

**EFFECTS OF POVERTY ON SCHOOL DROPOUT: A CASE
STUDY OF PESHAWAR**



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UNIVERSITY OF PESHAWAR
SESSION: 2022-2026**

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This thesis is submitted to the Department of Economics, University of Peshawar, in partial fulfillment of the requirements for the award of a BS degree

In
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Declaration

We declare that the thesis entitled “**Effects of Poverty on School Dropout: A Case Study of Peshawar**” is our original work. It has been completed under the supervision of **Dr. Fahim Nawaz** at the University of Peshawar.

We further declare that this thesis has not been submitted for any other degree at this university or at any other university.

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Abstract

This study analyzes the relationship between poverty and school dropout in Peshawar, Khyber Pakhtunkhwa. In Pakistan, 22.8 million children are out of school, and this ratio reach to 35% in the case of KPK. Therefore, the objective of this study is to find out the effects of poverty and poverty-related factors such as child labor, cost of education, parental income, and parental education on school dropout, and which poverty-related factor contributes more to the school dropout. The theoretical framework consists of human capital theory, social capital theory, the capability approach, and the ecological model. This study uses a cross-sectional design and a quantitative research approach. This study was conducted in Peshawar, and primary data were collected from 401 parents and teachers through a structured questionnaire in May 2026. The sample size is derived by using the TARO YAMANE formula and taking 5% margin of error. Each variable is measured on a five-point Likert scale in order to convert perception, attitude, and opinion into numerical form. The data is analyzed by using the SATA software. At first, there are descriptive statistics and reliability analysis. The value of Cronbach's alpha for every construct is greater than 0.80, which confirms the internal consistency of the data. Then, after identifying the problem of heteroscedasticity by using the Breusch-Pagan test, Robust regression was used to make the results reliable. The results show that the effect of poverty on school dropout is positive and statistically significant at 1% level, with a coefficient of 0.5317, which shows that if there is a one-unit increase in the poverty index, the dropout index will increase by 0.53 units. Apart from it, it is observed that the effect of child labor, cost of education, parental income, and parental education is positive but statistically insignificant. This shows that poverty is like an umbrella variable that captures the effect of all other factors. The R^2 of the model shows that the selected variables of the model explain 42.35 % variation in school dropout, while the probability shows that the overall model is statistically significant. On the basis of these results, this study recommends that the government should expand targeted poverty alleviation programs like conditional cash transfer and should also provide free education and subsidies, the government should also strictly implement the child labor laws, and should also expand the community-based awareness campaigns. In conclusion, it is said that in Peshawar, the main and fundamental cause of school dropout is poverty. Only by increasing awareness and improving school infrastructure

is it possible to reduce the dropout rate until poverty is targeted directly. If the government targets poverty directly, then it will lead to a significant decrease in the rate of school dropout. In this way, we can reach Sustainable Development Goal 4 and achieve the Quality Education for All goal.

Chapter-1

INTRODUCTION

1.1 Introduction

The Universal Declaration of Human Rights claimed that “everyone has the right to education”. It is the basic human right that provides knowledge, skills, and capabilities that are necessary to improve opportunities for employment and break the cycle of poverty. According to UNESCO (2022), poverty is still the major obstacle to education. In 2008, the World Bank data reported that about 1.29 billion people were in extreme poverty. Poverty refers to a state in which individuals lack the financial resources and essentials for a basic living standard. The World Bank defines poverty as living on less than \$2.15 per day. Poverty is multidimensional. It includes limited access to food, shelter, education, and healthcare. Due to poverty, a large number of children drop out before completing even the basic level of education.

School dropout is defined as “The phenomenon where students discontinue their education before completing their schooling for any reason other than death. It results in affecting the learning process, limits future opportunities, and also leads to transferring poverty from one generation to the next. According to the Global Education Monitoring Report 2024, an estimated 251 million children and youth around the world are currently out of school. One of the main causes for school dropout is long-term lack of investment in education, particularly in low-income countries. Another key obstacle in the way of quality education is the lack of funding. According to UNESCO-World Bank Education Finance (2004), 4 out of 10 countries allocate less than 15% of the public spending and less than 4% of GDP to education (UNESCO, 2024).

Globally, poverty is considered the leading cause of school dropout. UNICEF notice that globally, over 19% of children live in extreme poverty that lives on under US \$3 daily. This situation leads to limiting their ability to access basic services, including education (UNICEF, 2021). Children from poor families have fewer chances to enroll

in school, more chances to miss classes, and also include chances of quitting school, which leads to a poverty-dropout cycle globally.

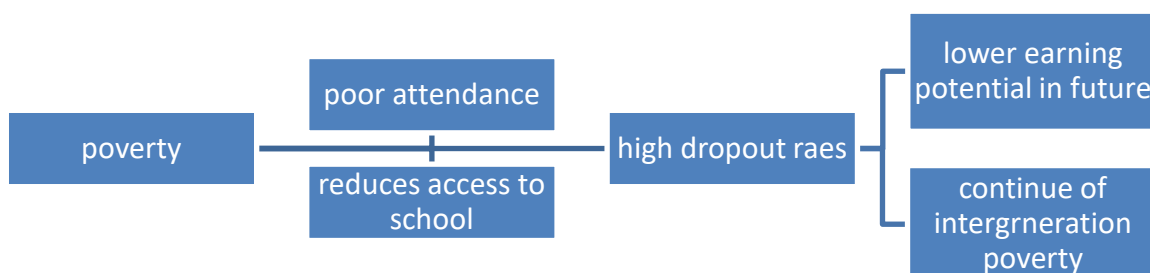


Figure 1.1

According to the UNESCO report, “By 2030, educational gaps and school dropout will cost the economy worldwide 10,000 billion annually”. This report shows that school dropout and the education gap have high economic consequences that affect the economy of the whole world. It is because when children do not complete school due to poverty, it not only affects their learning, but also they will earn less in the future, will become less productive, and will pass poverty to their next generation. UNESCO report shows that this economic loss is more than the combined annual GDP of major countries like France and Japan (UNESCO, 2023).

This global trend is also seen in Pakistan, where poverty rates and the number of out-of-school children are very high. According to UNICEF, Pakistan has an estimated 25.1 million children between the ages of 5 and 16 who are out of school, making up 35% of the population in the category of this age category. This made Pakistan a country that has the second-highest number of children who have dropped out. These challenges are because of less spending on education by Pakistan’s Government. In the past, Pakistan’s budget that has been allocated for education was about 1.5% of GDP, which is very low compared to the UNESCO and SDG-4 target of 4-6 %. This ratio of spending decreased with time, making the situation worse. According to the Pakistan Economic Survey 2024-25, the spending on education is only 0.8% of the total GDP, which is not enough for addressing the out-of-school children crisis (Education, n.d.).

Pakistan also made some policies and programs for the improvement of the education system, like the System Education Policy (1998-2010) and the Pakistan 2010 program to support the Education for All plan. The purpose of all these policies was that by 2010, 90% of boys and girls would complete their primary school education. But unfortunately, the government failed to achieve its desired goal of reducing school dropout rates. According to reported figures:

- Over 5.5 million children aged 5 to 9 are still out of school.
- In 2003-04, 40% of boys and 28% of girls who started school dropped out before entering middle and secondary levels.
- For rural areas, this ratio of drop out was comparatively higher. There 58% of boys and 66% of girls who dropped out before completing.

In Pakistan, the problems of poverty and education are deeply linked to each other. Poverty is the main reason behind the high ratio of school dropouts. The result of National Research on education poverty in Pakistan shows that approximately 26% of households in Pakistan are below the poverty line. This ratio is more in rural areas which is 33% as compared to the 12% in the urban areas of Pakistan compelling them to take their children out from school due to economic pressure and poverty (Nawaz & Iqbal, 2016) because they cannot afford their school expenses like books, uniform, transportation cost etc. which in turn leads to engaging their children in work to help their family instead of continuing education.

According to a UNICEF and UNESCO-supported national study, children from low-income families are more likely to be out of school (49.2%) than children from rich families (17.5%). This dropout ratio is higher in class 5 (42.8%), which shows that many children do not even reach middle school. Further, UNICEF says that this is the right time to help these out-of-school children; otherwise, they will grow up illiterate, will earn less in the future, and will remain in poverty. (Mahmood, K., 2022)

Similarly, KPK, the province of Pakistan, also faces higher rates of poverty and different educational barriers. According to the PSLM survey 2022-2023, KPK has high rates of poverty compared to other provinces of Pakistan, while the ASER 2022 report shows that KPK has 34.6% children who are out of school, which indicates

higher rates as compared to Punjab with 19.6% and Sindh with 25.3% drop out rates (Dr. Zafar Khan Safdar 2024).

Terrorism, calamities like floods and earthquakes, and other essential facilities, including water supply, electricity, and washrooms, are the major educational barriers to getting quality education. According to the Department of Elementary and Secondary Education, there are around 3856 educational institutions that have been damaged due to the environmental crisis. High poverty rates in the province worsen these barriers to education and create more difficulties in the way of getting an education. Poor families with low income cannot afford the expenses of education like school fees, uniforms, and textbooks, leading their children to drop out of school and engage in labor work to participate in their family income (Dr. Zafar Khan Safdar, 2024).

Multi-sectoral program funded by USAID, CIDA, DFID, ADS-AID, GIZ, and the European union all are some notable development projects in KPK for improving education. For the improvement of the KPK educational sector, DFID granted 203 million, which aimed to enhance the quality of girls' education, quantitative skills, and governance. For managing affairs of technical and vocational education, the KP government formed TEVTA as the main authority for developing a skilled labor force, but unfortunately, low capacity, limited resources, and weak training are some obstacles that are affecting the progress of this sector. Despite all such efforts by the KP government, “quality” and “access to education” are still a challenge. For the improvement, more resources, investment, and financing are required.

Peshawar, the capital of KPK, also deals with the serious issue of school dropout. The provincial education department reports that there are more than 500,000 children in Peshawar who are out of school, which shows a larger education gap (Geo News, 2025). In Peshawar, school dropout is associated with insufficient support for low-income families, economic crisis, and low academic motivation. Poverty is one of the major causes of school dropout in Peshawar. According to 2017 district-level estimations, the rate of poverty in Peshawar is 31%, which results in less economic resources for education and other basic needs.

In poor areas, educational achievements are very low compared to the wealthier ones. 45% of girls are out of school due to low income, other reasons for dropout are father and mother education, an uneducated community, and distance from the school (Zeb et al., 2021a). When there is an increase in dropout rates, income generation and employment opportunities for children in the future decrease, which leads to the transfer of poverty from one generation to the next. A study shows that poverty is closely linked with child labor. Low-income families take their children out of school and send them to work to earn for their family. In rural areas, around two-thirds of children are working in agriculture and manual work, while in city areas, three fifth are working in production-oriented tasks (Aneela Ejaz et al., 2024). Child labor, therefore, affects children's schooling and stops them from completing basic education.

Educated parents also play a crucial role in school enrollment and children's education. Families where parents are uneducated or less educated have more chances of poor educational performance and a high rate of out-of-school children. Whereas educated parents are well known about the advantages of investing in education, as it is the source of formation of human capital. Child marriages are also the biggest obstacle in the way of education, other than poverty, that leads to high rates of out-of-school children (Zeb et al., 2021a). Due to economic challenges, the high cost of living makes getting an education more expensive for poor and low-income households. When low-income families have the option to choose between food, rent, and schooling, education becomes a lower priority. Such economic pressure leads to higher dropout rates.

In spite of many obstacles, many parents from poor households still desire that their children become educated and believe that education can play a role in raising the future generation out of poverty. Without economic support and improved access, it is not possible. (Zeb et al., 2021b)

1.2 Problem Statement

Poverty remains the biggest and most notable socioeconomic issue facing by different households in Peshawar, Pakistan, that deeply affects children's participation and social development and compels families to prioritize survival over education.

According to Alif Ailaan's (2015) report, In Peshawar, children from low-income families are unable to attend school compared with 11% of children from richer families, which shows a deep link between the economic status of a family and children's school participation. In Peshawar, poverty not only affects initial school enrollment but also affects the continuation of education.

A survey in rural parts of Peshawar shows that 45% of household heads are reported as being unable to educate their children because of limited financial resources. It shows that children from lower-income families are more likely to leave school before completing to support their families or due to the higher costs of getting an education. Although there are some other factors, such as child marriages, fear of violence, and lack of infrastructure facilities, that lead to school dropout, research shows that poverty is frequently highlighted as a primary and fundamental cause of school dropout.

