Research Article

Household Traits and Its Impact on Offspring's Educational Inclusion: Empirical Evidence from Urban and Rural Areas of Pakistan

[1]**Abdul Salam Lodhi** | *[2]**Muhammad Toseef** | [3]**Adnan Nazir**

[1]Professor, Department of Economics, BUITEMS/Director University College of Zhob, BUITEMS

[2]Assistant Professor, Department of Management Sciences, UCoZ, BUITEMS

[3]Professor, Department of Economics, UCoZ, BUITEMS

Correspondence
*[2]Muhammad Toseef
Assistant Professor, Department of Management Sciences, UCoZ, BUITEMS
Email:

ABSTRACT

This study used household income and expenditure, parental perception, believes in tribal norms and voice of mother in the decision making as independent variable to their impact on child's schooling decision compared with its alternate available activities. In this study we used a unique data set collected from various districts of Pakistan for a child labor and education project. The observed relation between income inequality and parental education and the schooling of their children is calculated through a simultaneous equation model. The results reveal that along with the income and education of parents their perception and the role of the mother in decision making have a positive impact on the offspring's schooling. However, belief in tribal norms has a negative significant influence on the schooling of the offspring.

KEYWORDS

Household income and Expenditure, Tribal Norms, Parental Education, Offspring Schooling Inclusion, Parental Perception

1 | INTRODUCTION

Education, which is crucial for human resource development and supports economic growth by improving the usage of a society's knowledge, skills, and creative potential, is an essential component of any society's socioeconomic development over the long term. Education is also essential for the development of human resources. Education has the potential to improve a variety of sectors over the long term, including public health, the reduction of poverty and inequality, and the effectiveness of governance in the enforcement of social and economic policies. Education has stages, such as primary, secondary, tertiary and higher education. In this circle every stages are important, where primary is just like foundation of any building and the importance of higher education could not be ignored for creation of a modern and developed society. The formation of human capital has been shown to have a positive correlation with economic development, as measured by GDP and other indices, and it has been established that education can increase this process (Ghedabna, 2015; Michal, 2014; Krueger, 2001). Previous research on the topic

of the influence of education on the expansion of the GDP has demonstrated that schools contribute to the production of valuable human capital. As Sianesi and Reenen (2003) point out, education has both direct and indirect effects on economic growth. These effects could be either positive or negative. To put this into perspective, education has the potential to improve a variety of inputs, including health, technology, and physical capital. They have the potential to alleviate the issues that are limiting economic growth, such as the growth of the population and the mortality rate of infants, with the assistance of these inputs. As a result of the myriad of repercussions that it produces, education is an essential component of development policy. According to research, the impact of elementary, secondary, and postsecondary education on the economic development and growth of a country varies depending on the stage of development and growth rate of the country. It is essential to keep this aspect in mind when conducting an investigation into the ways in which education contributes to the advancement of the economy.

2 | LITERATURE REVIEW

According to Liao et al. (2019) primary and secondary education is more important for growth in developing countries, whereas higher education is more relevant for economically developed countries. Michel's, (2014)found a strong causal relationship between primary education and economic growth in developing countries, and similarly, Tansel and Gungor (2013)suggested that investment in education has higher private and social returns for low-income and developing countries than developed nations. Whereas, in the most of the developing countries still investment on education is not up to the mark, and the situation is not satisfactory in case of Pakistan. However, these merely represent educational accountancy rather than economic variables. A review of historical literacy rates shows that in Pakistan, yet there is still considerable room for progress and improvements. The study of Quetsch et al. (2022) reported parental perception as compulsory roots of schooling decision. Therefore, this study aims to see how Parental traits are effecting the schooling decisions of the offspring in the household. In the countries where there is more justice in the distribution of educational opportunities poor sectors of these societies had captured a large share of welfares and playing an important role in the economic growth and development of the country. The study of Valenzuela et al. (2020) considered the relevance of household family income to study the schooling decision. Under the shed of the said study, income inequalities in countries are the point of consideration of child schooling. The present study is planned to estimate that how income in equality along with other household trait are affecting the offspring's schooling.

