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An empirical analysis of education, earning and household expenditure financing: the case of Swabi District

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ABSTRACT

Background: Education is considered as the most important tool to boost economic growth and human development. It has been established in the literature that higher level of education leads to higher development levels.

Objectives: The main objective of our research is to investigate the Mincer and Becker earning function. This function is the study of the effects of investment in schooling and on-the-job training on the level, pattern, and interpersonal distribution of life cycle earnings associated with the pioneering work on human capital. Therefore, this theatrical function is empirically tested in the context of Swabi District, Khyber Pakhtunkhwa, Pakistan.

Methods: A cross-sectional design was adopted to conduct this study. A sample of 96 individuals were interviewed through a standardized questionnaire from Razzer Tehsil, Swabi District, Khyber Pakhtunkhwa, Pakistan. A multi-stage sampling procedure was used to specify the sample size. Simple and multiple regression models were used to explore the association between respondents' income (dependent variable) and explanatory variables (education, experience and skill).

Results: Findings shows that all the econometrics models were good fit. For instance R2=0.66 for education, 0.72 for experience, 0.82 for kills and 0.62 for overall model. It implies that the variations in the dependent variable (earnings) were significantly explained by independent variables. Education (β= 3886.95, p-value= 0.005), experience (β= 1181.987, p-value= 0.001) and skill (β= 6681.767, p-value= 0.096) were significantly affecting income of individuals in separate models. However, skill was noted insignificant in the multiple-regression model.

Conclusions: The findings of this study showed that education, experience and skill are very important determinants of individuals' income. The federal government should ensure universal access to education. The local government may focus on technical education to produce skilled labor or trained and qualified human resource.

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1. INTRODUCTION

Education is considered as the most important determinant of economic growth (Afzal et al., 2012). It plays an essential role in poverty reduction (Kakar et al., 2011). The provision of education is the main responsibility of the state (Qureshi, 2004). Education/schooling has positive impacts on all economics of

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development including economic, social and human development (Mehrotra & Jolly, 2000). The schooling is very essential for the progress of manpower. (Becker, 1992). Berrebi (2007) revealed the negative association of education with poverty. The Mencerian earning function states that return on schooling increased with an extra year of schooling (Nasir & Nazli, 2000). Schooling referred to self-investment which people do on themselves (Bowman, 1966). In terms of schooling, the concept of self-investment can be understood by the theory of human capital. The essential perception of this theory is that schooling is self-investment that human beings make on themselves and which maximizes the productivity and economic efficiency of labor (Olaniyan & Okemakinde, 2008). The range of self-investment includes schooling and training for specific employment and job experience (Lepak & Snell, 1999). The efficiency of manpower can improve through schooling, training and job experience for the completion of complex tasks during the job (Haque, 1977).

At the time of Pakistan's independence (August 14, 1947), majority (85%) of the total population was illiterate (Ashraf & Ismat, 2016). Later on, the literacy rate improved. However, during the year 2016-17, the literacy rate of Pakistan declined from 60% to 58% (Khilji, 2018). The total literacy rate of Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan were 62%, 55%, 53% and 41% respectively during the fiscal year 2015-16 (GoP, 2018). The gross enrolment rate of Pakistan in fiscal year 2013-14 was 90% while in 2015-16 it was 87% (Khawaja, 2018). The total gross enrolment rate of Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan in the fiscal year 2015-16 is 93%, 78%, 88% and 60% respectively, and in the fiscal year 2013-14, it was 100%, 76%, 89%, and 67% respectively. The aggregate of schooling institutes was 260.8 thousands during the year 2016-17 and the estimated value of schooling institutes were 267.7 thousand during 2017-18. During 2016-17, the total numbers of teachers were 1.726 million and during 2017-18 the estimated value of total teachers was 1.808 million (Pakistan Economic Survey, 2017-18). The investments in the education sector by the government in the year 2013-14, 2014-15, 2015-16 and 2016-17 were 2.1%, 2.2%, 2.3%, and 2.2% respectively of the total GDP of the country (Pakistan Economic Survey, 2017-18).