In spite of introducing many government programs that aim to improve access to education, persistent economic challenges are still the major obstacle to the completion of education for families in Peshawar. This problem not only affects individual potential but also a hindrance in the way of community development and continues intergenerational poverty. Therefore, it is necessary to understand the specific mechanism by which poverty leads to school dropout in Peshawar and to develop targeted policies and interventions that can keep children in school and improve educational outcomes across the region.

1.3 Research Questions

1. How does poverty affect school dropout in Peshawar?
2. What are the factors related to poverty that contribute most to the school dropout in Peshawar?

1.4 Research Objectives

1. To analyze the impact of poverty on school dropout in Peshawar.
2. To find out the major factors related to poverty that lead to school dropout in Peshawar.

1.5 Significance of the Study

This study is significant at the academic and policy levels. In Pakistan, particularly in Peshawar, the problem of poverty and school dropout is closely related, as many families live in poor economic conditions. Although several national and international level studies discussed poverty and education, limited research has focused particularly on how poverty affects school dropout in Peshawar. Therefore, this study fills an important gap by providing primary data and local-level evidence from Peshawar.

At the academic level, this study contributes to existing literature by clearly showing the relation between school dropout and poverty in the content of Peshawar. Most of the previous studies only focus on either rural areas or provide generalized national data. At the policy level, the findings of this research study can help policymakers to understand the basic economic reasons for school dropout. When the reasons for school dropout are clearly identified, then the targeted policies and interventions will be designed more effectively.

1.6 Organization of the Study

This research study is organized into five chapters. Chapter 1 discusses the introduction, Chapter 2 presents a review of literature, Chapter 3 explains research methodology, Chapter 4 presents the results, and at the and Chapter 5 draws the conclusion and recommendations based on the results of the study.

Chapter-2

LITERATURE REVIEW

2.1 Introduction:

Education is known as the basic factor of economic and social growth (Hanushek & Woessmann, 2008), but there is disparity among various socioeconomic sectors in persistence and access to education (UNESCO, 2020). Poverty is one of the most powerful factors that affects attendance and completion among various obstacles to education (World Bank, 2018). Although the world has been making more efforts in enrolling more students, school dropout still remains a problem, especially in developing countries, where economic problems affect families in terms of direct and opportunity costs and household basic needs (UNICEF, 2021).

The connection between poverty and school dropout is not direct but follows multiple interrelated mechanisms, such as inability to afford educational expenses like school fees, books, and uniforms (Filmer & Pritchett, 2001). Other interrelated factors are the need to work as children (child labor) and lower expectations from economic benefits of education (Jensen, 2010). These conditions are particularly high in underdeveloped nations like Pakistan, where societal imbalances and territorial disparities further worsen the problem (Sathar et al., 2013).

This chapter presents a critical analysis of the existing literature to understand the relation between poverty and school dropout, and its effects on each other. It also presents a picture that gradually moves from global views to national and regional views and finally to Peshawar.

2.2 Theoretical Literature:

2.2.1 Poverty and Human Capital Theory

According to human capital theory, education is a form of investment that increases skills, productivity, and earnings of people. Schultz (1961) explains that educational spending, training, and health lead to the creation of human capital, which is the major factor of economic growth. But this theory is based on the assumptions

that individuals and households have the ability and can invest in education. These assumptions fail in the case of poverty. Because a lack of money to invest in education is common among poor households. Consequently, despite the long-term benefits of education, families might not be in a position to afford the short-term expenses (Schultz, 1961).

Poverty reduces the formation of human capital because it reduces access to education. Children have high chances to drop out of school when their families are unable to afford school fees or when they depend on the earnings of their children to meet their basic needs of life. This results in poorer education and skill levels that further limit the earning potential of people in the future and continue the cycle of poverty.

Therefore, while human capital theory explains the significance of education as an investment, it can also indirectly describe the role of poverty in preventing this investment and leading to school dropout.

2.2.2 Social Capital Theory

According to social capital theory, In education, the success of a child is not just dependent on income but also on the quality and nature of the relationships, support system, and social networks around them. Children from poor families may tend to grow up in a setting where parents are poorly educated, have poor relationships with schools, and have minimal interaction with teachers. This means that such children are less academically guided, encouraged, and monitored than those from more well-off families.

Poverty reduces social capital because it limits the ability of parents to engage in school activities, interact with teachers, or support learning at home. When families are weak economically, their focus goes towards fulfilling the basic needs of life rather than enrolling their children in school. This absence of social support increases the chances of children losing interest in school and ultimately dropping out. Studies show that positive interaction between parents and school, as well as communities, increases students' enrollment, whereas poor social connections lead to dropout (Coleman, 1988). In the context of Pakistan, and especially in low-income regions of

Peshawar, the lack of engagement of parents and low school community connections further increases the chances of dropout in children from poor families.

2.2.3 Capability Approach

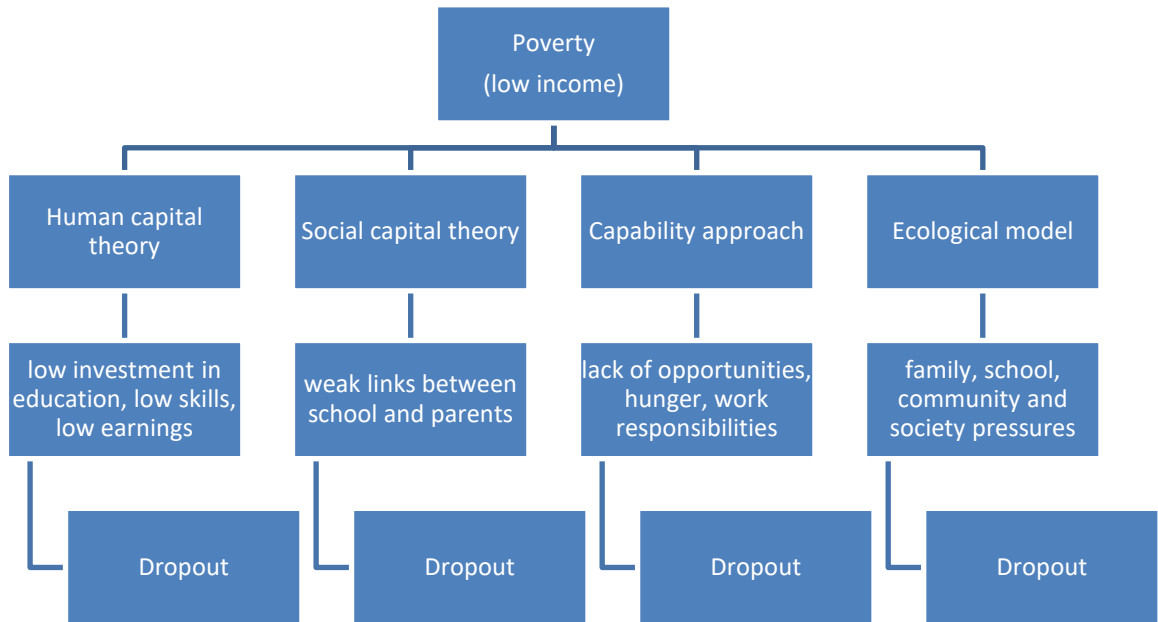
The capability approach describes that poverty is not just about lack of income but about deprivation of real opportunities and choices. Even where schools exist, poor children may not have the ability to take advantage of the schools available to them because of hunger, ill health, or the need to be employed.

This theory in the school dropout context explains that it is not sufficient to be enrolled. Children should have the ability to attend school regularly, learn effectively, and pursue their education. These abilities are restricted by poverty, which reduces access to the basic needs of life and a supportive environment. Peshawar has a large number of children who are attending school but still drop out because they do not have the freedom to attend school due to financial burden, family responsibilities, or poor living conditions (Sen, 2001).

2.2.4 Ecological Model

According to the ecological model, the education of children is determined by various levels of environment, such as school, family, community, and society. All these levels of environment are influenced at the same time by poverty, making school dropout a result of the combined and interactive pressures, not because of a single factor.

On the family level, poverty causes child labor and financial stress. On the school level, poor children usually study in underfunded schools. On the community level, they live in areas where education is not a priority, opportunities are further restricted by inequality, and weak policies at the societal level. In the context of Peshawar, this theory describes how poverty works in various environments where children are compelled to drop out. For example, a child is compelled to work at home, study in a school that has inadequate facilities, and live in a society where education is not a priority; all of these increase the chances of school dropout (Guy-Evans, O., 2020).



Source: conceptualization of Author's based on Schultz(1961); Coleman(1988); (Sen, 2001); (Guy-Evans(2020).

Figure 2.1: Conceptual framework linking poverty to dropout

2.3 Empirical literature

2.3.1 Global perspective of poverty and school dropout

Globally, poverty is considered a key factor in school dropout. Research shows that children from low-income families have high chances of dropping out of school because of financial limitations and other economic needs (UNESCO, 2015). Studies show that poverty influences school dropout in multiple ways. Firstly, the lack of ability to afford direct expenses like fees, books, and uniforms discouraged continued attendance (Basu, K., & Van, P. H., 1998).

Secondly, poor households are further burdened by indirect costs such as transportation and opportunity costs. Third, economic vulnerability also increases the chances of children engaging in work (child labor) and spending less time at school (Basu, K., & Van, P. H. 1998). Worldwide indications show that poverty does not act independently, but it combines with other societal variables like location, gender, and household size that also increase the chances of school dropout.

2.3.2 Poverty and Education in Pakistan

In Pakistan, there is a strong relationship between poverty and school dropout because of structural inequalities and a lack of government investment in education. At the national level, studies show that children in the lowest quintile have very few chances to attend primary education than the children in the richest quintile (Pakistan Bureau of Statistics, 2021). Research points out that poverty affects education in terms of household decision-making. This is because families compare the expenses of schooling with the present economic demands, which leads to the dropping out of children from school (Sathar & Lloyd, 1994). Such a decision is also affected by the views that education does not ensure stable jobs, particularly in economically marginalized societies. In addition, the problem is further worsened by regional inequalities in Pakistan. The rural and less developed areas have high dropout rates because of a lack of accessibility to school, a lack of proper infrastructure, and lower household incomes.

2.3.3 Poverty and school dropout in Khyber Pakhtunkhwa

In Khyber Pakhtunkhwa, the socioeconomic factors and historical underdevelopment result in higher rates of dropout. Research shows that KP is closely connected with the lack of education, especially in marginalized societies (Khan et al, 2017). The region is facing different challenges, such as a lack of educational infrastructure, security risks, and cultural issues, and when it is combined with poverty, it leads to higher rates of dropout. The chances of continuing education diminish as they are expected to contribute to their family income. In addition, in some areas of KP, families are also not willing to invest in education because of the perceived low returns from education, which further leads to reinforcing the cycle of poverty and school exclusion.

2.3.4 Poverty and school dropout in Peshawar

In the local context, Peshawar presents a complicated situation where migration, urban poverty, and economic insecurity are the main factors that causes dropping out of children from school. According to the existing literature, In Peshawar, low-income families face serious challenges in continuing the education of

their children because of the increase in the cost of living and lack of jobs (Ali & Shah, 2018). Children of poor families are mostly raised in the informal sector of labor, i.e., street Vending and small-scale services, which directly affect school attendance. Also, the cost of education, even in public school, remains a barrier because of the associated expenses such as books, uniforms, and transportation. Poverty and urban pressures interact in such a way that causes the situation where education becomes a second priority, which leads to higher rates of dropout.

2.3.5 Poverty factors that contribute to school dropout

A) Poverty

Poverty is the main cause of school dropout. When families are poor and do not have sufficient resources, then their focus is only to meet basic needs such as food, clothing, shelter, and health, due to which survival becomes more important than education. Children from poor households lack educational facilities, such as poor health, less motivation, and a lack of school supplies, which result in irregular attendance and gradually lead to school dropout. Research suggests that in rural and developing areas, the key factors of school dropout are poverty and socioeconomic marginalization. Poverty is also recognized as an important reason for dropout in Pakistan, particularly in Peshawar, where a lot of families are unable to bear the cost of education (Zeb et al., 2021a).

B) Child labor

Child labor becomes one of the most immediate ways in which poverty contributes to school dropout. People from poor families often rely on the income of their children for survival, which makes schooling for children less likely (Basu, 2003). Empirical research indicates that poor children involved in child labor have high chances of school dropout because of time limitations, fatigue, and poor performance in school. In the context of the Peshawar informal labor market, offering direct access to income leads to taking children out of school.