Like the other demand functions, the demand for education must be comprises of two components, such as ability and willingness for education. Hence, ability comes from the income, whereas, willingness of the parents is measured by their perception of education. Measuring the perception of education is ignored in the previous studies and that might be causing the endogeneity problem in the estimation techniques. Addressing this problem of endogeneity is the novelty of this study. Furthermore, this study uses a unique data set collected from various districts of Pakistan for a child labor and education project. The observed relation between income inequality and parental education and their perception of schooling estimated through simultaneous equation model. The rest of the paper is organized as follows. Section second discusses the theoretical framework background of the study. Section three presents a simple theoretical model of school choice. Section four discusses the dataset whilst empirical results are presented in Section five and section six concludes.

Previous research supports the hypothesis that the parent's participation in schooling activities explains much of the variation in academic performance at the group level differences such as race and ethnicity, education, income and origin (MašaĐurišić & Mila Bunijevac, 2017; Richardson, 2009; Ho, 2009; Clarke, 2007).Different types of parent's attitude and practices are associated with different outcomes, such as a positive and caring attitude associated with the positive schooling results of the students. These include the imposition of parental practices, high hopes and aspirations parent-teacher communication, participation in school activities or parents supporting activities at home, participation and discussion of the activities, participation in school administration or taking roles in making decisions and also strong social networks or social capital (Vernez et al., 2012).

In income-education connections and wealth constraints, access to credit market or the ability to get borrowings can play an important role. In the case of borrowing, there are two theories in economics that explain the link between short-term borrowing restriction and long-term family past (Mensah, & Kiernan, 2010). A number of theories have been put forward to describe why we see an association between the income of parents and the results of the children but they do not provide any information about how income and education of the parents affect the percentage of the children in the household enrolled in the school (Gertler et al.,2012).

Investment theories that have a control on economics, explain the relationship between parents and economic attainment of children is the outcome of biological inheritance and another characteristic that parents inherited to their children, and are associated schooling decision children (Katy Bergstrom & William Dodds, 2023). These comprise genetic inheritance like as race, the gender of the child, and cultural inheritance as a level on which parents value their education of children. Parents spend money and time in "human capital" for children, including by doing investment in their education, but also through the purchase of health facilities good neighbors, and other "inputs" which leads to improvement in the future well-being of children. A lot of parents think about how much to invest in their children education is determined by their capability to finance in investment. The returns from the investment in children depend upon the biological inheritance, so they can also affect the total amount parents are eager to invest. Standards for parents and their values will also affect their desire to spend for their children (Tasnim et al., 2023).

Ordinary hypothesis brings up a question about the degree of states of mind, qualities, and practice of the guardians is a reaction to poverty is not a reason of poverty. Assume that a few guardians fall on hard and troublesome circumstances because of misfortune. Because of unemployment and low expectation for everyday life, they end up noticeably irritated from middle-income class standards and children, thus, depend on the flawed behavior of their parents (Xu & Xu, 2019). As a result, it has low chances of achievement in children. In this example, the parental behavior is a response to poverty, not a cause of poverty. If the values, attitudes, and behaviors of parents change very quickly in response to higher profits, income transfers may change the interaction between parent and child, and therefore the interest of the children. Investment model suggests that increases in the income of parents lead to buying goods and services more specifically for children, and this, in turn, improves the results of the child. In which it includes computers, better schools, education, and travel and high-quality accommodation in the best areas. Research shows that by an increase in income, families live in large houses that are in the best condition and in the best neighborhoods. Consume more money on food, eating in restaurants; possess more cars and other durables, however, bettering the living environments do not seem to have a significant impact on the child's outcome (Meyer & Sullivan 2003).

