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Socioeconomic and Demographic Factors of Household Expenditures: A Case Study of Southern Punjab (Pakistan)

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ABSTRACT

The household expenditures are the main source of society well-being and welfare. The examination of socioeconomic and demographic determinants of Household Expenditure in Southern Punjab is the major objective of the study. The primary data of 785 households is collected in Southern Punjab. The estimation analysis is based on the Ordinary Least Square (OLS) methodology. The age of household head, years of schooling, household size, Remittances, value of assets, number of earners, distance of health center from household residence, distance of school from household residence have positive effect on household monthly expenditures in Multan division, D.G Khan division, Bahawalpur division and Southern Punjab. The households which belong to informal sector have negative relationship with monthly household expenditures in all three divisions and Southern Punjab. The association between area of residence and monthly household expenditures is positive in all three divisions and Southern Punjab. The result shows that households live in urban areas of Southern Punjab have more expenditure as compared to rural areas. The presence of disease and household's expenditures are negatively related to each other in Southern Punjab. Therefore, this study suggests that health facilities should provide at large scale in various divisions of southern Punjab.

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1. Introduction

Household expenditures are commonly used by social researchers and government planners to estimate income (Cotton et al., 1999; Wodon, 1997; Sutanto et al., 1999; Pradhan et al., 2001). The expenditure data is commonly used to determine the level of income necessary to meet basic needs (Spector, 1992). The conventional and preferred indicator to measure well-being is expenditure method that is to estimate resources available for the household. It is more reliable than household income and reflects long-term welfare levels more accurately (Streeten, 1998). The expenditures of the household can be classified into expenditure on food items, non-food items, non-durable goods and services and on durable goods and services. These categories of expenditure can be further classified into more categories.

Food expenditure consists of expenditure on meat poultry and fish, milk and milk products, vegetables, fresh fruits, sugar, condiments and spices, non-alcoholic beverages, honey and sugar preparations, pulses, readymade food and drinks etc., edible oils and fats, cereals, baked and fried products, tea and coffee. The modern food industry is built on

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convenience foods and most of the expenditure shares refer on the expenditure on convenience foods (Capps et al. 1985).

The socio-economic and demographic characteristics of households described the patterns and the nature of expenditures on food. For example, determinants of expenditure on fish, meat and rice in UAE are investigated by Gheblawi and Sharif (2007). They explored that household size and income are the factors which affect the money spent on fish, rice and meat. On the other side, changes in households' incomes were not highly responsive for food items in context of expenditure. The expenditures per capita in Pakistan were 1658 U.S dollar in 2018. The household expenditures depend on the household size or number of dependents. There are many studies which have used Engel function and some of them have used Cobb-Douglas type of Engel function (Houthakker, 1957; Crocket, 1960; Liviaton, 1964; Iyengar, Jain and Srinivasan, 1975).

In some households, females are also part of labor force. The women participation in the households may ensure higher propensity to purchase certain items. The number of children in a household has significant and positive relationship with household expenditures. The main purpose of this study is to investigate the factors that are responsible for determining household expenditures, taking the overall Southern Punjab as well as three divisions as separate analysis. This research paper is arranged as, first section is about introduction. The review of the renowned studies is discussed in second section. The third section provides the interpretation of data and methodological issues. The results are discussed in the fourth section of the study.

2. Literature Review

Davis et al. (1983) utilized the log-log (double logarithmic model) functional form to exert the association of socio economic indicators including expenses on food and discriminated households with their incomes. The results reported that the existence of favorable significant affiliation among income of households, size of family, food program participation and expenditures on food items. The educational knowledge is not reported of the existence of any significant affiliation between academic knowledge and food expenses. Furthermore, the knowledge of the household related with nutrient intake is significantly affected the food acquiring choices.

Similarly, Tin et al. (2006) investigated those household expenditures of health in lower income society**.** The data of 800 households were collected during 2000–2001 from Health District Household Survey. The multivariate logistic regression method for analysis was used. The study documented that the determinants of catastrophic health expenditure are household health care utilization, especially for modern medical care, economic status, illness episodes in an adult household member and presence of a member with chronic illness.

Moreover, Dang (2007) explored the determinants and impact of private tutoring classes in Vietnam. The Vietnam Living Standards Survey 1997-1998 and 1992-1993 was used for estimation. There is no gender discrimination on private tutoring expenditure and ethnic minority students spent less on private tutoring was investigated.