C) Cost of Education

Although education is officially free, in reality, there are hidden costs that create barriers to education for poor families. Uniform, books, examination and transportation expenses can be high as compared to the household income (Hunt, 2008). Research shows that these expenses affect low-income households disproportionately, resulting in irregular attendance and eventual dropout. These economic pressures are the primary causes of school dropout in Peshawar.

D) Parental Income

The income of parents directly influences the education of their children. Low-income households lack the ability to afford the cost of education, and to support their family income, they often involve their children in child labor, which leads to an increase in the chances of children dropping out of school at an early age. Studies indicate that low income of families increases the chances of children leaving school, while higher income households support children to continue their education in a better way (Maina et al., 2021).

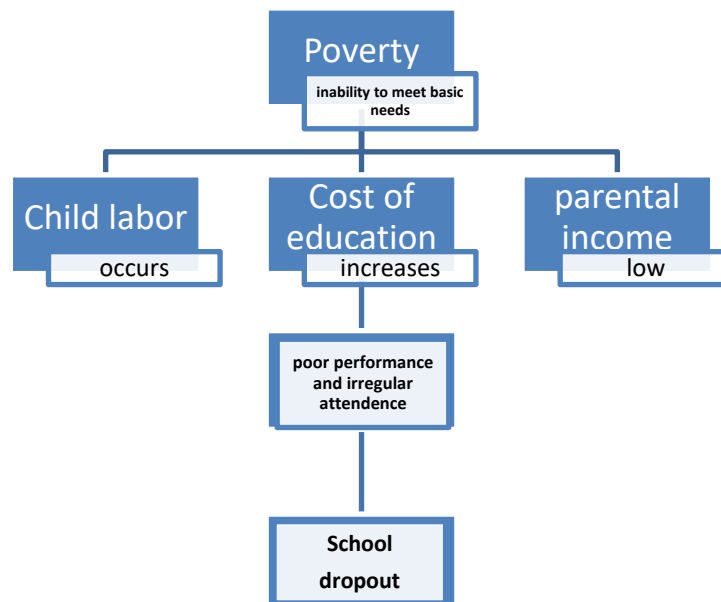


Figure 2.2: Pathway of poverty-related dropout

2.4 Summary of literature and Research gap:

The review of literature indicates that poverty is the key determinant of school dropout that affects school enrollment in different interdependent ways, such as Poverty, child labor, cost of education, and parental income. Although global and national research provides a lot of evidence on such relationships, but they take poverty as a general factor without understanding local levels of these relationships. In the context of Pakistan and especially Khyber Pakhtunkhwa, the existing literature emphasizes the role of socio-economic factors but does not provide a more detailed analysis at the city level. Research on Peshawar is still limited, especially in understanding how different factors related to poverty interact and which of these variables has the greatest impact on school dropout. Moreover, there exists a gap in the literature on the comparative effect of certain variables related to poverty, that is, child labor versus educational expenditure in urban areas such as Peshawar. The Majority of research studies these factors separately and do not focus on their combined and relative effects. Therefore, this study will fill this gap by providing a case study on the effects of poverty on school dropout in Peshawar and identifying the most important contributing factors between poverty, child labor, cost of education, and parental income. This factor-based and localized method will help to develop a more detailed picture of the problem and promote more specific policy changes

Chapter-3

THEORETICAL BACKGROUND AND ECONOMETRIC METHODOLOGY

3.1 Research Design

To analyze the effects of poverty on school dropout, this study uses a quantitative research approach. This approach is suitable because through this approach we can measure the relation between different variables such as poverty, child labour, cost of education, parental income and parental education in quantitative form by using numerical data.

The nature of this study is cross-sectional, as data is collected from different people at one point in time, and does not measure the changes with respect to time. The purpose of this method is to find out the current situation of school dropout and how it is affected by different poverty-related factors such as child labour, cost of education, parental income and parental education. Another reason for using cross-sectional data is the limited time and resources. Therefore, this data is collected in less time and with fewer resources.

This study is also descriptive and explanatory because it describes the current situation of school dropout in Peshawar and explains how school dropout is affected by poverty and poverty-related factors.

This study also answers the research questions, i.e., how poverty affects school dropout in Peshawar and which factors contribute most to school dropout.

3.2 Data Collection

This study uses primary data, which is collected directly from people through a structured questionnaire. Primary data is first-hand, more accurate and relevant data which gives the local level information about a situation directly from people and which is necessary to fill the gap discussed in chapter 2.

The use of a questionnaire is beneficial because it gives structured answers and collects data easily from a large number of people. In the questionnaire, all questions are measured on a five-point Likert scale, except the questions related to socio-demographic variables, and the data collected through the questionnaire are from parents and teachers.

3.3 Data and Data Source

This study uses primary data, which is collected directly from parents and teachers. The source of data used in this study is a questionnaire which collects information from parents and teachers directly, making it a reliable and primary source of data. All questions related to dependent and independent variables are measured on a five-point Likert scale, which allows the respondents to choose options from strongly disagree to strongly agree. The use of a five-point Likert scale is because it measures the perception, attitude and opinions of people in an easy way. This scale also makes it easy to convert the collected data into numerical form for analysis.

This questionnaire includes three categories. The first category includes socio-demographic variables (age, gender, income and education). The second category includes the dependent variable (school dropout) and the third category includes the independent variables (poverty, child labour, cost of education, parental income and parental education).

The survey was conducted in the month of May 2026, and the area of study is Peshawar. Peshawar is because it has a high number of cases related to school dropout and also has a high number of issues related to poverty i.e have high number of families affected by poverty. The advantage of choosing Peshawar for the survey is that it helps in studying the local factors that affect school dropout and education.

3.4 Sample size

In this study, the size of the sample is determined by using Taro Yamane's formula. It helps in calculating the appropriate size of the sample, which is

representative of the population, based on the total population and the margin of error (5%).

Taro Yamane Formula:

$$n = \frac{N}{1 + Ne^2}$$

Where

n = size of sample

N = total number of population = 4,758,762

e = margin of error = 5% = 0.05

Putting values

$$n = \frac{4,758,762}{1 + 4,758,762(0.05)^2}$$

$$n = 400.02$$

So the calculated sample size is approximately 400.

3.5 Justification of the target population

This study targeted parents and teachers for the survey because they know more about school dropout and the education of children, and also have experience with it. Parents make decisions about the education of children, and they also know about family conditions and income, while their school performance and attendance are observed by teachers. Therefore, by collecting data from both parents and teachers provide more relevant and reliable information about the effects of poverty and poverty-related factors on school dropout in achieving the objectives of this study.

3.6 Econometric Model

A linear regression model is used in this study to understand the relation between poverty and school dropout. A five-point Likert scale measures the

dependent variable (school dropout), which helps to treat it as a quantitative variable during analysis. The linear regression model helps in understanding how school dropout is affected by poverty, child labour, cost of education, parental income and parental education. The linear regression model is simple, easy to understand, and its interpretation is also easy.

3.6.1 Linear Regression Model

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + e_i$$

Where,

Y_i = dependent variable, which is school dropout.

$X_{1i} \dots X_{5i}$ = independent variables

β_0 = intercept

$\beta_1 \dots \beta_5$ = coefficients, which shows the change in the dependent variable when the independent variable is increased by 1 unit.

X_{1i} = poverty

X_{2i} = child labour

X_{3i} = cost of education

X_{4i} = parental income

X_{5i} = parental education

i = shows cross-sectional data

e_i = error term

3.7 Analytical technique

In this study, a STATA software is used for data analysis because it is the most reliable tool for quantitative data in the social sciences. The analysis start from

descriptive statistics, in which the mean and standard deviation of all variables will be found to capture the overall picture of the data and the trend of respondents. After that will use Cronbach's alpha test for checking the reliability of the questionnaire in order to confirm the internal consistency of the scale. In order to find the real relation between variables, a linear multiple regression model will be used, and if a heteroscedasticity problem arises, then robust regression will be used to correct the standard errors and make the results reliable. At last, there will be the interpretation of coefficients, t-values, p-value, R-squared and f-statistics to find out which factor is statistically significant and also for finding the fitness of the model.

3.8 Theoretical framework and variables

3.8.1 Theoretical framework

The following are the theories on which this study is based.

a) Human capital theory

According to this theory, education is an investment that increases future income and skills of people, but in the case of low-income households, they cannot afford to invest in education, which results in school dropout.

b) Social capital theory

According to this theory, the support of the family, the education of parents, and the social environment affect children's education. These supports are not in poor households, which leads to an increase in the chances of school dropout.

c) Capability approach

According to the capability approach, the real opportunities for children are limited by poverty. Even if schools are available, children are unable to attend because of financial problems and responsibilities.

d) Ecological model

According to this model, school dropout is not due to only one factor but due to multiple factors, i.e. poor family, the environment of the school and the conditions of the community.

These theories show that education is affected by multiple factors such as income, real opportunities and environment.

It also justifies the selection of variables. i.e.

POVERTY ➡ decreases the ability of people to afford education.

CHILD LABOR ➡ increases dropout by replacing schooling.

COST OF EDUCATION ➡ increase financial stress.

PARENTAL INCOME ➡ influence decision making process.

3.8.2 Variables

This section discusses those variables which are used in the study. Such variables are divided into three categories: socio-demographic variables, dependent variables, and independent variables. This section also tells about the relation of each variable with the dependent variable and takes the definition of each variable from the existing literature.

3.8.2.1 Socio Demographic Variables

a) Age

UNESCO define age as the chronological age of children, which is measured in terms of years, and which affects the progress and participation of children in education (UNESCO, 2019).

There is a deep relation between age and school dropout because the older children of low-income families are more likely to be involved in labour work or in household responsibilities, which leads them to leave school. Naz et al. (2019) found that in rural

areas of Pakistan, with the increase in age of children, the dropout rate also increases (Naz et al, 2019).

b) Gender

According to the World Health Organization, gender is the behavior, characteristics and roles constructed by society that are linked with males and females (World Health Organization, 2022). The differences in gender strongly affect the school enrolment and continuation. Girls are more likely to withdraw from school due to poverty, domestic responsibilities, cultural barriers and early marriages. According to Satti and Jamil (2021), in Pakistan, girls are more exposed to educational disadvantages than boys and have more chances to leave school.

c) Education

Oxford Dictionary of Education define education as the process of giving and getting systematic instructions, particularly in school, college or university (Wallace, 2015).

The education of parents significantly affects the continuation and enrolment of their children in school. Educated parents are more aware of the importance of education and also give more academic support to their children. Satti and Jamil (2021) found in their study that parental education plays a key role in declining dropout rates (Satti and Jamil, 2021).

d) Income

The World Bank defines income as the earning getting by individuals are households from wages, salaries, investment or business (World Bank, 2022b).

Family income determines whether a household is able to bear educational expenses or not. Low-income households are mostly unable to provide resources to their children related to school, which in turn leads to an increase in the chances of dropping out. Malik (2013) found that poverty and low income of a household inversely affect the school participation of children (Malik, 2013).

3.8.2.2 Dependent variable

a. School dropout

National Centre for Education Statistics defines school dropout as children who dropout from school, are those who leave the school without finishing the prescribe level of education, and also do not enroll further. In this study, school dropout of children is the dependent variable. Because it is affected by socio-economic and demographic conditions like poverty, child labour, cost of education, etc. (Necs, 2021).