Education is significantly affecting a person's income (Kravdal, 2008) cited by (Khamis et al., 2010). The outcomes of people in schooling are usually positive and significant. The return on education rises with an increase in one level of education (Ackah et al., 2014). A person with a higher level of schooling earns better income (Card, 1999). Education and earnings are positively linked with each other (Afzal, 2011). Social scientists sketch a strong inference about the significant impact of schooling on earning through the existence of significant evidence of a linear association between them (Saqib et al., 2016). In addition to this, the skill has also a positive and significant impact on the peoples' earnings (Jolliffe, 1998). The impact of job experience on the skillful labors was positive and significant with individuals' earnings (Dustmann & Meghir, 2005). Above all, it is necessary to mention that to find whether schooling, experiences, and skills have an association with the earning of people, the availability of experimental, empirical and scientific facts is inevitable (Card, 1999).

Higher schooling leads to a minimum risk of unemployment and low income (Mincer, 1991). Education helps to reduce income inequality (Kakar et al., 2011). Ammermueller et al. (2009) report that an increase in regional unemployment by 1% decreases the returns to education by 0.005 percentage points. This implies that higher-skilled employees are better sheltered from labor market changes with respect to their jobs but encounter larger wage changes than less-skilled employees. Human capital development is essential for poverty reduction. Ensuring a significant decrease in poverty is now the foremost objective of every economy, both developed and developing (Olopade et al., 2019). Poverty reduction is regarded in this study as achieving economic growth through human capital development, which allows people to contribute to and benefit from economic growth. Subsequently, several factors that promote human capital development have been identified in the literature, and such factors include investment in human capital, job creation, structural transformation, entrepreneurship, social protection and institutions (Olopade et al., 2019). Therefore, education is an important factor that reduces income inequality and poverty.

Therefore, this study aims to find the impacts of necessary factors including training programs, school quality, literacy and skills on the income of people (Nasir & Nazli, 2000). The majority of the studies available on education and earning have used secondary data and the current research is based on the primary data. To date, no study has been conducted in rural areas of Swabi District, Khyber-Pakhtunkhwa, Pakistan. The following hypotheses are aimed to be tested in this study:

H11: The higher the schooling level doesn't lead to higher income.
H12: Skills have an association with earning.
H13: Experience has no role in individuals' earnings.

2. METHODS

2.1 Study design

This was a cross-sectional analysis and a standardized questionnaire was used to collect the data from respondents. This research was explanatory in nature that has explored the association between individuals' income and their qualifications, job experience, and skills.

2.2 Setting

Data were collected in Swabi District. The district is located between the Indus River and Kabul River, between 33°-55′ and 34°-23′ North latitudes and 72°-13′ and 72°-49′East longitudes. The majority of people are dependent on agriculture (Fawad et al., 2013). Its area is 1,543[1] km². The total population of Swabi District is 1,624,616. There are four tehsils in Swabi District. Population of Razar Tehsil, Swabi Tehsil, Topi Tehsil and Lahore Tehsil are 583,936, 406,212, 328,300, 306,168 respectively[2]. In Pakistan, the education ranking of Swabi District is 70. Data were collected in the month of August 2018.

2.3 Participants

Those respondents were interviewed who were adults and working. The individuals who were unemployed and children were excluded from the target population. These respondents were selected on a convenient based strategy. For instance, those who were educated and willing to interview.

2.4 Variables

2.4.1 Dependent variable

In our study, the dependent variable is monthly income, which is measured in Pakistani Rupees (PKR). We followed the previous study by Saqib et al. (2016).

2.4.2 Independent variables

Three independent variables are used in this analysis which are elaborated below.

i. Education

Respondents' qualification is one of the independent variables used in this analysis. It is measured in the years of schooling (Jolliffe, 1998; Saqib et al., 2016) or the years studied in a *madrassa* (religious academic institute) following expert opinion.

ii. Skill

Skill refers to both respondents' formal and informal trainings from skilled workers. In our model, it is measured as dummy, where 1= skilled and 0= otherwise (Saqib et al., 2016).

iii. Experience

[1] https://www.worldatlas.com/as/pk/kp/where-is-swabi.html
[2] https://www.politicpk.com/swabi-district-population-of-cities-towns-and-villages-2017-2018/

The respondent's experience is an independent variable in our study and is measured in the number of years the individual spent in work or employment for earning livelihood (Ammermueller et al., 2009; Saqib et al., 2016).