Furthermore, Aslam (2008) examined the allocation of the intra household resources in Pakistan. The Engel curve approach was used to explore relationship between male and female ratio of the educational expenditures. It was investigated that the female had lesser schooling expenditures on secondary level as compared to male and the level of expenditures were mostly equal between male and female.

In the same line, Megumi, O (2009) established the affiliation between household's expenditure on siblings and sociological disparities. The results of the study confirmed that the siblings with both parents were in advantage. It is further explained that the disparity found in results was dependent on education and knowledge of the parents and independent of the marital status of the siblings*.*

Similarly, Aslam (2010) through extracting the Pakistan Integrated household Survey (PIHS) data for Pakistan for the period of 2001 and 2002 organized the study to answer the

two questions about the interrelationship that might exist between household educational expenses and gender gaps. The study provided the evidence for the applicability of Engle law for the selected economy. There is significant affiliation between male and female educational expenditures. The relationship was confirmed just for the backward rural regions of the Federally Administered Tribal Areas (FATA), North-West Frontier Province (NWFP) and for Baluchistan province. Furthermore, it is confirmed that nationally has no significant effect of gender disparities on educational expenses.

Paul et al. (2011) examined the specific characteristics that have strong positive impact on the education and school time in developing countries to spend more on schools and education. It was documented that the availability of furniture and teacher education had significant positive impact while the school time and teacher characteristics had insignificant impact.

Huy (2012) explored the factors that affected the personal expenses on sibling education in Vietnam. It is observed that household expenses on education have positive ad significant effect on household earnings. The study documented that family head status of professional education have the positive impact on educational expenses of children. Moreover, it was prescribed that children school age proved itself a strong determinant of educational expenditure of the individuals. The families with improved standard of living are able to devote sufficient sources for their sibling education.

For instance, Abolhallaje et al. (2013) explored the factors affecting catastrophic health expenditures in Iran. The household expenditure survey was conducted. The household equality and inequality conditions of the distribution of risk of financing, socio-economic status and economic aspects of health are the main factors that are explored which affected the household catastrophic health expenditure in Iran.

Similarly, Khan (2014) utilized the primary and secondary data extracted from the ministry of finance government of Pakistan and established the affiliation between household consumption and income for the period 1980-2012. The results based on the secondary data confirmed the applicability of Keynesian psychological law of expenditure. The expenditure is a positive function of the household earnings. The parameter for the Keynesian law of consumption was highly significant at 1% level. The documented specific value is 0.86 which revealed that one-unit change in earnings of the households would enhance 0.86 units in expenditure of the households.

Moreover, Daniels and Glorieux (2015) explored the affiliation between food expenditure habits and the family system, knowledge with working and non-working families utilizing the data from statistics of Belgium for the year 2005. The results confirmed that the expenditure patterns of the families heavily depended on family and life structure and on the social position of the families. It is reported that a single man (particularly single living household) looked non-convenient to devote greater share of their earnings on food ingredients. They found convenient for food preparation patterns while household having couples and their siblings found less convenient in their food preparation.

Baek (2016) investigated the affiliation among the internet service and mobile phone expenses and the existing expenditures of the households for South Korean economy for the period 1998-2014. The study collected the average monthly expenditures and determined both short run and long run linkages among the selected proxies. The results showed that demand for mobile and internet services are income elastic. Their demand is more sensitive to change in income pattern and living standard of the households. Complementarity is observed among the custom, person's education status, booklet and the pioneer period of phone and internet service.

Similarly, McCracken and Brandt (2016) examined that previous studies provided different determinants of household income and consumption outside the house. The study documented that the significance of these determinants depend upon the availability of eatables and different publicity related to food facility. The size of household, their income and the time of purchase are heavily dependent on the availability of food facility to determine household expenditure away from home.

Arapova (2018) investigated the factors effecting on the expenditures of Asian countries by using panel data of the period from 1991 to 2015. This study was based on contemporary social and demographic trends and stimulating household consumption expenditures and variables were regressed. The results of the study explored that the rate of unemployment was the lowest in Thailand among the Asian countries but fiscal and monetary instruments were most efficient. It was concluded that there is high share of working population in Republic of Korea.

Honea & Marisennayya (2019) explored the Determinants of Household Consumption Expenditure in Ethiopia. The data of 100 respondents was collected through interviews and regressed through multiple linear regression models. It was concluded that family size and disposable income (most determinant factor of expenditure) had positive relationship with household expenditures.