3.8.2.3 Independent variables

a. Poverty

The World Bank define poverty in terms of lack of well-being. This includes low income and lack of ability to fulfil the basic needs of life, such as shelter, health, education, etc. (World Bank, 2022a). Poverty is one of the main causes of school dropout. Because low-income households give more priority to survival and the generation of income or education. Toor (2023) clear that poverty plays a significant role in low literacy and school dropout in Pakistan (Toor, I. A, 2023). Naaz et al. (2019) also identify poverty as the major reason for school dropout in rural areas (Naaz et al, 2019).

b. Child labour

International level organizations define child labour in terms of work that deprives children of their child potential and dignity that become a big hurdle in the way of completing their education (International Labour Organization, 2021). Those children who are enrolled in child labour at an early age, they are more likely not to continue their education. Because the responsibilities of their work reduce school attendance and academic performance. Amedu and ossai (2023) identify that child labor significantly increase the rate of school dropout among primary school children (Amedu & Ossai, 2023).

c. Cost of education

UNESCO define cost of education as the cost of education, which includes all direct and indirect educational costs, like school fees, uniform, transportation, cost of examination and cost of books(UNESCO, 2020). The higher cost of education affects low-income families financially, which makes it harder for their children to complete and continue their education. According to Naz et al. (2019), the cost of education is the main factor of school dropout in rural Pakistan (Naaz et al, 2019).

d. Parental income

According to Becker (1991), parental income is the economic resource that is available to invest in the education and development of their children (Becker, 1991). Families with higher incomes can afford educational costs, which play a key role in reducing the rate of school dropout. Satti and Jamil (2021) identify that higher parental income reduces the probability of their children leaving school (Satti and Jamil, 2021).

e. Parental education

Parental education means the highest level of formal education completed by parents. Educated parents usually encourage school enrolment and attendance. They also offer academic guidance to their children, which also reduces the school dropout rate. Parker et al. (2005) suggest that parental education positively affects educational attainment and continuation of school for their children (Parker et al, 2005).

Chapter-4

RESULT AND INTERPRETATION

4.1 Introduction

The purpose of this chapter is to present the results of using STATA software for analysis. The structure of this chapter presents first the descriptive statistics and demographic analysis. After that, it presents reliability analysis, regression analysis, and diagnostic tests for checking the four assumptions of OLS. At the end, it discusses the robust regression model.

4.2 Descriptive statistics of variables

This section studies the descriptive statistics of data by using the summarize command. The purpose of this is to understand the range and spread of variables in the data set, and also the dispersion and central tendency of responses. Each variable has 401 observations, which shows a suitable sample size for analysis.

Table 4.1 presents observations, means, standard deviation, minimum, and maximum for each variable. Mean tells about the average value of data, and standard deviation shows its spread. Minimum and maximum values tell about the limitations of the data set.

Table 4.1: Summary Statistics of Variables

variable	Obs	Mean	Std. dev.	Min	Max
Age	401	1.491272	0.869223	1	5
gender	401	1.553616	0.5027357	1	5
education	401	3.783042	0.5918714	1	5
income	401	2.9251877	1.276475	1	5
povmain	401	3.902743	1.06443	1	5
povlowinc	401	3.962594	1.054086	1	5
finwithdraw	401	3.977556	0.9444549	1	5
dropoor	401	3.977556	0.9782612	1	5

econhard	401	3.987531	0.8557711	1	5
povattend	401	3.743142	1.039884	1	5
povaccess	401	3.942643	0.8451047	1	5
povmajor	401	3.872818	0.9701981	1	5
povcont	401	4.119701	0.8340479	1	5
finwork	401	4.129676	0.7862202	1	5
clabmajor	401	3.94015	0.9805146	1	5
workleave	401	3.950125	0.9578655	1	5
parearn	401	3.708229	0.9960708	1	5
worktime	401	4.129676	0.8050728	1	5
clabperf	401	4.077307	0.9063087	1	5
feedisk	401	4.129676	0.9344208	1	5
costtrans	401	3.98005	0.8997783	1	5
costbooks	401	4.119701	0.8127951	1	5
eduexp	401	4.244389	0.8888896	1	5
feeinc	401	4.087282	0.9054628	1	5
inlow	401	4.0798	0.7991345	1	5
inchigh	401	4.067332	0.9528668	1	5
inedu	401	3.912718	0.8774183	1	5
incirreg	401	3.930175	0.8718441	1	5
incstable	401	4.209476	0.7912079	1	5
pedusupport	401	4.291771	0.8614854	1	5
pedulack	401	3.693267	1.013992	1	5
peduimp	401	4.206983	0.921711	1	5
peduguide	401	4.029925	0.8655069	1	5
peduware	401	4.007482	0.8845586	1	5

4.2.1 Interpretation

4.2.1.1 Demographic variable

a) Age

The mean value of age is near 2, which means mostly people belongs to the group of young and middle-age. The value of the standard deviation is lower, which means there is less variation in the age of people.

b) Gender

The mean value of gender lies between 1 and 2, which means both male and female are present in the sample size, and their ratio is almost the same. Standard deviation and the variation are also lower.

c) Education

The mean value of education is near 4, which means the education level of most people is secondary or higher. The value of standard deviation is less which means there is less variation in the level of education of people.

d) Income

The mean value of income is near 3, which means mostly the income of people lies between 41,000 and 50,000. While the value of standard deviation is greater than 1.2, which means there is less variation in the income of people.

4.2.1.2 Dependent variable

a) School dropout

Povmain to econhard are the questions that measure how important people consider school dropout. The mean value of all these questions is close to 4, which means that mostly people agree that poverty, low income of people, financial problems, and economic hardships compel low-income families to withdraw their children from school. The moderate value of the standard deviation shows that there is disagreement among people.

4.2.1.3 Independent variables

a) Poverty

Povattend to finwork are the questions that measures how poverty affects the education level of children. The mean value of all these questions is near 4, which means that people agree that poverty affects school

attendance and access to school for children which interns continue the cycle of poverty.

b) Child labor

Clabmajor to clabperf are the questions that measure how child labor affects school dropout. The mean value of all these questions is close to 4, which means people agree that child labor is the major cause of school dropout. Those children who are engaged in child labor have less time for studies, which badly affects academic performance. Some people also believed that low-income families depend on the earnings of their children for survival.

C) Cost of education

Feedisc to feeinc are the questions that measures is cost of education is a hurdle in the way of education for low-income families or not. The mean value of all these questions is greater than 4, which means that people strongly agree that the cost of education, such as school fees, transportation costs, books, and uniform costs, and an increase in the fees keeps the children away from school.

d) Parental income

Inclow to incstable are the questions that measure how parental income affects school dropout and the education of children. The mean value of all these questions is near 4, which means that low, irregular, and unstable income of the family or parents negatively affects the education of children. While the family with a stable income is more able to continue the education of their children.

e) Parental education

Pedusupport to peduaware are the questions that measure how parental education affects the education of children. The mean value of all these questions is close to 4, which means people agree that educated parents support the education of children, provide guidance to their children and also understand the importance of children's education. While the children who have uneducated parents usually face difficulty in their studies which increases the chances of dropout also.

In short, the answers of Likert scale questions lie between agree and strongly agree. Which means people mostly shows agreement with these issues. The moderate standard deviation shows that there is less disagreement among people's opinions.

Table 4.2: Descriptive statistics of study constructs

construct	Mean	Standard deviation	N
Dropout	3.97	0.92	401
Poverty	3.97	0.90	401
Child labor	3.97	0.96	401
Cost of education	4.11	0.89	401
Parental income	4.03	0.83	401
Parental education	4.01	0.89	401

The means and standard deviation are calculated by taking the average of items. The mean value of all constructs lies between 3.97 and 4.11, which means that all respondents agree that poverty, child labor, cost of education, parental income, and parental education affect the school dropout of children. The value of standard deviation is between 0.83 and 0.96, which indicates that all responses are consistent and are not scattered.

4.3 Demographic Analysis

4.3.1 Age Distribution

Table 4.3: Frequency Distribution of Age

age	Freq.	percent	Cum.
1	284	70.82	70.82
2	58	14.46	85.29
3	38	9.48	94.76

4	21	5.24	100.0
Total	401	100.00	

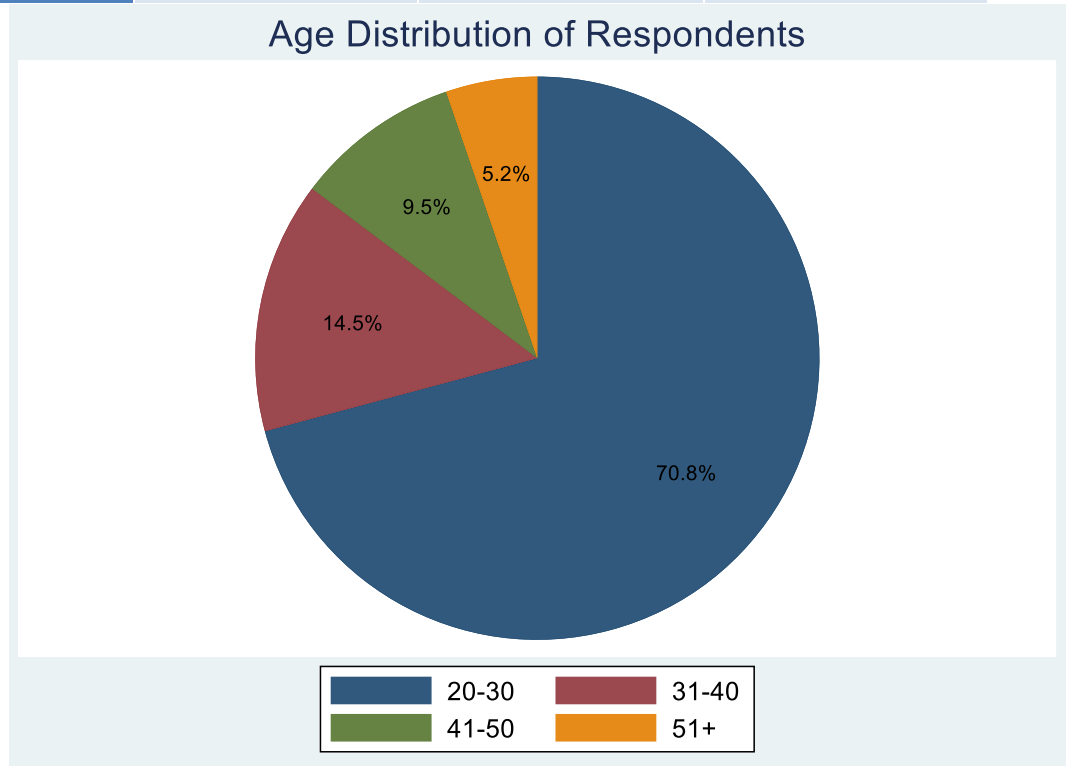


Figure 4.1: Pie Chart of Age Distribution

Interpretation

The data shows that mostly respondents belong to the group 20 to 30 years. The dominance of this age group is clear while the share of other age groups is less. This data shows that there are more young people in the sample size.

4.3.2 Gender Distribution

Table 4.4: Frequency Distribution of Gender

gender	Freq.	Percent	Cum.
1	180	44.89	44.89
2	220	54.86	99.75
3	1	0.25	100.00

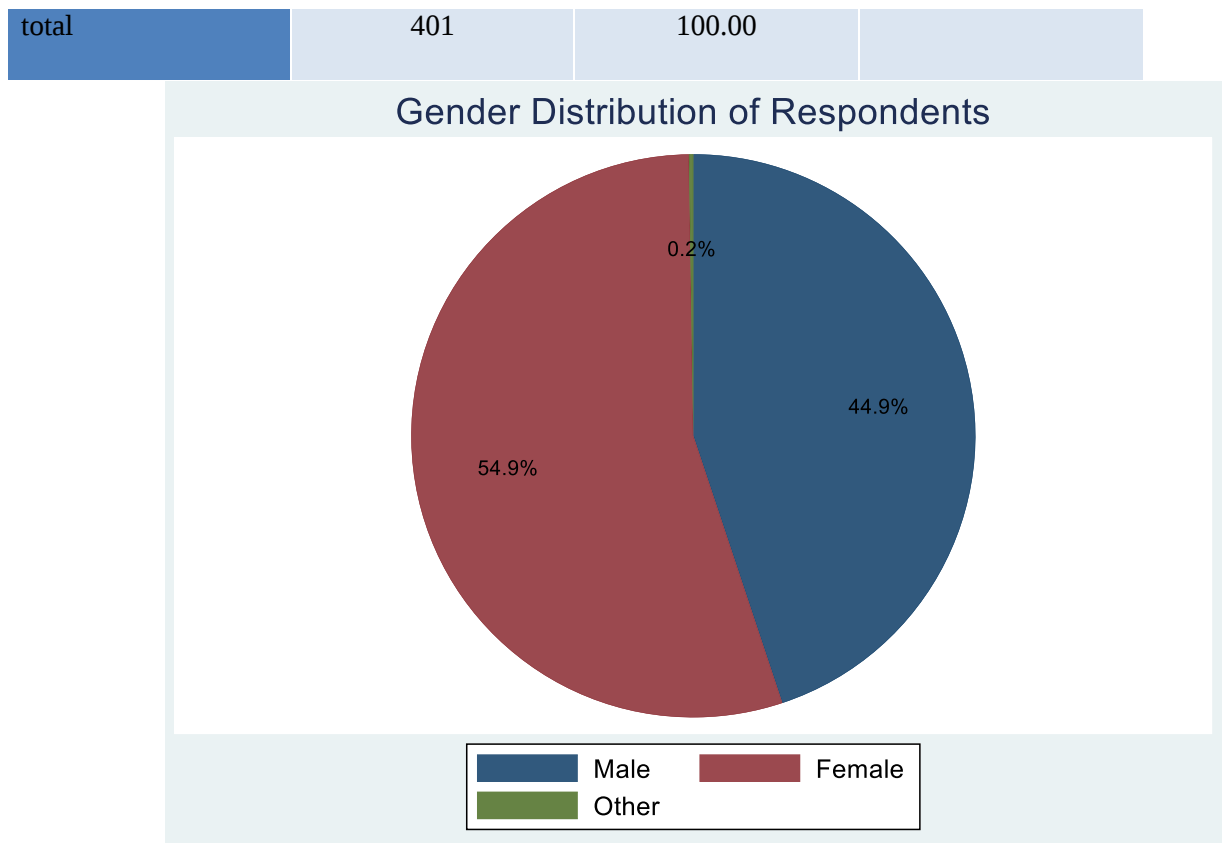


Figure 4.2: Pie Chart of Gender Distribution

Interpretation

The data on gender shows that there are more females in the sample size than males. The representation of both genders is good. While the part of the other gender is almost negligible. That's why we can say that the balance of gender in the data set is maintained.

