills training (ST) as independent variable in the regression (model1 tables 4 and 5). As shown in model 0, table 4, age has negative and significant effect on productivity ($\beta = -0.320$, $p < 0.05$) while married women compared to non-married has positive and significant effect on productivity ($\beta = 0.413$, $p < 0.05$) while for income the effect is negative and non-significant ($\beta = -0.086$, $p > 0.05$). Skills training has positive and significant effect on productivity ($\beta = 0.508$, $p < 0.001$). This provides enough evidence to support hypothesis 1. The controls variables do not have significant effect on the dependent variable "income" (model 0, table5). The effect of skills training on income level is positive and significant ($\beta = 0.241$, $p < 0.05$), which further provides support for hypothesis 1.

Table 5. Hierarchical regression analysis- productivity as dependent variable

	Control variables Model 0	Main effects Model 1
Constant	7.094* * *	2.914* *
Age	-0.320**	-0.282*
Married versus unmarried	0.413*	0.262*
Skills training		0.508***
R^2	0.114	0.497
ΔR^2	0.114	0.384
F for R^2 change	5.382* *	63.375* **
Adjusted R^2	0.072	0.479

Note: Significant at: *p-value, 0.05, * *p-value, 0.01 and * * *p-value, 0.001 level.

Table 6. Hierarchical regression analysis- Income level as dependent variable

	Control variables Model 0	Main effects Model 1
Constant	5.533* * *	3.397* * *
Age	0.147	0.090
Married versus unmarried	-0.161	-0.086
Skills training		0.241*
R^2	0.022	0.076
ΔR^2	0.022	0.053
F for R^2 change	0.931	4.688*
Adjusted R^2	0.002	0.041

Note: Significant at: *p-value, 0.05, * *p-value, 0.01 and * * *p-value, 0.001 level.

Discussion and Conclusion

Unemployment is a serious problem all over the world, but it is especially severe in developing countries. Through innovative interventions, unemployment and, as a result, poverty can be eliminated. One major cause of poverty is lack of required skills for various occupations. Among the creative interventions, skills development trainings play an important role in this regard by providing people with the necessary skills for various occupations, thereby assisting them in finding work and eradicating poverty. Keeping this in mind, skill development training programs are being implemented in many countries, particularly in developing countries due to their vulnerability to rising unemployment. In Pakistan, as in other developing countries, the role of these trainings is even more critical. In this context, the question arises as to whether Pakistan can afford to invest in these skill development and training programs. Furthermore, the female population constitutes a significant portion (more than half) of the Pakistani population, which, if properly equipped, has the potential to bring about significant change across the

country by lifting many families out of extreme poverty. Creating a link between skill development trainings is critical, but it is rarely addressed in this context. Based on the human capital development and resource-based theories, this study looked at the impact of skill development training programs on females in Pakistan.

Effects of control variables

Among the control variables, age has a negative effect on productivity, while married women have a greater effect on productivity than unmarried women do. This appears to be very interesting research. Female training participants in their early twenties are more productive than those in their late twenties. This could be attributed to the fact that younger females have more energy and a desire to advance in their careers. Females who are married have a greater effect on productivity than females who are not married. The tentative explanations could be that married women have more responsibility, which makes them more productive while participating in skill development training programs. In the case of income level as the dependent variable, the effect of these control variables is only marginally significant. Further investigation could look into why the effect of the control variables is significant on productivity but not on income level. Other factors could be investigated further as mediating and moderating variables.

Effects of skills development programs on performance in terms of productivity and income level

The findings show that skills development training programs have a significant impact on the productivity of female participants in terms of enabling training participants to do more work in less time, improving work quality, making work easier after training, and enabling them to work in a more organized manner. In effect, skill development training programs increased the productivity of training participants. This is a fascinating discovery. Furthermore, skill development training programs have a significant positive effect on the participants' income level.

Overall, skill development training programs improve performance in terms of increased productivity and income level, which is an intriguing finding. These findings are consistent with those of other studies, including Tan and Chandrasiri (2004), King and Palmor (2008), Kirki (2011), Janjua (2011), Hilal (2012), and Peter-Cookey (2017), and Chamadia and Mubirik (2021). Among them, Chadrasiri (2004), King and Palmor (2008), and Karki show that skill training improves performance in developing countries. Janjua (2011) collected data from three sources: a survey, a community census, and