Heshmati et al. (2019) explored the Household Poverty and Consumption Expenditure determinants of Indian household. Ordinary least square (OLS) was used to explore the impact of socioeconomic variables on monthly per capita expenditure. Conditional quantile regressions and conditional mean least squares (LS) regressions were used for estimation. It was suggested that casual labor in urban areas and agricultural labor in rural areas should be most targeted to alleviate poverty.

Hartoyo et al. (2020) analyzed expenditure and income of household farmers of Boyolali District. The data was collected through survey technique from the household farmers of Boyolali District in March 2020. It was found that rice production and farmers' education were the core factors which effect on expenditure and income of household. It was suggested that there was need of management of rain fed lowland and upland fields; as a result it will uplift household income and welfare.

Habanabakize (2021) determined Consumption Expenditures of household by using quarterly time series data from 2002 to 2020. Exchange Rate Volatilities, Petrol Price and Disposable Income were used as determinants of household expenditures of South African household. It was explored that there existed long run relationship between household expenditures and all independent variables which were used in the model. It was suggested that there should be policies by the government which can enhance the household income and exchange rate, reduce inflation, new job creation and improvement in production.

Łyszczarz & Abdi (2021) explored associations between socio-economic factors and OOP health spending of 16 Polish regions of Poland by taking the panel data from 1999 to 2019. Monthly Out Of Pocket health expenditure per person of Polish households was regressed on number of children, age, healthcare supply , life expectancy, sports participation, tobacco and alcohol expenditure , unemployment rate and air pollution and there was significant and positive impact of Monthly Out Of Pocket health expenditure on other independent variables. It was suggested that there should be national guide lines to improve financial protection for vulnerable groups and health-care allocations.

3. Data and Model

This study is based on the primary data taken from 785 households of Southern Punjab. The three divisions of Southern Punjab are selected for the collection of data namely, Multan Division, Bahawalpur Division and Dera Ghazi Khan Division. To explore socioeconomics and demographic determinants of household expenditures in the three divisions of Southern Punjab, functional form of the model is specified as follows:

$$HHEXP = f\begin{pmatrix} AGEHH, YOSHH, HHSIZE, SOEMP, WSOS, RIMI, AREA, LNASTS, NOERN, \\ POD, DISTHC, DISTS \end{pmatrix}$$

The econometric form of the above functional form is given as follows:

$$HHEXP = \begin{bmatrix} f_0 + f_1 AGEHH + f_2 YOSHH + f_3 HHSIZE + f_4 SOEMP + f_5 WSOS + \\ f_6 RIMI + f_7 AREA + f_8 LNASTS + f_9 NOERN + f_{10} POD + \\ f_{11} DISTHC + f_{12} DISTS + f_i \end{bmatrix}$$

The questionnaire has various types of questions in dichotomous and continuous form. The selected variables are enlisted as follows:

Table 1: List of Variables and Its Description

Variables	Variables Description	Unit of Measurement
	Dependent Variable	
HHEXP	Total Household Expenditures on goods and services	Rupees
	Explanatory Variables	
AGEHH	Age of Household Head	Years
HHSIZE	Household Size	Numbers
AREA	Area of Residence	1 = Urban Area 0 = Otherwise
YOSHH	Completed Years of Schooling of Household Head	Years
RIMI	Remittances received by the Households	1 = Received 0 = Otherwise
NOERN	Number of Earners in Households	Numbers
WSOS	Working Status of Spouse	1 = Working 0 = Otherwise
LNASTS	Value of Assets (Land, Car, House, Property, TV, Tractor….)	Log of Income
SOEMP	Status of Employment in Formal Sector	1 = Employed 0 = Otherwise
POD	Presence of diseases in Household	1 = Yes 0 = Otherwise
DISTHC	Distance from House to Health Care Center	Kilometers
DISTS	Distance from House to School	Kilometers

4. Result and Discussion

In the table 2, OLS (Ordinary Least Square) estimates of household monthly expenditures of Multan division, DG khan division, Bahawalpur division and Southern Punjab are presented. The first column of the table represents the variable names. The second, third, fourth and fifth columns represents the OLS estimates of the Multan division, the DG Khan division, the Bahawalpur division and the Southern Punjab respectively. The socio-economic and demographic determinants of household expenditures in all three divisions and Southern Punjab are comparatively analyzed in table 2. The age of household head, years of schooling, household size have positive and significant impact on household monthly expenditures in all three divisions and Southern Punjab.