4.3.3 Level of Education

Table 4.5: Frequency Distribution of Level Of Education

education	Freq.	percent	Cum.
1	9	2.24	2.24
2	9	2.24	4.49
3	42	10.47	14.96
4	341	85.04	100.00

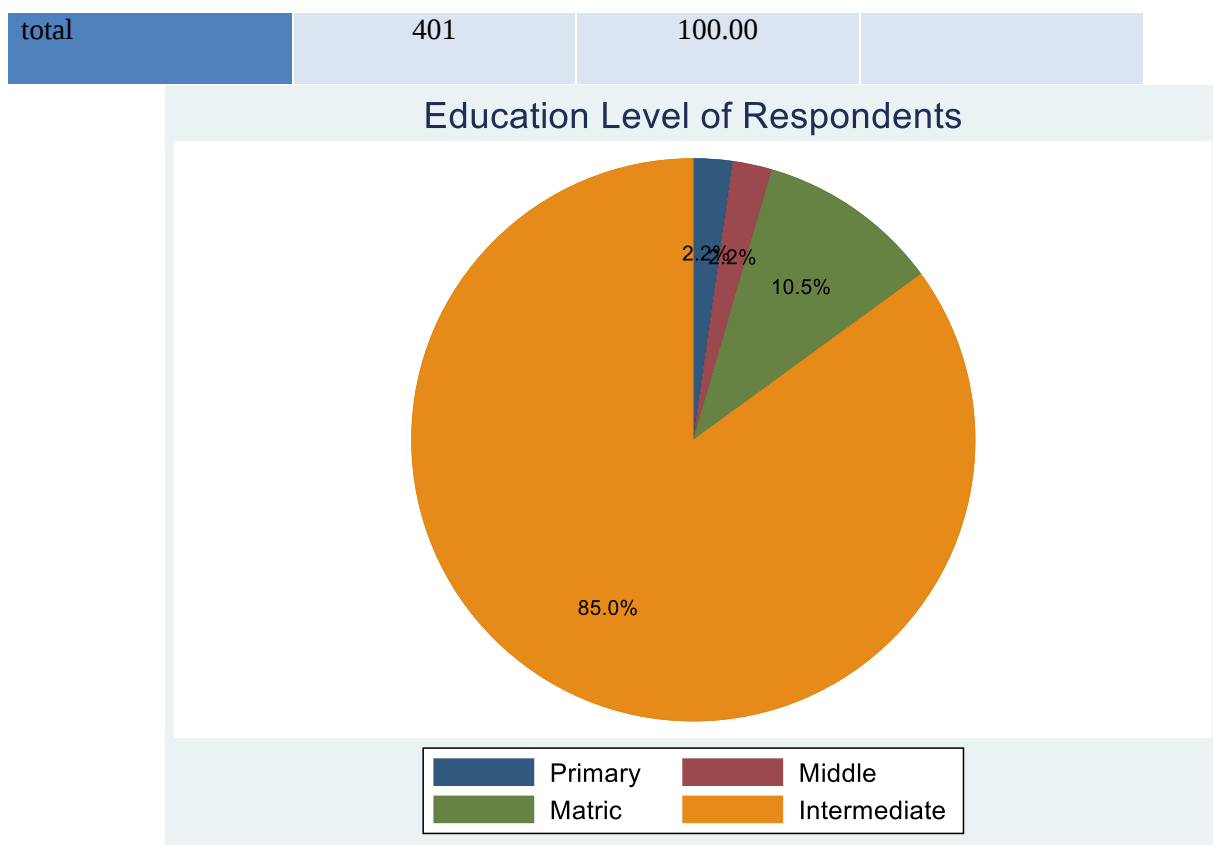


Figure 4.3 Pie Chart Of Education Distribution

Interpretation

The data shows that the education level of most respondents is higher and secondary. While the share of primary and no formal education is almost negligible. It shows that the number of educated people is high in the sample size.

4.3.4 Level of Income

Table 4.6: Frequency Distribution of Level of Income

income	Freq.	Percent	Cum.
1	101	25.19	25.19
2	39	9.73	34.91
3	50	12.47	47.38
4	211	52.62	100.00

Total	401	100.00	
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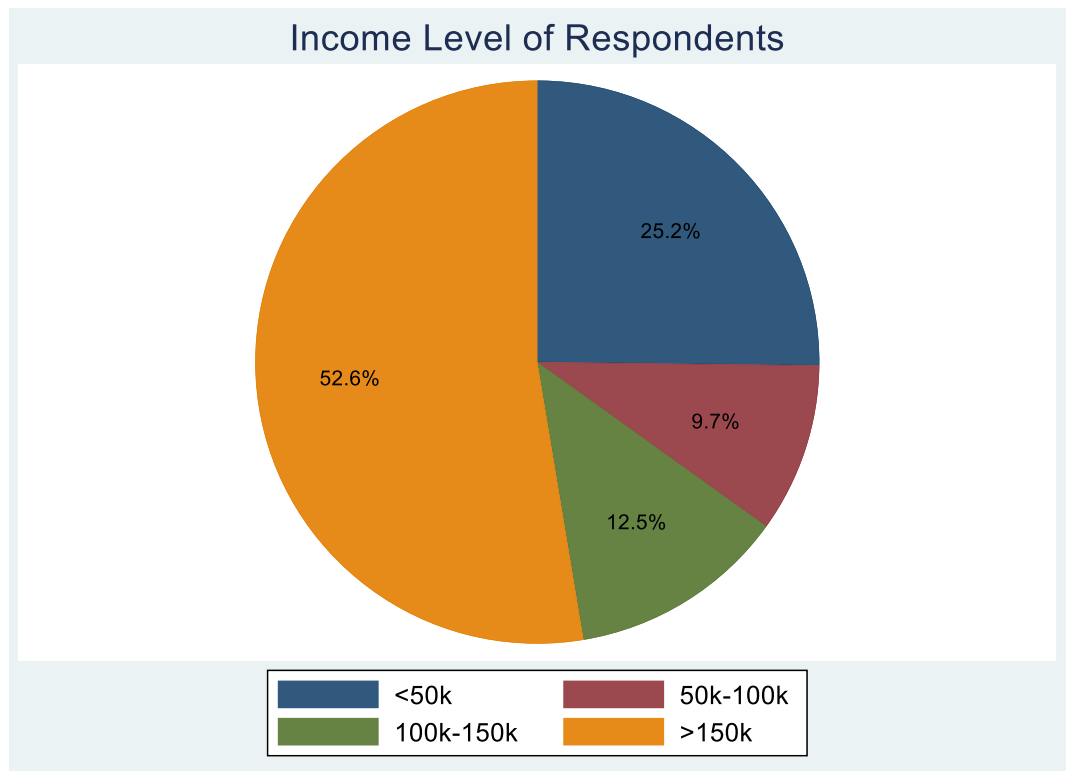


Figure 4.4 Pie Chart Of Income Distribution

Interpretation

The data shows that the dominance of people who belong to the middle-income groups is less in the sample.

4.4 Reliability Analysis

The purpose of the reliability test is to check whether the Likert scale items are internally consistent or not. That is, either all these questions measure the same construct correctly or not. The scale is considered a reliable one if the Cronbach's alpha value is high.

Rule:

Alpha > 0.7 = acceptable

Alpha > 0.8 = good.

Table 4.7 Reliability Statistics – Cronbach's Alpha

Construct	No. of item	Average inter item covariance	Cronbach's alpha	interpretation
Dropout	5	0.5375044	0.8627	Good
Poverty	5	0.4009956	0.8305	Good
Child labor	5	0.4195637	0.8242	Good
Cost of education	5	0.4141758	0.8462	Good
Parental income	5	0.3316272	0.8022	Good
Parental education	5	0.3627899	0.9951	Good

Interpretation

Table 4.7 shows the results. The alpha value of poverty, child labor, cost of education, parental income, and parental education constructs is greater than 0.80, which indicates good reliability of the scale. While the alpha value of the parental education construct is 0.79, which is still acceptable because it is greater than 0.7. Average item covariance tells about how items are related to each other. More value shows more consistency. Their all values of average inter-item covariance is between 0.33 and 0.53, which shows it is good. The Cronbach's alpha values of all constructs are between 0.7951 and 0.8627. No value is less than 0.7. Therefore, all items are internally consistent and reliable for the analysis.

4.5 Regression Analysis

The composite index is derived by taking the average of five items of each construct. It reduces the error measurement and gives a single score for each construct. The multiple linear regression model is used in order to see the effect of poverty, child labor, cost of education, parental income, and parental education on school dropout if all variables are taken together.

Table 4.8 Regression Results of Factors Affecting School Dropout

Variable	coefficient	Std.error	t-stat	p-value
Poverty	0.532	0.064	8.30	0.000
Child labor	0.050	0.063	0.79	0.431
Cost of education	0.095	0.064	1.47	0.141
Parental income	0.108	0.078	1.39	0.167
Parental education	0.055	0.063	0.87	0.385
Constant	0.612	0.217	2.82	0.005

Interpretation

a) Poverty

The p-value of poverty is positive and is less than 0.10, which shows it is significant. While keeping all other variables constant when there is a one unit increase in poverty, school dropout will increase by 0.532 units. The relation between poverty and school dropout is significant because poverty directly increases the ability of a person to not afford fees, books, transportation costs, etc. That's why its effect is strong and real.

b) Child labor

The p-value of child labor is positive and is greater than 0.10, which shows it is non-significant. It is because the majority of child labor is due to poverty, and poverty already exists in the model.

c) Cost of education

The p-value of the cost of education is positive and is greater than 0.10, which indicates that it is insignificant. A positive relation shows that when there is a high cost, it increases the chances of dropout. This relation is insignificant because poverty already captures the effect of the non-

affordability of cost. That's why the direct effect of cost on school dropout is insignificant.

d) Parental income

The P-value of parental income is positive and is greater than 0.10, which shows it is non-significant. Insignificant is because poverty and parental income are closely related. When poverty is already present in the model, then the separate effect of income cannot be captured. Theories suggest that there is an inverse relation between school dropout and parental income. When the incomes of parents increase, it leads to a reduction in school dropout. But here there is a positive relation. The reason may be that it doesn't mean that when the income of Parents increases, they must spend on the education of their children.

e) Parental education

The P-value of parental education is positive and is greater than 0.10, which indicates that it is also insignificant. Insignificant is because the impact of education operates through poverty and income so by controlling them, it weakens the direct impact of education. The theory suggests that there is a negative relation between school dropout and parental education. It means that when the education of parents increases, the school dropout rate decreases. But here comes a positive relation between school dropout and parental education. So the reason can be that if the parents are educated, but they are also poor then in such case they are unable to send their children to school. That's why, by controlling poverty, the effect of education disappears.

f) Constant

The P-value of the constant or intercept is positive and is less than 0.10, which shows it is significant. Constant is the baseline dropout level when all predictors are zero.