2.5 Data Sources

Primary data were collected through a standardized questionnaire from the 96 respondents.

2.6 Sample design

The population of Shewa, Asota and Karnel Sher Killi (KSK) are 28,897, 9,635 and 26,161 in 2017[3] respectively. The following data were used to find the sample size (n) which is equal to 96 respondents (Equation. 1). These respondents were selected randomly for the interview.

$$n = \frac{Z^2 P(1-p)}{d^2} \qquad (1)$$

P= 50%, z= 1.96 & d= 10%

$$n = \frac{(1.96)^2 0.5(1-0.5)}{(0.5)^2}$$

Sample Size: n=96

The sample included 96 respondents who were interviewed during the field survey in 2018. However, eleven questioners were rejected due to incorrect data. According to this research, sampled respondents were divided into three categories: lower-income, middle-income and upper-income households with income levels as ≤PKR. 20,000, PKR. 21,000-50,000 and above >PKR. 50,000 respectively.

The study has adopted a multi-stage sampling approach. In the first stage, Khyber-Pakhtunkhwa was selected purposively among the four provinces of Pakistan. Secondly, among 25 districts of Khyber-Pakhtunkhwa, Swabi District was selected due to its low education ranking and because no such type of study was conducted before. Thirdly, among the four tehsils of Swabi District, Razar Tehsil was selected. Fourthly, In Tehsil Razar, three villages namely; Asota, Karnal Sher Kelli (KSK) and Shewa were selected.

2.7 Data analysis methods

Fisher's exact test was used to evaluate the difference in the respondents' income and their monthly expenditures. This analytical technique was used when the cells had a frequency of less than 5. Instead of Fisher's exact test, Chi-square test was used to analyze the difference among the respondents' income groups, when the cell units had a frequency greater than 5.

The one-way analysis test was used to find the mean difference in respondent's expenditure made for food, education, health, social activities, utility bills, and house rent. It shows the overall difference among the means of expenditures made by different human needs. Another analytical technique known as Least Square Difference which is shortly known as LSD was used to investigate the difference among the expenditures on different basic needs within the groups.

Before going to the regression model, the bivariate analysis was applied. Those factors which had a positive association with respondents' income and had a significant impact on earnings, were included in the models. Independent variables or explanatory variables were mostly from literature and on the field experience that included age, gender, qualification, and nature of education, type of education, family

[3] https://www.politicpk.com/swabi-district-population-of-cities-towns-and-villages-2017-2018/

system, experience, and skill. Pearson correlation coefficient is denoted by "r" which was calculated and employed for further analysis takes the value from (-1) to (+1) indicating the negative and positive relationships. The magnitude of r shows the strength of the relation. The r-value can be categorized which has a meaning and shows the strength of relationship i.e., Cohan (1988) criteria (Saqib, 2015).

The multiple-regression was employed to evaluate the important socio-economic factors that affect the respondent's income significantly (Equation. 2). The dependent variable was the respondent's income in the regression model as used by Saqib et al. (2016). The below regression model was estimated to determine the socio-economic factors which have affected the respondents' income.

$$Y_i = \beta_0 + \beta_1 Edu + \beta_2 Skill + \beta_3 Exp + \varepsilon i \qquad (2)$$

Where,

$Y_{i,}$ =respondent's income,
Edu= Education of respondents,
Skill= Skill of respondents
Exp=Experience of respondents
β_i= Coefficient of the regression model
ε, Error term of the model.

Equation 1 was further simplified in the below model to estimate the impact of different factors on the household income independently.

