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ECONOMIC ANALYSIS OF DISTANCE IMPACT ON HIGHER EDUCATION EXPENDITURE IN PAKISTAN

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ABSTRACT
This study assesses how much money Pakistani families spend on schooling. The Pakistan Social and Standard Living Measurement (PSLM) statistics for 2018–19 served as the basis for this analysis. It looks at the factors and components that affect the families' overall educational expenses. According to the estimation results, how the number of children in a household, the distance of students from their homes to educational institutions, and the degree levels of the children residing in Pakistan's four regions affect household expenditure on higher education. It also examines that how much money a families spend on education. However, it turns out that each element positively affects the policy suggestions for families of Pakistan who choose to pursue education. Every revelation could also affect different issues relating to the educational system. Each of these factors influences household spending on education differently. The OLS (Ordinary Least Square) Method and regression analysis will be used to carry out the regression. Because dependent variable in a model is quantitative in nature, so above mentioned methods and techniques will be considered to execute the regression. To put the plan into action, estimates and results will be started. It will address any problems that can be accounted for by the factors related to family education expenditures.

***KEYWORDS**: Education spending, Household, Number of the children, Family head, Distance from educational institutions, PSLM, OLS, Regression T-test, P-Value.*

Introduction

In any society, education is crucial to its growth and to fostering harmony. As a result, it has consistently drawn the majority of debate in society. Education has a major impact on earning potential or prestige in the workplace and can almost solve financial problems like unemployment

and poverty. Education has a crucial part in the creation and upkeep of governmental institutions. The human capital theory states that education increases output and profitability (Walker, 2003; Chevalier et al., 2004). The seminal mechanisms of Becker (1964), Mincer (1974), and Lucas (1988) shaped economic theory regarding how obtaining an education raises personal income and influences the economy's long-term outlook. Results from observations support the idea that education could be used to reallocate money and reduce poverty (Stiglitz 1974; Behrman et al. 1980). Thus, education may continue to be the cornerstone of both economic growth and income equality.

A momentous portion of Pakistan's residents is currently enrolled in school; 48 percent of the people are between the ages of 5 and 24 (LFS, 2013–14), making up a significant portion of the population who are already in school. This populace can be converted into a segment profit by putting resources into education and capabilities improvement. In addition, Pakistan has a demographic share likely for monetary growth since the proportion of its total population that is working age is growing and is expected to continue growing till 2040 (Bongaarts , Sathar, & Mahmood, 2013; Saad, 2016). It is understood that Pakistan's macroeconomic performance could be affected in the future by this pattern of demographic change. Additionally, the China-Pakistan Economic Corridor, or CPEC, will soon be operational. Therefore, investing in education is necessary to increase the workforce's education and skills in order to benefit from the demographic dividend.

The public capitalizes two ways in schooling, organization level and family level. In the circumstance of Pakistan, there is a realistic amount of evidence about how much money the government spends on education, but there is not much information about how much money households spend on education. Public and private sector expenditures are equally significant. Because the presence or absence of either one indicates a suboptimal allocation of resources and investments made by households and by, the government are interconnected and dependent on one another. As a result, ignoring education expenditures by households is costly because a lack of information leads to incorrect assumptions regarding households' willingness to pay for education. National educational policies are less effective because of these flawed assumptions. As a result, it is crucial to investigate and evaluate the demand for education in Pakistan and the willingness of households to pay for it.

Feasible advancement objectives are appended to education turn of events and especially education objectives are acting the advancement of education turn of events, both concerning quality and concerning amount (Sial et al., 2020). Arrangement of value schooling in the point of view of Pakistan, the Public authority of Pakistan has committed education advancement as well as the achievement of Joined Country 17 Feasible Improvement Objectives by 2030. In such manner schooling, related use supposedly increased by 4.7 percent in 2018-19. Furthermore, a measure of Rs.4.8 billion for 11 on-going and 21 new improvement projects designated in 2019-20 under the Bureaucratic, Pakistan Social Advancement Program (Legislature of Pakistan, 2019). Moreover, a measure of Rs.29.047 billion has been allotted to the Advanced education Commission for 128 on-going and 10 new ventures for public area colleges in the country.