Table 4.9 Model Summary Regression of School Dropout

Model statistics	value
f-statistics	58.04
Prob > F	0.000
R ²	0.424
Adjusted R ²	0.416
Number of observation	401

Interpretation

- Here, the P-value is less than 0.10, which shows that this model is overall statistically significant.
- It means that at least one independent variable has a real impact on the dependent variable, school dropout. The more F-values show that the model is better.
- The value of R^2 shows that all independent variables combined explain 42.4 percent of the variation in the dependent variable dropout.
- While the remaining 57.6 percent variation is because of other factors that are not present in the model
- A model has an R^2 value of 40 percent, which shows it is a good fit.
- Adjusted R^2 : it adjust the R^2 according to the number of variables. Here, the value of adjusted R^2 shows that after adjusting the number of variables, this model explains 41.6 variation.
- There is no such big difference between the value of R^2 and adjusted R^2 , which means that this model does not contain extra variables.
- The number of observations shows that this analysis is based on 401 respondents.

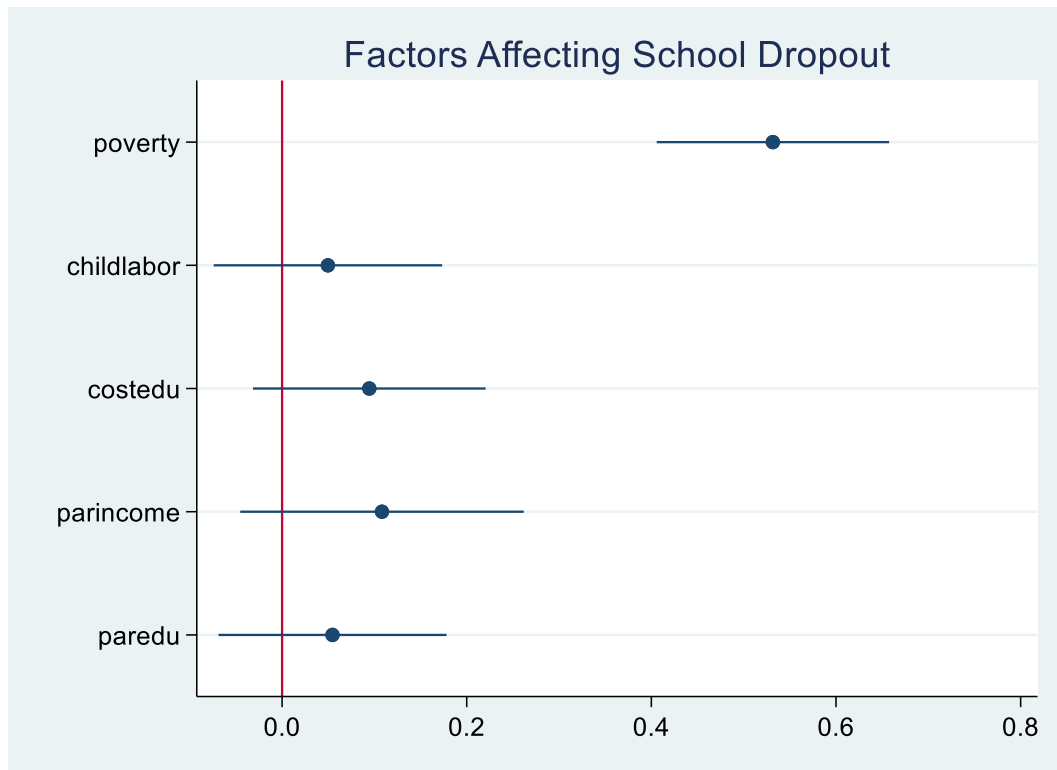


Figure 4.5: Coefficient plot

The X-axis shows the value of the coefficient from 0.0 to 0.8. Positive values show that dropout increases when the independent variables increase. While 0.0 value shows the no effect that is a red vertical line. If the dot or line of any variable cross this red vertical line, it means it will not be significant. The blue dot shows the estimated coefficients of each variable. The more right the dot, the more positive the effect will be. The horizontal line shows the 95 % confidence interval. If this horizontal line does not cross the red line, it means the result is significant. That is, P is less than 0.05, otherwise, it will be non-significant.

The dot of poverty is at 0.58, and the horizontal line did not cross the red vertical line. It shows that poverty has a positive, strong, and statistically significant impact on dropout. The dots of the remaining variables are near 0 and also cross the red vertical line. This shows the insignificant relation. Because when there is poverty in the model, it weakens the effect of other poverty-related factors. This plot clearly shows that the effect of poverty on school dropout is 5 to 6 % more than the other independent factors.

The dots of the remaining variables are near to zero and also cross the red vertical line. This shows the insignificant relation because when there is poverty in the model, it weak the effect of others poverty related factor.

This plot clearly shows that the effect of poverty on school dropout is 5 to 6 % more than the other independent factors.

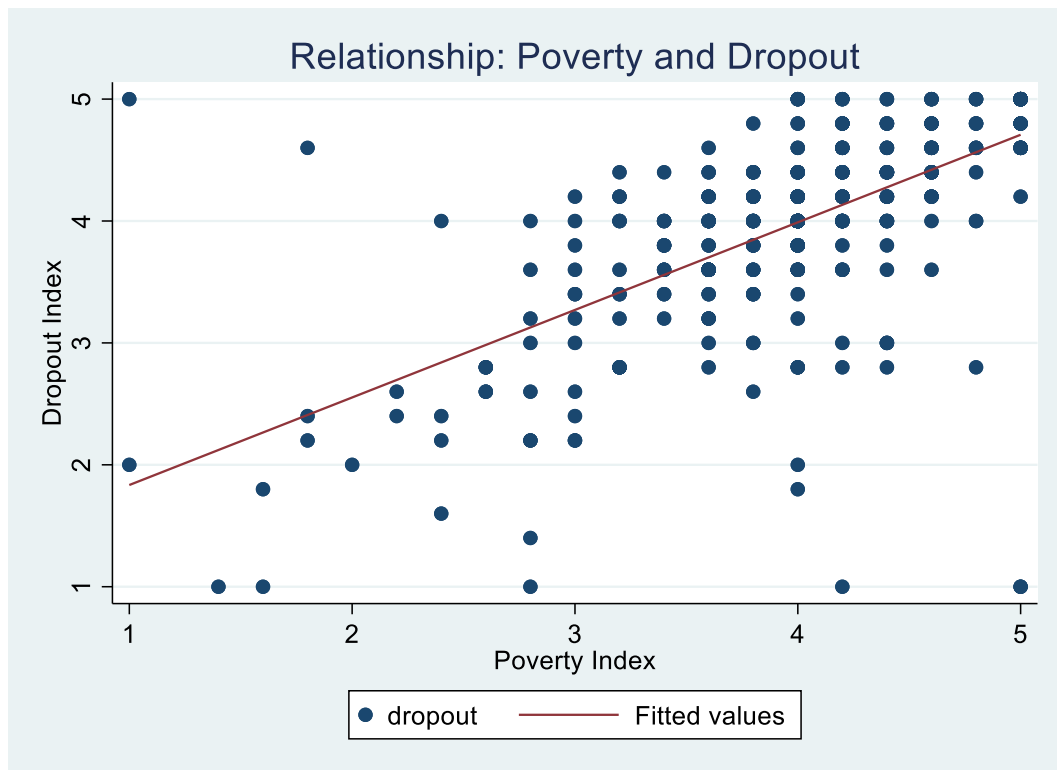


Figure 4.6: Scatter plot of poverty VS dropout

In this scatter plot, the blue dots represent each respondent. The X-axis shows the poverty index, while the Y-axis shows the dropout index. The red line indicates the fitted regression line. In this scatter dot, the line shows a poor direction, which shows a positive slope. It means that with the increase in poverty, school dropout also increases. The cluster shows that the majority of the dots are around the positive slope line, especially from 3 to 5, which shows the strong relationship. This positive relationship is shown in the regression table in the form of a coefficient value of 0.532. Some dots are away from the positive slope line in the form of outliers, with the overall patterns being clear.

4.6 Diagnostics Tests

4.8.1 Multicollinearity

Multicollinearity occurs when two or more than two independent variables are closely correlated with each other. It makes the coefficients unreliable.

- **VIF tests**

VIF stands for variance inflation factor. It tells about how much one variable is correlated with another. If the value of VIF is equal to 1, it means there is no correlation. If the value of VIF is 1 to 5, it means there is less correlation. If the value of VIF is 5 to 10, it indicates moderate correlation. But if the value of VIF is greater than 10, it shows serious multicollinearity.

Table 4.10 VIF test results

Variable	VIF	1/VIF
Poverty	2.18	0.459345
Child labor	2.22	0.450830
Cost of education	2.21	0.452248
Parental income	2.77	0.360613
Parental education	1.98	0.505216
Mean VIF	2.27	

Interpretation

If the value of VIF is less than 10, then it is acceptable and shows no problem. Here, the VIF results show that the VIF values of all variables lie between 1.98 and 2.77, and their mean VIF is 2.27. These results show that there is no severe multicollinearity in the model.

- Correlation matrix

A correlation matrix is a table that shows how variables are correlated with each other. Its value is between -1 and +1. +1 indicates perfect positive correlation, that is, if one variable increases, the other will also increase. 0 indicates no relationships. While -1 indicates perfect negative correlations. It means if one variable increases, the other will decrease. If the correlation value of two variables is greater than 0.80, it indicates a problem of multicollinearity.

Table 4.11 Correlation Matrix Of Indices

Variable	1	2	3	4	5	6
School dropout	1.0000					
Poverty	0.6324*	1.0000				
Child labor	0.4757*	0.6295*	1.0000			
Cost of education	0.4837*	0.6155*	0.6330*	1.0000		
Parental income	0.5167*	0.6682*	0.6273*	0.6776*	1.0000*	
Parental education	0.4304*	0.5473*	0.5957*	0.5073*	0.6607*	1.0000

This (*) star shows the significant relationship because here the probability value is less than 0.05.

- The relations of the independent variable with the dropout

Poverty value shows a moderate positive correlation, which means that where there is high poverty, there is a significant positive correlation with high dropout. While the value of the other independent variable shows a weak to moderate positive correlation.

- Relationship of independent variables with one another

All independent variable values lie between 0.51 and 0.67. The higher correlation is only between parental income and the cost of education. But it is non-problematic because it is less than 0.80. In short, all independent variables are related to the

dependent variable dropout, and all independent variables are also related to one another, but are not highly correlated and problematic.

4.8.2 Heteroscedasticity

Heteroscedasticity means that the variance of the error term is not constant. It makes the standard errors incorrect.

BREUSCH PAGAN Test

Null hypothesis (Ho): variance is constant (homoscedasticity).

Result of BREUSCH PAGAN TEST:

$$\text{Chi2 (1)} = 29.47$$

$$\text{Prob} > \text{chi2} = 0.0000$$

Here, this result shows that the probability value is less than 0.05. It means that we reject Ho and accept the alternative hypothesis (Ha). This means that heteroscedasticity is present in the model. That is, the variance is not constant.

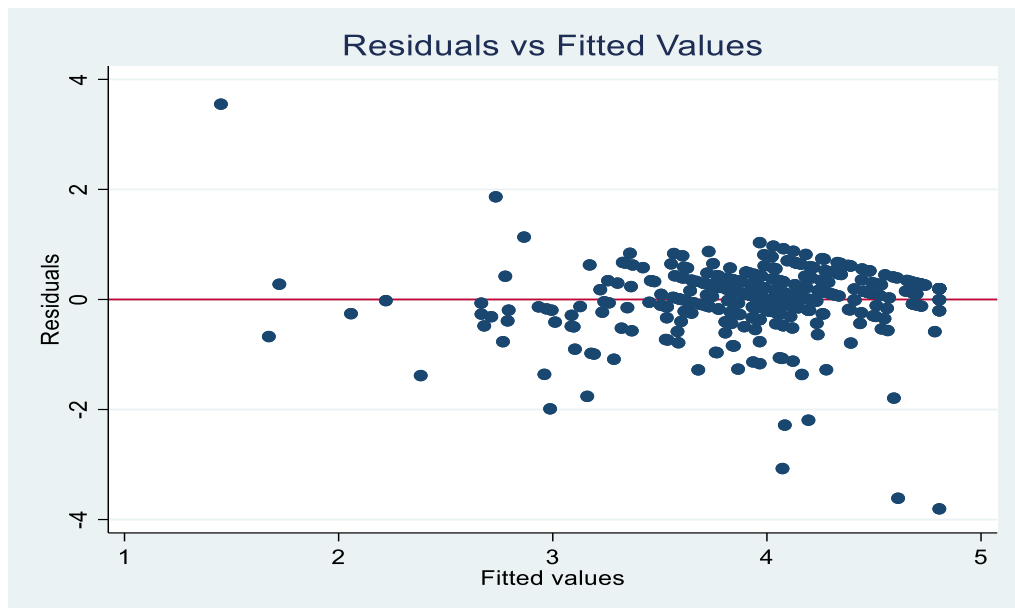


Figure 4.7: Residual vs fitted plot

In Figure 4.7, on the X-axis, there are fitted values, while on the Y-axis, there are residuals. In this plot, the points are not scattered equally. As fitted values increase, the dispersion of residuals also increases. This plot also confirms the BREUSCH PAGAN TEST results that heteroscedasticity problem is present. Such violation is common in the survey of cross-sectional data due to income inequality and outliers present in the data and to solve this problem of heteroscedasticity, robust standard errors will be used in the regression.