$Y_i = \beta_0 + \beta_1 Edu + \varepsilon_i$ (For education and income relationship)

$Y_i = \beta_0 + \beta_1 Exp + \varepsilon_i$ (For experience and income relationship)

$Y_i = \beta_0 = \beta_1 Skill + \varepsilon_i$ (For skill and income relationship)

3. RESULTS

3.1 Descriptive analysis of respondent's profile

The descriptive analyses of households' respondents show important socio-economic factors. The average age of respondents was approximately 32 years, education as completed schooling years was approximately 13 years, the average experience of household in labor market was approximately seven years and the average monthly income was approximately PKR. 26,796. People were related to government employment, semi-government employment, and self-business; and their income ranged from PKR. 3,000 to Rs. 1,00,000 (Table 1). People spend a large part of their monthly income to fulfill their basic needs including food expenditures, education expenditures, health expenditures, cloth expenditures, and social-activities. The average monthly expenditures on basic needs: food expenditure was approximately PKR. 29823.53, education expenditures were PKR. 11118.44, health expenditures were PKR. 4967.06, cloth expenditures PKR 4850.96, social activities expenditures were PKR. 3352.94, and expenditures on utility bills were PKR. 3217.93.

3.2 Comparison of respondents' income with education and experience

The levels of education in the context of Pakistan include primary level (5 schooling years), middle level (8 schooling years), metric level (10 schooling years), intermediate level (12 schooling years), bachelor level (14 schooling years) and master level (16 schooling years) (Shabbir, 1991). At the primary level, half (50%) of the total respondents stated that their income was lower-income (Table 2). At the matric level, more

Table 1. Descriptive statistics of the socio-economic profile of respondents

Respondents' Profile	Variables explanation	Min	Max	Mean	SD
Age	Household's age in years	16.00	66.00	32.09	10.12
Education	Completed schooling years	5.00	16.00	13.18	3.05
Experience	Total years of labor market experience	1.00	32.00	7.45	7.40
Income	Respondents' monthly income in PKR	3000.00	100000.00	26796.16	21270.23
Households' Expenditures (monthly)					
Food expenditures		5000.00	150000.00	29823.53	17767.13
Education expenditures		0.00	200000.00	11118.44	31322.38
Health expenditures		300.00	20000.00	4967.06	4864.73
Cloth expenditures		300.00	30000.00	4850.96	5712.27
Social-activities expenditures		800.00	21000.00	3352.94	3178.18
Utility Bills		0.00	40000.00	3217.93	4854.10

Source: Field Survey, 2018, SD= Standard Deviation, Min=Minimum; Max=Maximum

than half (54.55%) of the total respondents stated that their income as lower income. At the intermediate level, the majority (81.25%) of the total respondents stated their income as lower income, few (5.25%) of them reported their income in the upper group of income. At the bachelor level, a majority (58.8%) of the total respondents stated their income as lower-income. The value of Fisher exact test (p=0.01) shows a significant difference among the income groups of respondents along with the level of education.

Table 2. Respondent's income by qualification and experience

Qualification	Income group		
	Lower income	Middle income	Upper income
Primary level	2 (50.0)	1 (25.0)	1 (25.0)
Middle level	4 (50.0)	1 (25.0)	1 (25.0)
Matric level	6 (54.55)	4 (36.36)	1 (9.09)
Intermediate level	13 (81.25)	2 (12.5)	1 (6.25)
Bachelor level	10 (58.8)	5 (29.4)	2 (11.8)
Master level	7 (21.2)	18 (54.5)	8 (24.2)
Fisher exact test P-value = 0.01***			

Source: Field Survey 2018, Note. Figures in parenthesis are percentages
Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

The respondents' experiences were classified into three categories: low experience (<=5 years), medium experience (6-20 years) and high experience (> 20years). The results in Table 3 showed that the majority of the respondents had an experience of less or equal to 5 years. Among this low experience group of respondents, the majority (63.3%) stated their income was lower-income (<=20000 PKR). The group of respondents medium experience (6 to 20 years), less than half (43.3%) regarded their income as lower income. Among the group having experience of 20 years and above, only one respondent rated his income as low income. There was a significant difference in income among the groups of respondents along with their years of experience as shown through the value of p= 0.001.