Parental education plays a major role in children education as it will affect their outcome performance in education as well as in daily life. The level of parental education is an important indicator of educational as well as in behavioral outcomes for children (Goldstein et al., 2005; Nagin & Tremblay, 2001; Duncan & Brooks-Gunn, 2000). A plenty of literature has concentrated on the effects of parental background on children's outcomes, such as education, health cognitive skills, and income later (Black & Devereux, 2010). Parents can influence the decisions and behavior of their children through hereditary transmission, environment and preferences as observed most of the time more educated and richer parents can provide the best environment for their children, this creates inequality which is an important point of attention (Mclachlan et al,. 2013).

H_1. There is a significant impact of household characteristics on offspring schooling in the study area.
H_2. There is a significant impact of belief in tribal norms on offspring schooling in the study area.
H_3. There is a significant impact of belief in tribal norms on offspring schooling in the study area.
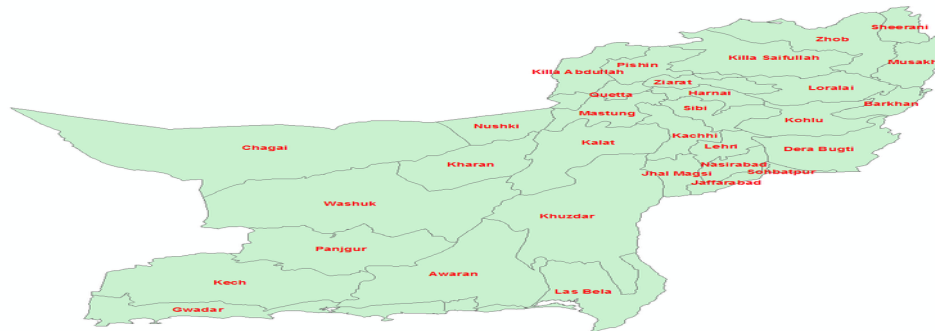

Figure 1: Map of Balochistan

3 | METHODOLOGY

3.1 | STUDY AREA

The present study was conducted in Balochistan Province. Hence the survey was conducted in different districts of Balochistan in rural and urban areas. These districts namely, Quetta, Ziarat, Pishin, Mastung and Dera Bugti were purposively selected. Form these 5 districts, 3 districts were selected as neighboring districts of provincial capital Quetta and a far flung district Dera Bugti was selected to grasp distance comparative results.

3.2 | SAMPLING AND DATA COLLECTION

For this study five different districts were selected using multistage cluster sampling technique. A total 500 questionnaires were administered from these districts, later after processing the collected data 490 sample respondents (household heads) were found suitable for analysis and were selected for data analysis. From each district 98 respondents were interviewed in person. Moreover, basic demographic, income and expenditure information was inquired and detailed information about food and non-food items were recorded. However, the selection of variables was adopted by following some related studies, (Sekhampu, 2013; Pradhan, 2012).

3.3 | ECONOMETRIC APPROACH

For analyzing the collected data, two stages least squares (2SLS) method was adopted to avoid the problem of endogeneity and instrumental variable technique. When using large-size samples, the results of the 2SLS estimate are more effective than ordinary least squares (OLS). The following variables were used i.e. *Pedu*, *edureperc,btnrmdecm*, *exputilities*, *nchh* as instruments for the endogenous variable. Two stages least square (2SLS) method was adopted and formulated as follows;

$$Y = Xe_x\beta e_x + Ve_n\beta e_n + e \qquad\qquad ….. (1)$$
$$Ve_n = Xe_x\Gamma e_x + X_{iv}\Gamma_{iv} + E \qquad\qquad ….. (2)$$

Where;

Y=n×1 vector dependent variable.
Xe_x=n× ke_x matrix of exogenous repressors variables.
$\beta e_x = ke_x \times 1$ vector of included exogenous parameter.
$Ve_n = $ n× ke_n matrix of endogenous regressor variables
βe_n=$ke_n \times 1$ vector of endogenous regressor parameter.
e: n×1 vector of error.
Γ=[**Γe**/**Γi**v] ($k$ex + $k$iv) × $k$en   Matrix of Parameters.
E: n×ke_n matrix of error.
For this study we employ 2SLS following NCSS statistical software

$$OFL = \alpha + \beta 1 IHH + \beta 2 PE + \beta 3 EDUREPERC + \beta 4 BTN + \beta 5 NCHH + \beta 7 MRDECM + \beta 8 Exputlities + e$$
$$….. (3)$$
$$OEL = \alpha + btne_{btn}\beta e_{btn} + HHIe_{HHI}\beta 2e_{HHI} + e \qquad ….. (4)$$
$$Lnhhmin = btne_{btn}\Gamma e_{btn} + btn_{lnmin}\Gamma_{lnmin} + E \qquad ….. (5)$$