4.8.3 Normality of Residuals

OLS assumes that the residuals are normally distributed in order to make a correct t-test and an F-test.

Jarque-Bera test results

Variable	Obs	Pr(skewness)	Pr(kurtosis)	Adj chi2(2)	Prob>chi2
reside	401	0.0000	0.0000	137.95	0.0000

The result of this test shows that the probability value is less than 0.05. So, we will reject H_0 . It means residuals are not normally distributed. The skewness and kurtosis values show that the distribution is not equal, and the peak is also not normal.

Skewness value:

= 0 normal distribution

> 0 right skewed

< 0 left skewed

The probability value of skewness shows that there is zero percent chances then the value of skewness will be equal to zero, which is a normal distribution.

Kurtosis value:

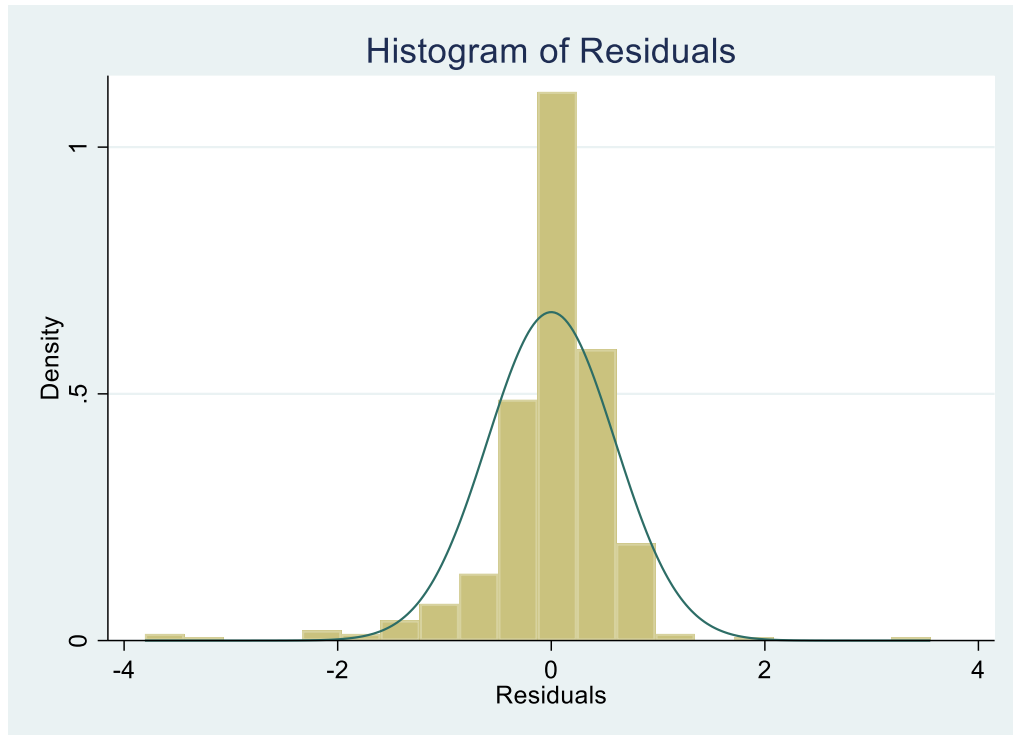
= 3 normal distribution

> 3 leptokurtic

< 3 platykurtic

The probability of kurtosis also shows that there is zero percent chance that the value of kurtosis will be equal to 3.

i: Figure 4.8 Histogram residuals



The distribution of residuals is shown in Figure 4.8. It also shows the normal curve. Figure 4.8 shows that the histogram did not match the normal curve. It is skewed toward the right side and more peaked. This figure also confirmed the result of the test that the residuals are not normally distributed. But it is not problematic here because the sample size is 400 plus. According to the central limit theorem, when the sample size (N) is greater than 30 to 50, then the coefficients are not affected even if normality is violated. So it does not affect the validity of the results.

4.8.4 Autocorrelation

Autocorrelation is when the residuals of one observation are affected by the residuals of another observation. This problem almost exists in the time series data.

Result of tests:

STATA gives “time variable not set use tsset varname” when running “`jab estat dwatson`” and “`estat bgodfrey`” commands for the Durbin-Watson test and serial

correlation LM test for checking autocorrelation. Because these tests are applied to time series data only, but here there is cross-sectional data. That's why the autocorrelation test is not applicable in the case of cross-sectional data.

4.7 Robust regression

Robust regression is a technique that makes the OLS regression results reliable when there is heteroscedasticity or outliers present in the data. Due to the heteroscedasticity problem, a robust option is used to correct the standard errors.

Table 4.12: Robust regression results

Drop out	Coefficient	Robust Std.error	t	P > t	[95% conf. interval]	[95% conf. interval]
Poverty	0.5316778	0.0833824	6.38	0.000	0.367749	0.6956065
Child labor	0.0496506	0.067829	0.73	0.465	-0.0837003	0.1830015
Cost of education	0.0945047	0.0728718	1.30	0.195	-0.0487603	0.2377696
Parental income	0.1082207	0.087223	1.24	0.215	-0.0632585	0.2797001
Parental education	0.0546371	0.0655767	0.83	0.405	-0.074286	0.1835601
Constant	0.6117526	0.4141803	1.48	0.140	-0.2025209	1.426026

The R^2 value is equal to 0.4235. It means 42.3% variation is explained by the model in dropout. The probability value shows that the overall model is significant. For controlling heteroscedasticity, robust standard errors are used. The result shows that only poverty has a significant impact on dropout at 1% level. While the remaining independent variables, such as child labor, cost of education, parental income, and parental education has statistically insignificant effect on dropout. After using robust standard errors, the coefficient of all variables remains the same, only the standard errors slightly change in order to correct heteroscedasticity. P-values are also almost the same.

4.8 Summary

The results of this chapter shows that in Peshawar, poverty has a major and significant effect on school dropout. After using robust regression, the coefficient of poverty came positive and significant at 1% level which means when poverty increases, school dropout also increases. The effect of other variables, such as child labor, cost of education, parental income, and parental education, is also positive, but it is statistically insignificant. The R^2 value of the model shows that this model explain 42% variation in the dropout. These results directly connect with our research objectives. The first objective was to find the effect of poverty on school dropout. This is confirmed by the results. The second objective was to find the other factors related to poverty that contribute to school dropout. But results show that these factors do not have a separate significant effect on dropout. Therefore, in the case of Peshawar, the major cause of school dropout is poverty.

Chapter-5

CONCLUSION

5.1 Objectives

The purpose of this study is to find out the empirical relationship between poverty and school dropout in Peshawar. In the introduction chapter it has been seen that education is the main factor to break the cycle of poverty along with the basic human right. But in Pakistan, especially in Peshawar, Khyber Pakhtunkhwa, 35% children are out of school. Therefore, this study was based on two main objectives.

1. To find out the direct and significant effect of poverty on school dropout.
2. To find poverty related factors that contribute more to the school dropout.

These objectives are based on the capability approach and human capital theory. According to these two theories, if a household does not possess socioeconomic resources, then they are unable to take part in this long-term investment, i.e. education.

5.2 Area

The geographical area of this research is Peshawar city. Peshawar is selected because in Peshawar, the poverty rate is high, that is, 31%. According to the provincial education department in Peshawar, approximately 5000000 children are out of school. Also, both urban and rural poverty are present in Peshawar, which results in a more reliable and applicable outcome. Data is collected from both parents and teachers in order to add both perspectives of schools and households.

5.3 Time period

This data is collected in May 2026 through a cross-sectional survey. Cross-sectional data is selected because time and resources are limited; the purpose was to understand the current situation, not the time trend.

5.4 Methodology

Quantitative research approach is used in this study because, through the quantitative research approach, the relationship between variables is measured in the form of numbers.

5.4.1 Data collection

Data is collected through a structured questionnaire from 401 respondents. Each variable is measured on a five-point Likert scale, i.e. (1) strongly disagree, (5) strongly agree. It helps in converting perception, attitude and opinion into numerical form.

5.4.2 Data analysis

1. Descriptive statistics

The mean value of all variables was between 3.97 and 4.11. It means mostly people lie between agree and strongly agree. The standard deviation was between 0.83 and 0.96 which indicates that mostly the answers were consistent and were not more scattered or dispersed.

2. Reliability analysis.

The value of Cronbach's alpha for every construct was greater than 0.80. It was 0.9951 for parental education. It shows that all the questions were internally consistent and reliable.

3. Regression analysis

At first, OLS regression was run, but the Breusch-Pagan test identified a heteroscedasticity problem in the model. Therefore, for the final model, robust regression was used. This corrects the standard errors and makes it reliable.

5.5 Results

The results of robust regression give some important points.

A) Poverty

The coefficient of poverty was 0.5317, and its P-value was 0.000. It shows that poverty is statistically significant at 1% level. It means that if there is a one-point increase in the poverty index, there will be a 0.53-point increase in the dropout index. These results confirm the human capital theory in the capability approach. Low income household prioritize short term survival over long-term investment, education.

B) Other factors

1. Child labor

The coefficient of child labour is 0.0496, and its P-value is 0.465, which is greater than 0.10. This shows the insignificant relationship between child labour and school dropout. Children engaged in child labour because of poverty. So by controlling poverty, the separate effect of child labour disappears.

2. Cost of education

The coefficient of cost of education is 0.0945, its P-value is 0.195, which is greater than 0.10. It shows an insignificant relation because the cost of books, transportation, and uniforms is a hurdle in the way of education, but these are also a part of poverty.

3. Parental income

The coefficient of parental income is 0.1082, and its P-value is 0.215, which is greater than 0.10. It also indicates an insignificant relationship between dropout and parental income.

4. Parental education

The coefficient of parental education is 0.04546; its P-value is 0.405, which is greater than 0.10. It also indicates an insignificant relationship between dropout and parental

education. It is because when parents are educated, but they are also poor, then they are unable to send their children to school. It means that poverty is like an umbrella variable that captures the effects of all other factors.

C) Model fit

The value of R^2 is equal to 0.4235. It means that all the selected variables in the model explained 42.35% variation in the dropout. In social sciences, when the R^2 value is 40% plus, then it is considered a good fit model. The value of adjusted R^2 is equal to 0.416, which shows that the overall model is a good fit and there is no extra variable in the model. The f-statistic value is equal to 58.04, and its probability is 0.000, which shows that the overall model is significant.

5.6 Policy recommendations

On the basis of the regression results, the following are some of the recommendations.

1. Targeted poverty alleviation

Programs like conditional cash transfer should be encouraged and expanded. In the conditional cash transfer program, direct cash is given to poor households monthly or after three years on the condition that they will send their children to school and also ensure 80-90% attendance. So it will be beneficial if Benazir's income support program in Peshawar is expanded and linked with the condition that those who receive money through Benazir's income support program will send their children to school. It will help in decreasing financial pressure and also the opportunity cost.

2. Remove hidden costs of education.

Even though there is no school fee and the government provides books and transport, some indirect costs, such as costs of stationary, private tuition fees, exam fees, expenses of daily pocket money and costs of uniform, still become a hurdle to education for poor households. The government should subsidize low-income areas and also introduce targeted cash transfers to support students from low-income families. Also, the government should strictly monitor unofficial fees and donations in schools to ensure the implementation of the “no hidden fee policy”.