Table 3. Respondents' income by experience

Experience (Years)	Income group		
	Lower income (<= 20000)	Middle income (21000 – 50000)	Upper income (> 50000)
<=5	31(63.3)	17 (34.7)	1 (2.0)
6-20	13 (43.3)	11 (36.7)	6 (20.0)
>20	1 (16.67)	2 (33.33)	3 (50.0)
Fisher exact test P-value = 0.001***			

Source: Field Survey, 2018; Note. Figures in parenthesis are percentages
Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

3.3 ANOVA and descriptive analysis of amount of Household Expenditures

The mean differences among the obtained amount of expenditures from the lower, middle, and upper groups were tested through ANOVA. The expenditures which were related to education and social activities were categorized into three categories: lower expenditures, middle expenditures and upper expenditures of education. Expenditures incurred on social activities were also classified into three groups: lower expenditures, middle expenditures, and upper expenditures. The lower expenditures of education and social activities were PKR. ≤20,000, middle expenditures ranged from PKR. 21,000-50,000 and upper expenditures were PKR. >50,000.

The mean difference in the amount/number of education expenditures was not statistically different. It implies that the mean difference among the respondents' groups of education which include: lower expenditures, middle expenditures, and upper expenditures were insignificantly different from each other. In the case of the social activities expenditures, the mean differences were significant (F-test= 4.22, p≤ 0.01). The mean of upper expenditure on the social activities obtained a higher amount (PKR. 5600) compared to the lower expenditure (PKR 2597.73) and middle expenditure (PKR. 3700) of social activities. The upper group of expenditures had higher income compared to the expenditures of lower and middle groups therefore, their spending power was high as compared to the lower and middle groups of expenditures (Table 4).

ANOVA gives an overall difference among the respondents with regard to expenditures on education and social activities. However, it could not be used to evaluate the mean difference of expenditures among the individual groups of respondents related to education and social activities. For this purpose, an LSD post hoc test was applied to study the situation in more detail (Table 5).

Table 4. ANOVA & descriptive analysis of education expenditure and social activities

Expenditure Indicators	f	Mean	SD	F-value
Education expenditures				
Lower expenditures	44	5837.89	10357.26	2.67
Middle expenditure	31	12361.29	36391.94	
Upper expenditure	10	30500	60586.49	
Social activities expenditures				
Lower expenditure	44	2597.73	2005.63	4.22***
Middle expenditure	31	3700	3913.23	
Upper expenditure	10	5600	3898.43	

Source: Field Survey, 2018, Significance levels: *=p≤0.10, **=p≤0.05 and ***=p≤0.01

Table 5. LSD in case of post hoc test

Expenditure	Difference between in incomes groups		
	Between lower and middle income	Between lower and upper income	Between middle and upper income
Education expenditure	ab	ac*	bc
Social activities expenditure	ab	ac***	bc

Source: Field Survey 2018, Significance levels: *=p≤0.10, **=p≤0.05 and ***=p≤0.01

(a) stands for the mean value of lower-income group; (b) stands for mean value of middle-income group; (c) stands for mean value of upper-income group. (ab) is the difference of (a) and (b), (ac) is the difference of (a) and (c), and (bc) is the difference of (b) and (c). Results show that between education expenditures and social activities expenditures, the mean difference was significant at p≤0.05 (Table 5).

3.4 Bivariate Correlation analysis

In order to know the significant association between respondents' income and socio-economic factors including age, gender, qualification, nature of education, type of education, family system, experience, and skill, the correlation matrix was calculated for these variables (Table 6).

Respondents' income and their age are moderately positively associated with each other. The association between these two variables is significant at a 99% confidence level. Income and qualification of the respondents are moderately correlated with each other as the value of r= 0.416 shows. The correlation between respondent's qualification and their income are significant at a 99% confidence level. The value of r=0.548 shows that respondents' experience is moderately correlated with their income. The correlation between the respondents' experience and their income is significant at 99% confidence level. Likewise, there is a moderately positive relationship between the respondents' income and their skills as a value of r=0.286. The skill is developed by the training, therefore, training is very important for raising the respondents' income. The correlation between skill and the respondent's income is significant at 99%.