Where:

OFL: Offspring schooling
IHH: Income of the household
PE: Parents Education
EDUREPERC: Parental Perception of education
BTN: Belief in tribal norms
NCHH: Total number of children in household
MRDECM: Mother role in decision making regarding time allocation
Exputilities: Total expenditure on utilities.
∝: Intercept
β_1: The parameter for IHH
β_2: The parameter for PE

β_3: The parameter for EDUREPERC
β_4: The parameter for BTN
β_5: The parameter for NCHH
β_7: The parameter for RMDECM
β_8: The parameter for Exp_utilities.

3.4 | DIAGNOSTIC TESTS

As we are using ordinary least square (OLS) method before analysis the data was checked for the assumptions of OLS. For instance linear in parameters, the independent variable household monthly income was found non-linear, therefore it was tested for the linearity. Findings indicated that it should be used in the log from. The results of the linearity test are shown as figure-1in the appendix section.

3.5 | MULTICOLLINEARITY TEST

Dependent and independent variables are checked for the multicollinearity and we found that there is no multicollinearity in the variables.

3.6 | REGRESSION ANALYSIS

For the selection of regression analysis for monthly household income which is not exogenous variable. Therefore to overcome the problem of endogeneity two stage least square (2SLS) regression method is used.

4 | RESULTS AND DISCUSSION

Table1
Results of the Econometric Analysis

Variables	Coefficients
Schooling education (dependent variable)	
Log of household minimum income	48.06***
	(6.34)
Education religious perception	17.94***
	(1.46)
Belief in tribal norms	-21.40***
	(2.577)
Mother decision making in time allocation	7.33***
	(2.83)
Number of Children in household	-3.447***
	(.574)
Total expenditure on utilities	-.006***
	(.001)
Mother education	1.6833***
	(.6901)
Cons	-413.2
	(59.03)

Log of household minimum income
*Note: Standard errors are given in parenthesis, ** and * indicate the significance levels at 1 and 5 %, respectively.*

The effect of one percent increase in household income tend to increase schooling education by 48.06 percent the value shows that the effect of hhmin on schooling is significant. The effect of one unit increase in household members tend to increase schooling education by 17.94 percent the value shows that the effect of edureperc on schooling is significant.according to the study by (Tansel, 1997) shows a positive significant effect of income over eucation. in this stuy urban areas eucation is 78 percent with the income level as 25 percent which means the subsidy can be provided to the rural areas for spending in expenses of admission and other facilities.The effect of one unit increase infamiles who belief in tribal norms tend to increase schooling education by -21.40 percent the value shows that the effect of btn on schooling is negatively significant.

The effect of one unit increase in mother role in decision making tend to increase schooling education by 7.33 percent the value shows that the effect on schooling is positive and significant. its also shown in the study by (Goksel, & Akbay, 2008). Education of mother bachelor education is 15 percent wit respective effect on children to 78.3 percent attaining schooling in urban areas. The effect of one unit increase in a number of children in household tend to decrease schooling education by -3.44 percent the value shows that the effect of nchh on schooling is negative.this result also shown in the study by (Maurin, 2002). child labour in rural areas is 24 percent showing chilrren is paying the cost of getting education by doing work.

The effect of one unit increase in expense utilities tends to increase schooling education by-.006 percent the value shows that the effect of exputilites on schooling is insignificant. The effect of one unit increase in mother education tend to increase schooling education by 1.683 percent the value shows that the effect of medu on schooling is positive and significant. its also shown in the study by (Chavelier et al., 2013) finding shows that in urban areas the mother education is 15 percent with education of children 78 percent in urban areas. According to the results of this study variable log of household minimum income is positive and significant (Maurin, 2002) in study the impact of parental income on early schooling transitions finds a significance relation between income and held back in school. Similarly, Zhan and Sherraden (2009) have found a positive statistical significant relation with education and parent expectation and household income.