3. Linkage between child labour and social protection

Only making laws is not enough because if the households are poor, they will violate the laws. Therefore, alternative income support, such as a small stipend or a food package, should be provided to poor households that send their children to school instead of engaging them in child labour. Also, free vocational training like electrician, carpenter, tailoring, etc., should be given to those children who dropped out and crossed the age limit.

4. Community-based awareness programs

Sometimes parents know about the importance of education, but they are compelled by high economic pressures. Therefore, awareness campaigns should be arranged through media, mosques or local leaders to tell people that education increases future income, educated children can lift their family from poverty, and girls' education can make a better society and home.

5.7 Limitations

This study is cross-sectional-based, due to which the cause-and-effect relationship is not hundred percent determined. It may be possible that the result may be affected by unobserved factors that vary over time. Therefore, it will be better to conduct a longitudinal study in the future to find out the variation over time. Along with it, qualitative interviews should be conducted in order to understand the parents' behavior that why they withdraw their children from schools and priorities work over education.

The diagnostic tests show the violation of two assumptions of OLS. The Breusch-Pagan test confirms the presence of heteroscedasticity, and the residual histogram shows the non-normal distribution of residuals. Such violations are common in the survey of cross-sectional data due to income inequality and outliers present in the data. To solve this, the study has already used robust standard error in the regression analysis, which provide reliable results even under heteroscedasticity, while for non-normality, the 400-plus sample size satisfies the central limit theorem. Therefore,

these violations do not affect the results, and the estimates of the coefficients are unbiased and reliable.

5.8 Conclusion

This research shows that in Peshawar, the main and direct cause of school dropout is poverty. The other factors, like child labour, cost of education, parental income, and parental education, are factors that also arise due to poverty. It is not possible to reduce school dropout only by making schools and providing awareness until poverty is targeted directly. If the government targets poverty by providing financial aid and free-of-cost facilities to poor households, it can bring a significant decrease in the dropout rate. And in this way, we can reach the sustainable development goal four (SDG 4) - quality education for all and can give this basic right to every child.

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Appendices

Appendix-A **QUESTIONNAIRE**

EFFECTS OF POVERTY ON SCHOOL DROPOUT: A CASE STUDY OF
PESHAWAR

DEMOGRAPHIC VARIABLES:

AGE

1. What is your age?

GENDER

2. What is your gender?

EDUCATION

3. What is your current education level?

INCOME

4. What is your household income level?

DEPENDENT VARIABLE:

SCHOOL DROPOUT

- 1) Poverty is the main reason of school dropout Peshawar.
- 2) Children from low income families have high chances of school dropout.
- 3) Financial problems compel parents to withdraw children from school.
- 4) School dropout is common in poor households.
- 5) Economic hardships increase school dropout rate among children.

INDEPENDENT VARIABLES:

POVERTY

- 1) Poverty reduces school attendance of children.
- 2) Poverty limits children access to schooling.
- 3) Poverty is a major reason children dropout of school.
- 4) Poor households face difficulty in continuing children's education.
- 5) Financial hardship forces families to prioritize work over schooling.

CHILD LABOR

- 6) Child labor is a major cause of school dropout.
- 7) Working children have high chances to leave the school.
- 8) Parents depend on the earnings of children for household/family support.
- 9) Working children have less time for studies.
- 10) Child labor negatively affects academic performance.

COST OF EDUCATION

- 11) High school fees discourage parents from sending children to school.
- 12) Transportation cost affects school attendance.
- 13) Expenses on books and uniforms are difficult to afford.
- 14) Education has become too expensive for poor families.
- 15) Frequent increase in school fees lead to higher dropout rate.

PARENTAL INCOME

- 16) Low parental income increase chances of school dropout.
- 17) Higher parental income helps children continue schooling.
- 18) Parent's earning determine children's education level.
- 19) Irregular income affects children's schooling continuity.
- 20) Families with stable income are more able to support education.

PARENTAL EDUCATION

- 21) Educated parents are more likely to support their children's education.

- 22) Lack of parental education increase dropout risk.
- 23) Parents with higher education understand the importance of schooling.
- 24) Uneducated parents face difficulty guiding children in studies.
- 25) Parental awareness about education reduces dropout rates.

Appendix-B

VARIABLE CODING FRAME

VARIABLE NAME	SCALE	CODING
age	20-30 31-40 41-50 51+	1 2 3 4
gender	male female other	1 2 3
education	No formal education Primary Secondary higher	1 2 3 4
income	20,000-30,000 31,000-40,000 41,000-50,000 51,000 and above	1 2 3 4
school dropout	Strongly disagree Disagree Neutral Agree Strongly agree	1 2 3 4 5
poverty	Strongly disagree Disagree Neutral Agree Strongly agree	1 2 3 4 5
child labor	Strongly disagree Disagree Neutral Agree Strongly agree	1 2 3 4 5
Cost of education	Strongly disagree Disagree Neutral Agree Strongly agree	1 2 3 4 5
Parental income	Strongly disagree Disagree Neutral Agree Strongly agree	1 2 3 4 5

parental education	Strongly disagree	1
	Disagree	2
	Neutral	3
	Agree	4
	Strongly agree	5

Appendix-C

QUESTIONNAIRE CODING FRAME

Section 1: Demographics

Questions	Coding
What is your age?	age
What is your gender?	gender
What is your current education level?	education
What is your household income level?	income

Section 2: Dependent Variable

1) School Dropout

Poverty is the main reason of school dropout Peshawar.	pov_main
Children from low income families have high chances of school dropout.	pov_lowinc
Financial problems compel parents to withdraw children from school.	fin_withdraw
School dropout is common in poor households.	drop_poor
Economic hardships increase school dropout rate among children.	econ_hard

Section 3: Independent Variables

1) Poverty

Poverty reduces school attendance of children.	pov_attend
Poverty limits children access to schooling.	pov_access
Poverty is a major reason children dropout of school	pov_major
Poor households face difficulty in continuing children's education	poor_cont
Financial hardship forces families to prioritize work over schooling.	fin_work

2) Child labour

Child labor is a major cause of school dropout.	clab_major
Working children have high chances to leave the school.	work_leave
Parents depend on the earnings of children for household/family support.	par-earn
Working children have less time for studies.	work_time
Child labor negatively affects academic performance.	clab_perf

3) Cost of Education

High school fees discourage parents from sending children to school.	fee_disc
Transportation cost affects school attendance.	cost_trans

Expenses on books and uniforms are difficult to afford.	cost_books
Education has become too expensive for poor families.	edu_exp
Frequent increase in school fees lead to higher dropout rate.	fee_inc

4) Parental income

Low parental income increase chances of school dropout.	inc_low
Higher parental income helps children continue schooling.	inc_high
Parent's earning determine children's education level.	inc_edu
Irregular income affects children's schooling continuity.	inc_irreg
Families with stable income are more able to support education.	inc-stable

5) Parental Education

Educated parents are more likely to support their children's education.	pedu_support
Lack of parental education increase dropout risk.	pedu_lack
Parents with higher education understand the importance of schooling.	pedu_imp
Uneducated parents face difficulty guiding children in studies.	poedu_guide
Parental awareness about education reduces dropout rates.	pedu_aware

Appendix-D

DO FILE

Step 1: Import Data File

Import excel "C:\Users\hec\Desktop\data.xlsx.xlsx", sheet ("Form responses 1") first row

Step 2: Check Data Structure

describe

Step 3: Summary Of All Variables

summarize

***Step 4: Descriptive Stats ***

Mean, SD for all scale items

summarize povmain povlowinc finwithdraw droppoor econhard povattend povaccess
povmajor povcont finwork clabmajor workleave parearn worktime clabperf feedisc costtrans
costbooks eduexp feeinc inclow inchigh incedu incirreg incstabe pedusupport pedulack
peduimp peduguide peduaware, detail

Short Version - Mean SD

summarize povmain povlowinc finwithdraw droppoor econhard povattend povaccess
povmajor povcont finwork clabmajor workleave parearn worktime clabperf feedisc costtrans
costbooks eduexp feeinc inclow inchigh incedu incirreg incstabe pedusupport pedulack
peduimp peduguide peduaware.

Step 5: Demographic Analysis

Table 1: Frequency Distribution - Age

tabulate age

Graph 1: Age Distribution - Pie Chart

graph pie, over(age) plabel(_all percent, format(%2.1f)) title("Age Distribution of
Respondents") legend(label(1 "20-30") label(2 "31-40") label(3 "41-50") label(4 "51+"))

Table 2: Frequency Distribution - Gender

tabulate gender

Graph 2: Gender Distribution - Pie Chart

```
graph pie, over (gender) plabel(_all percent, format(%2.1f)) title("Gender Distribution of Respondents") legend(label(1 "Male") label(2 "Female") label(3 "Other"))
```

Table 3: Frequency Distribution - Education Level

tabulate education

Graph 3: Education Distribution - Pie Chart

```
graph pie, over(education) plabel(_all percent, format(%2.1f)) title("Education Level of Respondents") legend(label(1 "Primary") label(2 "Middle") label(3 "Matric") label(4 "Intermediate"))
```

Table 4: Frequency Distribution - Income Level

tabulate income

Graph 4: Income Distribution - Pie Chart

```
graph pie, over(income) plabel(_all percent, format(%2.1f)) title("Income Level of Respondents") legend(label(1 "<50k") label(2 "50k-100k") label(3 "100k-150k") label(4 ">150k"))
```

*****Step 6: Reliability Test - Cronbach Alpha*****

Check internal consistency of Likert items

```
alpha povmain povlowinc finwithdraw droppoor econhard povattend povaccess povmajor povcont finwork clabmajor workleave parearn worktime clabperf feedisc costtrans costbooks eduexp feeinc inclow inchigh incedu incirreg incstabe pedusupport pedulack peduimp peduguide peduaware, item
```

COMMANDS FOR EACH ALPHA

```
alpha povmain povlowinc finwithdraw droppoor econhard
```

```
alpha povattend povaccess povmajor povcont finwork
```

```
alpha clabmajor workleave parearn worktime clabperf
```

```
alpha feedisc costtrans costbooks eduexp feeinc
```

alpha inclow inchigh incedu incirreg incstabe

alpha pedusupport pedulack peduimp peduguide peduaware

*****Step 7: Regression Analysis*****

*** Step 7a: Create Indices For Dv & All Ivs***

Average score of 5 items for each construct

egen dropout = rowmean (povmain povlowinc finwithdraw droppoor econhard)

egen poverty = rowmean (povattend povaccess povmajor povcont finwork)

egen chidlabor = rowmean (clabmajor workleave parearn worktime clabperf)

egen costedu = rowmean(feedisc costtrans costbooks eduexp feeinc)

egen parincome = rowmean(inclow inchigh incedu incirreg incstabe)

egen paredu = rowmean(pedusupport pedulack peduimp peduguide peduaware)

STEP 7B:DV = dropout, IVs = 5 constructs

regress dropout poverty chidlabor costedu parincome paredu

*****Step 8: Regression Visualization*****

ssc install coefplot

Coefficient Plot

coefplot, drop(_cons) xline(0) title("Factors Affecting School Dropout") xlabel(
format(%3.1f))

Scatter Plot

twoway (scatter dropout poverty) (lfit dropout poverty), title("Relationship: Poverty and
Dropout") ytitle("Dropout Index") xtitle("Poverty Index")

*****Step 9: Regression Diagnostics- All Tests*****

Test 1: Multicollinearity

A. VIF Test

vif

B. Correlation Matrix of Indices

```
pwcorr dropout poverty chldlabor costedu parincome paredu, sig star(0.05)
```

Test 2: Heteroskedasticity

Breusch-Pagan Test

```
estat hettest
```

Visualization: Residual vs Fitted Plot

```
rvfplot, yline(0) title("Residuals vs Fitted Values")
```

TEST 3: NORMALITY OF RESIDUALS

Jarque-Bera Test

```
predict resid, residuals
```

```
sktest resid
```

*** Histogram of Residuals***

```
histogram resid, normal title("Histogram of Residuals")
```

Test 4: Auto-Correlation

Durbin-Watson Test

```
estat dwatson
```

Serial Correlation LM Test

```
estat bgodfrey
```

****** Step 10: Robust Regression - Corrected Model******

Corrects for heteroskedasticity

```
regress dropout poverty chldlabor costedu parincome paredu, robust
```

*****Step 11 :Word Table Export - Final*****

```
ssc install outreg2
```

regress dropout poverty childlabor costedu parincome paredu, robust

outreg2 using "Final_Regression.doc", word replace