Pakistan has been honored with an open door that around 60% of the complete populace lies between the ages of 15-64 years. On the off chance that serious consideration as far as human resources might be given to this gathering, it can assume a vital part in higher monetary development. Pakistan has the ninth biggest workforce on the planet, and it is the second biggest

labor supply/work trading country in South Asia. The unfamiliar settlement contributed from the trading of labor/work was US$ 21.73 billion out of 2018-19 (Legislature of Pakistan, 2019). The unfamiliar settlements assume a positive part in monetary solidness and reinforce the prosperity of the family area. Education improvement of the family part is one of the vital variables for possessing a superior station on the planet work market (Suhaimi and Ghani, 2020). The world work market requests laborers which are sound as far as specialized expertise since it is one of the variables for supporting efficiency, effectiveness, and monetary development (Acemoglu, 2009; Barro and Lee, 2013; Tsaurai, 2018; Yun and Yusoff, 2019). Interest in human resources improvement especially schooling and wellbeing drives a positive commitment to financial development and lightening poverty (Akca et al., 2017; Bischoff and Prasetyia, 2019; Hooda, 2015; Pallegedara and Sisira, Kumara, 2020). As a significant part of instruction venture, the family spending plan distribution affects youngsters schooling and human resources amassing (Tune and Zhou, 2019). Disparity in family education expenditure prompts make a bigger imbalance in kids' schooling results (Amankwah et al., 2018; Aslam and Kingdon, 2008; Chi and Qian, 2016). It has been gotten crowed out the impact of a bigger interest in kids' schooling on different sorts of family utilizations which might decrease expectation for everyday comforts of family and extend social imbalance inside a locale (Chi and Qian, 2016; Sarma and Pais, 2008). This study covers a near report on family education expenditure for in general Pakistan and territories of Pakistan while using a family financial plan overview dataset.

1.1 Objectives of the study

1. To analyze the factors prompting family education spending based on distance.
2. To quantify the extent how much the families of Pakistan spend on education.
3. To consider such statistics and practical conclusions into effect for policy implications pertaining to education of Pakistan.

1.2 Background and Significance of the Study

The current study focuses on the factors that affect family education spending. No one has made a clear effort to break down the costs of education by degree, despite the fact that numerous experts have already researched education. The researcher has, however, made an effort to identify the variables that affect household education expenditures from graduation to a PhD. Researchers and those involved in policy will undoubtedly benefit from quantifying household spending on educational attainment.

Review Literature

Yousaf et al. (2021) utilized the three round of Pakistan Family Spending plan Study information likes, 2013-14, 2015-16 and 2018-19, to analyze the family mean education expenditures at region level in Pakistan. They came to at the resolution, with the progression of time, the mean education spending were expanding in all region yet this increment was higher in Sindh and KP. Then again, the investigation of Idrees and Khan (2020) attempted observationally research the interest for education for various level. They utilized Pakistan Social and Expectation for everyday comforts Estimation Overview, 2014-15 to accomplish the goal and they reasoned that head schooling, procuring's informed people and proportion of male in each designated bunch tracked down the critical effect on interest for education at each level. The current review, consequently, concerning Pakistan is an endeavor to exactly examine the effect of family's attributes on OOP (From cash on hand) education expenditures choice of family's head. We/scientists doesn't limit the OOP education expenditures at a particular degree of education rather we utilized the term education

spending from essential to Ph.D. Regulation, Clinical, Designing and so on in Pakistan. Our next commitment in writing and particularly to education writing is, we have utilized two most significant factors, which was not utilized by some other's specialists before like, distance from home to education foundation and numbers the family individual whose were at present signed up for education organization. The discoveries of our review will empower the educationist strategy creators to foster such kinds of polices to diminish the education weight from family's side in Pakistan.

Kuvat and Kizilgöl (2020) investigated personal family education spending utilizing information from the Turkey family financial plan overview 2017. The information show that family pay, family head education level, and individual home are the main indicators of education spending. The qualities affect family education spending. Family size increments and lesser admittance to instruction are both connected to diminish family personal spending.

Chandrasekhar, Rani, & Sahoo (2019) concentrated on the expenditure n advanced education by utilizing information from the two late Public Example Study Office overviews. The creators assessed that families picking advanced education burn through 15.3 percent of their complete expenditure in provincial regions; and 18.4 percent in metropolitan regions. The creator further assessed that the offer was bigger in southern states as individuals from south were bound to concentrate on specialized schooling in confidential foundations and accordingly likewise had additional exceptional borrowings. The creators dissected that more unfortunate Indian families were less inclined to get advance for advanced education as they were risk-averter and dubious about future returns.

Jana and Maiti (2019) broke down state-wise uniqueness in open expenditure on advanced education in Indian states. According to the study, budgetary allocations for higher education in India have decreased to less than 1% of the country's gross domestic product since 1991, following economic reform. The versatility of advanced education use to net state homegrown item in numerous Indian states is not as much as solidarity.

Tune and Zhou (2019) explore the job of disparity in an open door in education expenditures in China utilizing Board information of china. Schooling of family heads, area (metropolitan/rustic) and pay of the family was taken as free factor and the outcomes uncovered that each of the previously mentioned factors tracked down the critical yet the negative determinants of education expenditures.