The perception of impact of education on religious belief has a positive and significant effect of schooling, whereas the belief in tribal norms has a negative and significant result in this study on offspring education. On the other hand, previous studies found some mixed effect of culture and schooling outcomes, (Ghedabna, 2015).This study finds a positive significant effect of mother role in decision making on offspring schooling, these findings are similar with the results of (Aldashev et al., 2012;Goksel,2008). Whereas, the results of the study show that there is a negative effect of number of children in household on the offspring schooling and Maurin (2002) found similar results in his study. The variables, such as mother's and father's education show a positive and significant effect on the offspring's schooling, similar results had shown in in the previous studies done by (Guryan et al., 2008).

5 | CONCLUSION AND RECOMMENDATIONS

This study analysis the relationship between income and education and the assets that play the role in education is discussed and how they both are interrelated with each other.Another focus is on the relationship between culture and education, how it affects learning. What problem do the children face in finding differences in home culture and environment and classroom environment and how it affects their learning in addition, what are the differences the culture causes with the different learning environment.

Another aspect of this study is to see how the transfer of preferences attitudes and behaviors that are transferred to children.The investment strategies of parents that form offspring preferences in the field of study. How expectations of parents from children increases and why their income inequality prevails mismatch of culture in the school environment and home environment parent spending time with children in gaining high outcomes are the main points that are the focus of this study.

According to the result of the 2sls regression of the given model has to be significant according to which parents' education, the effect on the schooling of offspring is less significant education religious perception is the more significant effect on schooling whereas beliefs in tribal norms effect negatively on schooling. When a mother has any role in decision making regarding time allocation has a less significant effect on offspring schooling. Minimum household income has an insignificant impact on the schooling of children; household members also have a negative significant effect on schooling. An important variable among other independent variables in term of its importance is education religious perception afterward mother role in decision making and then parent's education.

That plays the main role in schooling education of children. Whereas the mothers' education has less importance according to our findings but it is proved that when the mother has power in decision making they give more importance to their children's education. One can conclude that income does not play an efficient role in the fathers' education and an increase in parents' education and children's school contribute positively to achieve their goal and the positive effect will be greater for children's education. Pakistan Gini coefficient was 29.6 in 2010 which is lower than all other countries the result of this study shows that income inequality has a negative impact on educational attainment of children. Whereas the nchh (number of children in the household is also not significant showing it has

not any effect on the attainment of education of children. The degree of religiousness in relation to educating the children does have a positive influence on educating the children to infect those people according to findings who are less religious and doesn't pray regularly gave more importance on the education in comparison to those who pray regularly.

Parental education has a positive impact on the enrollment of children, this inherited parental education and its implications for social mobility and lack of social economic equality provides encouragement to raise the current levels of education for the new generation, parent education also measured by income of family, the ability of parents to oversee the children's education and opportunities for children to learn. When regression is run including the dummies variables of Baluchistan, Punjab, and KPK, however, shows a negative impact on the schooling of offspring. These results are important in making the future educational policies and of best interest to the educational planner, particularly for developing countries. Although some of the variables are missing in terms of, this study neglected to estimate the impact of other forms of savings and investment in education spending and the impact of migration to rural areas. On the basis of findings, it is recommended that the policymakers and government of Baluchistan in education sectors should take these steps for the further growth in primary as well as in secondary education to increase the enrollment in the schooling of children. It is suggested that similar research should be taken place in other provinces. So they could also recognize the importance to make analyses in their state of science education in their own secondary schools, so that if problems are found with the similar kind of deficiencies, a concerted effort taken to improve science education in all secondary schools and college level in the country.