Table 6. Correlation matrix

Respondent's profile	1	2	3	4	5	6	7	8	9
1. Monthly income (PKR)	1								
2. Age	0.422**	1							
3. Gender	0.043	0.018	1						
4. Qualification	0.416**	0.177	-0.055	1					
5. Nature of education	0.091	0.117	0.167	0.053	1				
6. Type of Education	-0.076	0.075	-.441**	0.073	-.462**	1			
7. Family system	0.112	-0.025	-0.128	0.106	0.076	-0.076	1		
8. Experience	0.548**	.655**	-0.077	0.166	0.129	0.027	0.1	1	
9. Skill More effect income	0.286**	-0.085	0.049	0.373**	0.194	-0.194	0.297**	0.094	1

Source: Field Survey, 2018; Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

3.5 Results of Simple Regression model

3.5.1 Association between respondents' Education and income

The findings in Table 7 shows that the relationship between respondents' income and education is positive. The value of p=0.000 indicates that respondents' qualification has a significant effect on their earnings. The coefficient of this model shows that the income of respondents rises by PKR. 6037.838 with every additional year of education. The value of R-square indicates that the overall model of our research is a good fit: 65% of variations in the respondents' income are explained by the respondents' qualifications.

Table 7. Respondents' qualification and income relationship

Independent Variable	β	Std. Error	P-value
(Constant)	-1048.925	7011.338	0.881
Qualification	6037.838	1449.780	0.000***
R^2 =0.657			

Source: Field Survey, 2018, Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

3.5.2 Association between Respondents' Experience and income

The association between respondent's income and job experience is positive. The value of p= 0.000 indicates that experience has a significant impact on the income of individuals. The coefficient value of this model shows that a one-year increase in the experience can increase an individual's' income by PKR.1576.769 (Table 8). R-square value shows that 72% of the variation in the respondents' income is explained by the job experience of respondents.

Table 8. Respondents' experience and income relationship

Independent Variable	β	Std. Error	P-value
(Constant)	15053.874	2762.691	0.000***
Experience (year)	1576.769	263.992	0.000***
R^2 =0.723			

Source: Field Survey 2018, Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

3.5.3 Association between respondent's Skill and income

The estimated results of the model show that skill is a significant determinant of the respondent's income. There was a significant relationship (p=0.008) between respondent's skill and income. The coefficient of our model shows that, if the value of the dummy is changed from 0 to 1, it can raise income by PKR.12115.928 (Table 9). The R-square value of the model shows that the overall model of our research is highly fit: 82% of the variation in the respondents' income is explained by the skills of respondents.

Table 9. Respondents' skill and income relationship

Independent Variable	β	Std. Error	P-value
(Constant)	20524.390	3201.8	0.000
Skill	12115.928	4450.3	0.008
R^2=0.82			

Source: Field Survey, 2018, Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01

3.5.4 Results of Multiple Regression Model

According to the correlation matrix, four variables: age, qualification, experience, and skills are significantly associated with respondents' income. Therefore, in the regression model, only the stated significant variables are included. The R-squared value (R^2= 62%) shows that the regression model is a good fit. The value of variance inflation factor (VIF) indicates that the multi co-linearity does not exist in our model. There is a positive association between respondents' income and qualification as shown in Table 10. The coefficient of this variable indicates that the respondents' income is increased by PKR.3886.95 with an increase of one year in qualification. The value of p=0.005 shows that the additional years of schooling has a significant impact on the respondents' income. The coefficient of experience shows that the respondent's income increases by PKR.1181.767 with one year of increase in the experience. The results are significant at a 99% level of confidence. Age was found insignificant in our model. The relationship between respondent's skill and income is positive. However, it is not highly significant. The value of coefficient of this variable shows that respondents' income increases by PKR. 6681.767, with skill acquisition.