Material and Methods

The analysis of Pakistani households to ascertain the average amount spent on education forms the basis of this study. The Pakistan Social and Living Standard Measurement (PSLM) Assessment Round VII 2018–2019 provided the data for this investigation. KPK, Punjab, Sindh, and Baluchistan are the four parts of Pakistan that comprise the informational collection. With a random sample size of 2166 people from all over Pakistan, this review is cross-sectional in nature. Household-level data on various socioeconomic factors, such as the number of the children of the family head and the different type distance covered by the student from their homes to educational institutions. Tuition, fixed scholastic fees, housing costs, and transportation costs are all considered education-related expenses.

3.2 Research Design

Ordinary Least Squares (OLS) and Linear Regression are used to evaluate the equation. The type of dependent variables determines the estimating method. Because this dependent variable is

continuous or quantitative in character, both the OLS and regression analysis methods are applied. Without a doubt, the model was estimated using the regression analysis method. The estimated model will provide quantifiable statistics and the reliability of each explanatory variable. If a variable's probability or P value is less than 5% (0.05), 10% (0.10), or 10% (0.05), it is considered statistically significant; if it is larger than 5% or 10%, it is considered statistically insignificant. Researcher also used the F statistic to assess the overall performance of the Model. If the probability value of the F test is less than 5%, the explanatory variable's power is adequate to sustain the model. The T test and P-value results can also be used to evaluate the significance of each individual variable. Estimated coefficients will be used to assess how the explanatory factors affect the dependent variable, which is the amount of money spent on education by a household. The magnitude of the impact on the dependent variable will be explained by the multiple linear regression model's coefficient.

3.3 Econometric Model

Dependent variable = **C** + $^{B1X1 + B2X2 + B3X3 + e}$

Dependent variable (Y)	=	Education Expenditure
Constant	=	C
X1	=	Education Level (Degrees)
X2	=	Number of children of the Family Head
X3	=	College/University Distance from House
e	=	Error Term

Result and Discussions

4.1 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.516	0.266	0.255	84675.6886

Table 4.1 (Researcher's own contribution, PSLM 2018-19)

Table 4.1 displays the R square and Adjusted R square values, which illustrate how each explanatory variable accounts for variation in the dependent variable. It displays the variance in educational expenditures that accounts for the independent variables in the regression mode. Thus, 26.6% of the variation in educational costs can be explained by independent factors.

The intensity and potency of each independent variable, as well as their effects on the dependent variable, are comprehensively illustrated by the F test statistic, which is summed up in Table 4.2. The statistical significance of the probability value of 0.000 for the F statistic indicates the overall significance of the regression model. The Model Summary and ANOVA table, which offers comprehensive details on the model's performance and plausibility, was covered in the preceding section. It is time to talk about and look at how each of these factors affects the total amount of money spent on education. It will also make clear how each aspect affects the total amount of money spent on schoo

4.2 ANOVA Summary

Table 4.2 (Researcher's own contribution, PSLM 2018-19)

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	5550248752327.473	32	173445273510.234	24.191	0.000
	Residual	15293550803414.492	2133	7169972247.264		
	Total	20843799555741.965	2165			
Dependent Variable: Education Expenditure						

The significance level for the model estimation was taken as (5 & 10 %.)
Dependent Variable = Log (Expenditure on Education)
Log on Independent Variables as well that are quantitative in nature.
R Square = 0.266 Adjusted R square = 0.255
F Statistic = 24.391 Probability = 0.000
e = Random Error Term

4.3 Education Mean Expenditure

The average amount spent on education by a family or household for each degree-bearer is shown in an exclusive, easily readable table in Table 4.3. Given the nature of the degree and the actions of the family leader, this price is entirely justified.

Total Expenditures			
Education Degrees	Mean	N	Std. Deviation
BA/B.SC/B.Com	34653.975	726	39661.0743
B.Ed./M.Ed.	48541.127	71	69035.9159
B.A/B.SC/BS/BE	69960.991	454	57551.1260
MA/MSC	54251.555	299	54671.3398
Degree in Medicine(MBBS/BDS/Pharm-D)	242270.561	107	280201.8506
Degree in Agriculture	98307.692	13	127890.3401
Degree in Law	83215.152	33	49761.3751
Degree in Engineering	129034.545	99	94143.7682
Degree in Accountancy	110503.846	26	64332.9432
MPhil	123361.765	34	84433.6067
PHD	202600.000	7	142580.6906
MS	250222.222	9	302608.2566
Other	23196.094	288	48854.2060

Table 4.4 (Researcher's own contribution, PSLM 2018-19)

4.4 Estimation Results

The estimation's findings will be used to share how much each factor contributes to the education expenditures of the families who want to send their kids to college. The spending component of