6 | STUDY LIMITATIONS

This study is limited to the five district of Balochistan that can be extended to the remaining district for the in-depth view of the education inclusion. Moreover, limited household characteristics are taken for analysis and future work use additional household variable like average adult education, age, risk aversion and household wealth.

Conflict of Interest: There is no competing interest

REFERENCES

Black, S. E., & Devereux, P. J. (2010). Recent developments in intergenerational mobility. *Thesis National Bureau of Economic Research Massachusetts.*

Clarke, A. (2007). *Te handbook of school management.* Cape Town: Kate McCallum.

Duncan, G.J. & Brooks-Gunn, J. (2000), Family poverty, welfare reform, and child development. *Child Development, 71*, 188-196. https://doi.org/10.1111/1467-8624.00133

Đurišić, M., & Bunijevac, M. (2017). Parental involvement as a important factor for successful education. *Ceps Journal*, 17(3), 137-153.

Gertler, P. J., Martinez, S. W., Rubio-Codina, M., (2012). Investing cash transfers to raise long-term living standards. *American Economic Journal: Applied Economics, 4*(1), 164–192.

Ghedabna, L., (2015). The relationship between government expenditure and economic growth in Algeria: An empirical study of the period 1990-2012. *Jordan Journal of Economic Sciences, 2* (1), 71–85

Goksel, A., & Cuma, A. (2008). An econometric analysis of urban households' animal products consumption in Turkey, *Applied Economics, 40*, 15, 2029-2036, DOI: 10.1080/00036840600949256

Goldstein, S. E., Davis-Kean, P. E., & Eccles, J. S. (2005). Parents, peers, and problem behavior: A longitudinal investigation of the impact of relationship perceptions and characteristics on the development of adolescent problem behavior. *Developmental Psychology, 41*(2), 401–413. https://doi.org/10.1037/0012-1649.41.2.401.

Guryan, J., Erik H., & Melissa, K. (2008). Parental Education and Parental Time with Children. *Journal of Economic Perspectives*, *22* (3), 23-46. DOI: 10.1257/jep.22.3.23

Ho, E. S. (2009). Educational leadership for parental involvement in an Asian context: Insights from Bourdieu's theory of practice. *The School Community Journal, 19*(2), 101–122.

Katy, B., & William, D. (2023). Using schooling decisions to estimate the elasticity of marginal utility of consumption. *Journal of Public Economics*, 224

Liao, L., Du, M., Wang, B., Yu, Y., (2019). The impact of educational investment on sustainable economic growth in Guangdong, China: a co integration and causality analysis. *Sustainability, 11*(3), 766

Maurin, E. (2002). The impact of parental income on early schooling transitions: A re-examination using data over three generations". *Journal of Public Economics*, *85* (3), 301-332.

McLachlan, R., Gilfillan, G. & Gordon, J. (2013). Deep and persistent disadvantage in Australia, rev., Productivity commission staff working paper, Canberra.

Mensah, F. K., & Kiernan, K. E. (2010). Gender differences in educational attainment: Influences of the family environment. *British Educational Research Journal, 36*(2), 239-260.

Meyer, B. D., & Sullivan, J. X. (2003). Measuring the well-being of the poor using income and consumption.NBER Working Paper No. 9760 June 2003 JEL No. D12, I32.

Michal, K., (2014). How taxes and spending on education influence economic growth in Poland. Contemp. *Econ. 8* (3), 329–348.

Nagin D.S., & Tremblay, R.E. (2001).Parental and Early Childhood Predictors of Persistent Physical Aggression in Boys from Kindergarten to High School. *Arch Gen Psychiatry. 58*(4):389–394. doi:10.1001/archpsyc.58.4.389.

Pradhan V. (2012). Response from the author. *Statistical Methods in Medical Research*. *21*(6):665-667. doi:10.1177/0962280212440534

Quetsch, L.B., Jackson, C.B., Onovbiona, H., & Bradley, R. (2022).Children and youth services review .*Children and Youth Services Review, 136* (2022) 106437.

Richardson, S. A. (2009). Principal's perceptions of parental involvement in the "big 8" urban districts of Ohio. *Research in the Schools, 16*(1), 1–12.