Similarly, informal sector has negative and significant effect on monthly household expenditures in all three divisions and Southern Punjab. The household remittances have positive and significant impact on monthly expenditures in all three divisions and Southern Punjab. Moreover, the presence of disease and sector of employment have negative impact on monthly household expenditures where presence of disease has insignificant and sector of employment has significant relationship with monthly household expenditures in all three divisions and Southern Punjab. The impact of area of residence on household expenditures is positive in all three divisions and Southern Punjab. However, the impact for DG Khan and Southern Punjab is significant while this impact is insignificant for Bahawalpur and Multan divisions.

The households living in urban areas of southern Punjab have more expenditure as compared to rural areas household. Similarly, value of assets has positive and significant impact on monthly household expenditures for all three divisions while this effect is insignificant only for Southern Punjab. The households that have more valued assets also have more monthly expenditures. The number of earners also has positive and significant effect on monthly household expenditures in all three divisions and Southern Punjab while this effect is

insignificant for Bahawalpur division and Southern Punjab. The impact of residence distance from health center on household monthly expenditures is positive and significant for all three divisions and Southern Punjab except for Multan and Bahawalpur divisions which have insignificant impact. Moreover, the effect of school distance from household residence on monthly household expenditures is positive and significant for all three divisions and Southern Punjab.

Table 2: Socio-Economic and Demographic Determinants of Household Expenditures

Variable	Multan Division	DG Khan Division	Bahawalpur Division	Southern Punjab
Constant	8.054**	8.634**	8.281**	8.445**
	(26.581)	(20.889)	(27.132)	(46.235)
AGEHH	0.009**	0.009*	0.005*	0.009**
	(3.465)	(2.410)	(2.183)	(5.574)
YOSHH	0.030**	0.044***	0.019**	0.031**
	(3.675)	(1.910)	(2.802)	(7.309)
HHSIZE	0.092**	0.038**	0.067**	0.060**
	(6.022)	(3.897)	(5.118)	(6.589)
SOEMP	-0.174*	-0.497**	-0.216**	-0.263**
	(-2.351)	(-5.349)	(-3.850)	(-6.875)
WSOS	0.249**	0.070	0.203**	0.195**
	(3.282)	(0.620)	(2.659)	(4.161)
RIMI	0.248**	0.152	0.098	0.188**
	(3.179)	(0.985)	(1.240)	(3.535)
AREA	0.091	0.122**	0.094	0.091*
	(1.543)	(2.590)	(1.593)	(2.469)
LNASTS	0.079**	0.090	0.098**	0.067**
	(4.189)	(0.870)	(4.895)	(5.936)
NOERN	0.058***	0.128	0.007	0.059*
	(1.883)	(1.412)	(0.259)	(3.079)
POD	-0.017	0.024	0.033	0.007
	(-0.226)	(0.981)	(0.536)	(0.165)
DISTHC	0.003	0.018***	0.010	0.008***
	(0.414)	(1.690)	(1.515)	(1.767)
DISTS	0.023*	0.055*	0.020*	0.020**
	(2.432)	(2.779)	(2.376)	(3.313)
R-squared	0.555	0.412	0.438	0.454
Adjusted R-squared	0.533	0.381	0.412	0.446
F-statistic	25.192	13.694	17.441	53.539
Prob (F-statistic)	0.000	0.000	0.000	0.000
Sample Size (N)	255	248	282	785

Note: The values in parenthesis are t-statistics values where *, **, ***are 1%, 5% and 10% significance levels respectively.

5. Conclusion

The household expenditures are the main source of society well-being and welfare. The examination of socioeconomic and demographic determinants of Household Expenditure in Southern Punjab is the major objective of the study. The primary data of 785 households is collected in Southern Punjab. The estimation analysis is based on the Ordinary Least Square (OLS) methodology. The results conclude that age of household head, years of schooling, household size, remittances, value of assets, number of earners, distance of health center from household residence, distance of school from household residence are positively affected the household monthly expenditures in Multan division, DG Khan division, Bahawalpur division and Southern Punjab. The households belong to informal sector are negatively related to monthly household expenditures in all three divisions and Southern Punjab. The area of residence is meaningful for monthly household expenditures because households which live in urban areas have more monthly household expenditures than the households that are lived in rural areas.

The presence of disease decreased the monthly household expenditures only for Multan divisions while others divisions have positive relationship in which presence of disease enhanced the monthly household expenditures. There are some policy suggestions. Government should enhance the health care centers in rural and urban areas that provide the health facilities to society which decrease the monthly household expenditures. This policy will enhance the productive capacity of society and resultantly, people will participate more in productive jobs. Similarly, government should establish more educational centers in rural areas so that they save money and time for productive work.

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