Model		Unstandardized Coefficients		Standardized Coefficients	T-Values	P-Values
		B	Std. Error	Beta		
1	(Constant)	38197.746	7383.474		5.173	0.000
	2+ 5 Km	6225.101	2741.410	0.050	2.271	0.023
	5+ 10 Km	6028.898	2072.445	0.063	2.909	0.004
	10+20 Km	5415.268	1823.792	0.062	2.969	0.003
	20+ Km	7311.412	1343.590	0.116	5.442	0.000
	Don't Know	786.174	1427.155	0.011	0.551	0.582
	Hostel	15157.666	939.352	0.348	16.136	0.000
	Number of Children	459.504	1231.008	0.007	0.373	0.009

all variables toward education attained in the various educational institutions will be separated in table 4.5

Table 4.5 (Researcher's own contribution, PSLM 2018-19)

If researcher approaches this table carefully, examining each variable and its strength, the researcher will be able to discuss it in detail. The constant number, also known as an intercept, which indicates the average amount spent on schooling, is displayed in the table when there are no variables in the model. It suggests the possibility that author has missed a factor. Nonetheless, this intercept clearly represents the value or amount of expenditure with the strongest probability value of 0.00.

4.1.1 Distance of Institution from Home

Succeeding variable is distance of student travelling to educational institutions. It can be observed and discuss that this variable has seven sub categories with different number of observations. The table 4.5 above will differentiate the level and nature of each category. It will discuss the gap of distance with the specific limit of remoteness.

This variable contains the different sub categories that will be brought under discussion. Researcher has also kept one category as a base that ranges from zero to two kilometer based on maximum observations. Author will discuss all results respectively with respect to different categories. The first variety of students who travel between the range of two to five kilometers are likely to spend on average 0.050 units or 5% more of expenditure as compared to those who travel between zero to two kilometers as focused in table 4.5. If scholar further glances over this slab then he can conclude that those students who travel between two to five kilometers on average spend 0.063 units or 6.3 % more of expenditure in term of their conveyance as compared to base category of distance. The third scenario that a researcher can draw is the distance covered by the students is from five to ten kilometers for their targeted educational institutions. This result shows that such family's heads are bound to spend on average 0.063 units or 6.3% more as compared to those who travel less distance as the coefficient value for this category is 0.063 with significant probability values less than five percent. Scholar can also examine that the expenditures is relatively going to increase as distance does. It shows the reliability of data and tools used in regression analysis. Afterward situation directs where the scholars travel between ten to twenty kilometers of distance to their colleges or universities for getting higher education. This result also

differs from rest of the consequences as length of the distance too increases the expense of the family on education. The probability values less than five percent indicates that students travelling between ten to twenty kilometers have been forced to pay on average 0.062 units or 6.2 % more for their travel as compared to those who do it for zero to two kilometers. Next category that has to be come under discussion is rang of the distance more than twenty kilometers. Results indicate that such family heads whose student members travel in such domain of distance spend on average 0.116 units or 11.6 % more as compared to base category the of distance. Following category belongs to those family or students who do not know exactly know the length of distance covered by them. The probability value for this category is statistically insignificant as its P value is greater than five percent or 0.005. It follows or indicates that there is no difference of expenditure for family heads who do not know the exact distance and those traveling between zeros to two kilometers. It likewise logically proves that if someone does not know the exact distance then it will be so hard and difficult to report the exact expenditure. The final category for this variable that will determine the level of education expenditure in term of traveling is the type of hostel. It shadows that expenditure will be examined for those scholars who travel from different hostel to their respective education institutions. It comes into facts that such families spend on average 0.348 units or 34.8 % more as compared to base category range of distance. The result of difference for this category is remarkable as its probability value is exactly 0.000.

4.1.2 Number of Children

If the author observes the table, 4.5 then we can examine that probability value for this variable is statistically significant as it is less than five percent. It is indicative that number of children do matters in the way of education. It further follows that increase in one number of children causes to affect household or family expenditure by 0.071 units or 7.1% for their children and they continue education regardless of caring whether greater the number of children increases.

Conclusions

The amount that a family spends on schooling is examined in this study. Scholars have used a range of demographic and socioeconomic parameters to analyze family education spending. It suggests that an increase in the number of the family head's children has an impact on household spending on schooling. It also follows that having more children has an impact on family or household expenses. It illustrates how parents or other family members can continue to have an impact on their children's education at any stage of life; they desire to continue doing so. Significant disparities in spending patterns are discovered when the temperament of the household is assessed based on the distance between their homes and the educational institution. It concludes that parents who engage with these different types of educational institutions are interested in getting their kids an education. Despite their lack of concern and preference for distant institutions, the leaders of the families appear more involved and dedicated to obtaining an education. Additionally, it categorizes the various organizations according to their behavior in advancing education in Pakistan and their degree of remoteness.

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