Sekhampu, T. (2013). Determinants of poverty in a South African township. *Journal of Social Sciences. 34*. 145-153. 10.1080/09718923.2013.11893126.

Sianesi, B. and Reenen, J.V. (2003). The returns to education: macroeconomics. *Journal of Economic Surveys, 17,* 157-200. https://doi.org/10.1111/1467-6419.00192

Tansel, A., Gungor, N., (2013). Gender effects of education on economic development in Turkey. *J. Econ. Stud. 40* (6), 794–821.

Tasnim, M. M., Mukt, A.,, Akter, R., Alam, T., Khan M. H., & Hossain, R. (2023). Role of school preparedness on children's in-person schooling decision during Covid-19 pandemic in Bangladesh. *Clinical Epidemiology and Global Health, 20.*

Valenzuela, J., Crosby, L. E., & Harrison, R. R. (2020). Commentary: Reflections on the COVID-19 pandemic and health disparities in pediatric psychology. *Journal of Pediatric Psychology, 45*(8), 839–841. https://doi.org/10.1093/jpepsy/jsaa063

Vernez, G., Karam, R., & Marshall.J.H. (2012). Implementation of school-based management in Indonesia. Monograph. Santa Monica, CA: RAND Corporation.

Xu D, Xu Y. (2019). The promises and limits of online higher education: understanding how distance education affects access, cost, and quality. *Am EnterpInst [Internet]*; 2019, 1–40. Available from: https://www.aei.o

Zhan, M., & Sherraden, M. (2009). Assets and liabilities, educational expectations, and children's college degree attainment (CSD Working Paper No. 09-60). St. Louis, MO: Washington University, Center for Social Development.
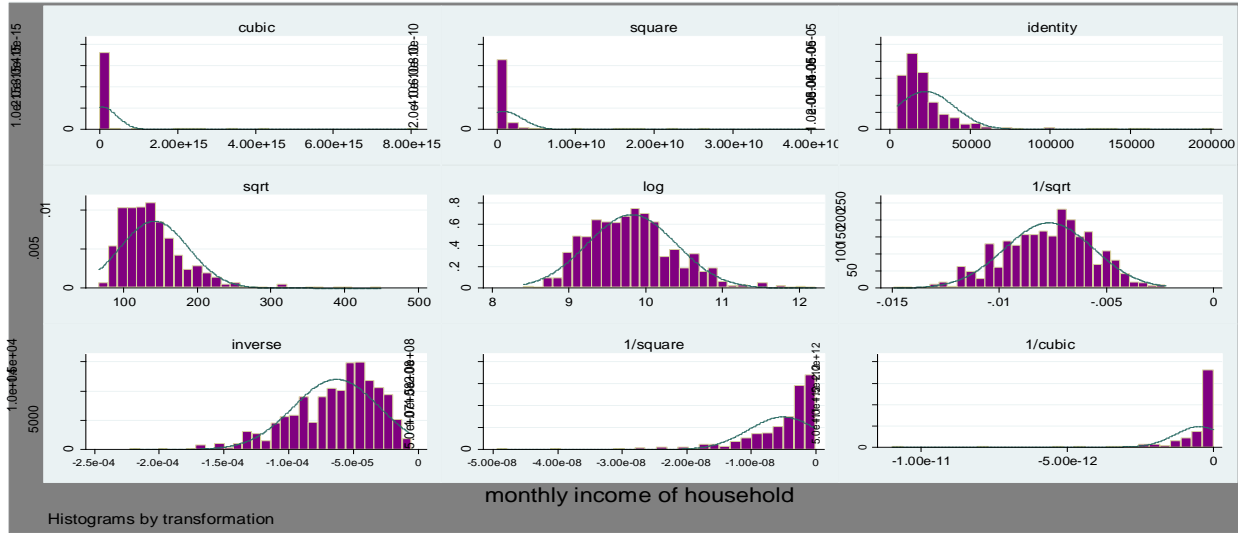
Figure 2: Self Authored