Table 10. Results of multiple regression model

Independent Variables	β	Std. Error	P-value	VIF
Age	250.542	242.636	0.305	1.879
Qualification (year)	3886.95	1353.724	0.005***	1.224
Experience (year)	1181.987	327.141	0.001***	1.832
Skill	6681.767	3966.258	0.096*	1.238
Constant	11431.578	8183.008	0.166	---
R^2 =0.623				

Source: Field Survey, 2018, Abbreviations. VIF=Variance Inflation Factor
Significance levels: *=p≤ 0.10, **=p≤0.05, ***=p≤0.01;

4. DISCUSSION

It is commonly believed that human capital is a very important contributor to economic growth and development (Olopade et al., 2019). The provision of investment in education and health has been recognized as an important determinant of national development in both the developed and developing world. The availability of these services to people is one of the major ways of improving the quality of human resource (Liao et al., 2019), because it provides the economy with excellent trained human resource required for economic growth and development. In the debate of education's economics, the position of schooling and human capital in earning of respondents has been a major issue.

In the case of schooling, the empirical findings of our models both in simple and multiple pointed out that schooling has a positive and significant impact on the households' income. With the education, the people gain awareness of the market. They do wise decisions, and mostly in informal jobs. These findings are also supported by the findings of earlier studies. Our findings are consistent with Saqib et al. (2016), Peet et al. (2015), (Farooq, 2011) and (Afzal et al., 2011). They revealed that education has a positive association with income. In the same way, it was positively and significantly associated with the gross domestic product (GDP) at a macro level (Afzal et al., 2010; Khan et al., 1985; Liao et al., 2019).

The experience of individuals has an impact on their income. The empirical findings of our models determined that respondents' income is positively and significantly affected by their experience. Our

findings are consistent with Saqib et al. (2016). They revealed that education has a positive association with experience.

Skill is an essential factor in the respondents' income. In the case of skill, the findings of simple regression model are different from the findings of the multiple regression model. The findings of the simple regression model indicated that respondents' income have positive and significant relationship with their skills. However, the findings of multiple regression model showed that skill has an insignificant impact on the income of respondents. These findings are in accordance with the findings of earlier study conducted by Saqib et al. (2016). They have concluded that in a separate regression model, the skill had a significant impact on the respondents' earning and in another case of overall regression model, the skill of individuals had an insignificant impact on their earnings.

This study also evaluated the monthly expenditures of respondents. Households spent a greater part of their income on food expenses, education expenses, health expenses, cloth expenses, social activities expenses, and utility bills, etc. Furthermore, the upper-income group was on average spending more than the lower income group of people. This implies that, in the presence of income inequality, there is also expenditures inequality among the people. The primary hypothesis of our study is to test that Mincer function was applicable in the perspective of Swabi District, Khyber Pakhtunkhwa, Pakistan. Therefore, it is confirmed that respondents' income is strongly and positively affected by their education, experience, and skills. Secondly, another hypothesis was to find the monthly consumption pattern of the respondents. It is reported that there was a significant mean difference in expenditures between the upper-income and lower-income groups of people.

Study strengths and limitations

This study has proved that there are strong linkages of education, experience and earning on the earning/income of individuals. This the first attempt that has been conducted in the rural context of Swabi District. This study has further added that, in spite of higher learning and education, there was higher inequality in terms of households' expenditures. The study is conducted in rural settings where people have, usually, a lower level of education. Its findings may be different in urban areas. Moreover, this study is conducted in one of the districts in Khyber Pakhtunkhwa, Pakistan. Thus, its findings might not be generalizable to other parts of the country. The skill is measured thorough a binary variable. Hence, it may give different results if measured in actual form.

5. CONCLUSIONS

In this paper, it is empirically tested that schooling is the most important factor in respondents' income. With an additional year of schooling, the earning of individuals increases and plays an active role in the reduction of poverty. Similarly, experience and skills are also significant for the income of individuals who have a major role in the break of the vicious circle of poverty. The findings of our research suggest that the central government should make sure universal access to education. Local governments should arrange seminars and awareness programs about the importance of education. Pakistani media both print and electronic media including social media and welfare organizations such as NGOs also can play a significant role to aware people of the importance of education. Moreover, technical education is very important for skillful labor. The government should focus on the encouragement of technical education to provide skillful and quality labor to labor market.

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