interviews in Panjab and Khyber Pakhtunkhwa (KPK) districts. The authors report a positive relationship between skill development training programs and participant productivity and income level. This author also encountered socio-cultural barriers associated with the participants while receiving training. However, the sample for this study included both males and females, with a lower ratio of females than males. Hilal (2012) discovered, using both secondary data and case studies, that skills development-training programs have a positive effect on women's employment and income levels in Palestine. Our study is similar to Hilal (2012) in that they only looked at the outcomes of female training participants. Similarly, Bhurtel (2015) discovered a positive relationship between skill development programs and income level in the context of Nepal. In the context of Thailand, Peter-Cookey (2017) reported a positive effect of skills development trainings on participants' performance and productivity using a mixed method. This study contrasts with the findings of Murgor (2017), who found in the context of Kynia that skills development training programs were unable to develop soft skills in training participants, preventing them from obtaining employment and increasing their income level. According to these authors, factors such as problem-solving ability, ability to work independently, interpersonal skills, adaptability, creativity, and innovation are more strongly associated with self-employment, which enabled participants to get a job and raise their income level. Our study is also in line with Chamadia and Mubarik (2021) findings who found positive effects of skills development trainings on the income of the participants in the province of Sindh in Pakistan. However, our study findings are in contrast to studies which have shown either no or negative effects (Kluve, 2010; Ahmed & Chattopadhyay, 2016; Murgor, 2017) of skills development-training programs.

Thus, the basic conclusion is that investing in skill development-training programs pays off in terms of increased productivity and income levels among female participants from Pakistan. This result is very promising and encouraging in the context of a developing country, Pakistan given the reality that it is a low-income country and under employment is a common issue. In effect under employment is a common issue rather than unemployment (Chamadia &Shahid, 2018).

Theoretical contribution

Skills development trainings are critical interventions for closing the skills gap between those needed for jobs and those able to find work. After the skill development training programs are in place, the outcome of these programs is critical because it is the effects of these programs that matter in the end, not the training programs

themselves. As previously stated, skill development trainings are equally important in both developing and developed countries due to their respective emphasis on different aspects of their economies. Given the logic of skills development training programs in various economies, it is critical to establish a relationship between the programs and their outcomes in terms of performance. This area is understudied in the context of Pakistan, particularly in terms of the outcomes/performance of skill development training programs in the country's female population. As a result, this acts as a research gap that must be filled. This study adds to the literature on the implementation of skills development programs and their outcomes in terms of increasing productivity and income level by establishing a link between skills trainings and programs performance in females in the province of Khyber Pakhtunkhwa in Pakistan. This study will contribute to academic understanding of the debate over whether investing in skill development training pays off or not, and whether it contributes to performance.

Practical Implications

This research could be useful to a variety of stakeholders from a variety of perspectives. First, policymakers should prioritize skills development training programs in their policies and broaden the scope of these trainings to include other areas, given that these trainings produce the desired outcomes in terms of productivity and income level. Second, given the resource constraints in developing countries, this research would assist policymakers in justifying allocating funds to these training programs. Third, the findings of this study will assist policymakers in revising and reforming their policies and governance regarding the implementation of skill development training programs. Fourth, corporate executives, both domestic and foreign, can gain access to skilled labour and improve their performance. Foreign firms, in particular, can form joint ventures with the government to support such training programs, allowing them to outperform their competitors by gaining access to skilled labour. Finally, this discovery will assist training participants in participating in these trainings as well as raising awareness about the skills development trainings among other people. The impact of these trainings on the participants' performance will create an internal drive to motivate these people and others in their circle to obtain these trainings and increase their productivity and income.

Limitations and further research

There are a few limitations to this study. First, this study only includes data from the province of Khyber Pakhtunkhwa. More research is needed in other areas to determine whether the same relationships exist between skill development trainings and their outcomes. Second, only one method, the survey method, was used to conduct this study. Further research should use multiple methods, such as case studies, interviews, and secondary data, to validate the findings of this study in the same and other areas. Third, the constructs of the skills developing trainings, productivity, and income level need to be further enriched given the most recent literature. Fourth, the sample size consists of only 207 training participants and further studies could include a large sample size in their studies so that to generalize the findings of this study to other contexts as well. Fifth, in this study only two variables including age and marital status were controlled. Further studies should control for more relevant control variables such as education level along with the current control variables. Finally, age and marital status have a significant effect on productivity, but have no effect on income level. Further research should be conducted to investigate the causes of these phenomena and to test these variables as moderating and mediating variables in the relationship between skill development trainings and the outcomes of these trainings. Further study should test for moderating and mediating factors such as, for example, the ability to overcome challenges, autonomous working experience, leadership skills, adaptability, and imagination to explore the hypothesized relationship in more detail. Despite these limitations, the study's findings are of great interest to academics, practitioners, and policymakers alike.

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