

Consumption Patterns of Male & Female Headed Households in Pakistan: Evidence from PSLM 2007-08

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I. Introduction

Recent years have witnessed growing interest in analyzing the welfare outcomes of female headed households (FHHs) in the developing world. The theoretical argument for examining female headship and family welfare is underpinned by two important considerations. The first concerns households' access to resources, while the second pertains to control over the allocation of resources within the household (DeGraff and Bilsborrow 1993). *A priori* female headed households are expected to have access to a lower level of resources than the conventional male-headed households for a variety of reasons¹. However, this lower resource envelop experienced by female headed households may be partially offset by the way resources are allocated within such households. Several studies have revealed that resources under the control of women are more likely to be allocated for productive purposes that promote family welfare as compared to resource allocation under the control of men. In the context of Pakistan, the present paper aims to explore how resource allocation within female headed households differs from male headed households by examining the consumption patterns of both female and male headed households in the country.

The study will make use of the Engel curve framework, which shows the relationship between a household's expenditure on a particular good and total household income, holding prices constant. The Engel curve framework has been used in a large strand of empirical literature examining household consumption behaviour, for both the developed and developing countries, including Pakistan. In case of Pakistan, a large number of studies have examined household

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¹ For a detailed exposition, see Buvinic et al. 1983; Kossoudji and Mueller 1983; Chernichovsky 1985; Bruce and Dwyer 1988 and Rosenhouse 1988.

consumption patterns for Pakistan as a whole and/ or by its urban-rural regions². More recently, household consumption behavior across the four provinces of the country has also been investigated (Khan and Khalid 2011). To our knowledge, no study has so far examined separately the consumption behavior of female and male headed households in Pakistan.

An analysis of household budgets by gender of the household head is necessary as research from other developing countries shows differential patterns of consumption for households headed by females (Blumberg 1988, Handa 1996, Panda 1997, Seebens 2009, Yabut-Bernardino 2011, Michael et al 2010 and Dokah and Amikuzuno 2011). It is observed that female headed households tend to expend a proportionally higher share of their spending on more productive avenues, like human capital development (education, health) compared to the conventional male headed households. The present study will attempt to empirically test for the heterogeneity of household consumption patterns across female and male headed households across Pakistan, as well as by the urban rural divide within the country.

The paper will estimate average & marginal expenditure shares and expenditure elasticities at the national level and by urban/rural areas as well as by expenditure quintiles for these two sets of households, using data from a recent round of nationally representative household survey – the Pakistan Social and Living Standards Measurement Survey (PSLM) 2007-08. The study would make use of the 12 broad commodity groupings employed by Khan and Khalid (2010) to examine the consumption behavior and the analysis by consumption quintiles will illustrate how the consumption behavior differs by economic status for these two sets of household.

At the onset, it would be important to keep in mind that the analysis of consumption behavior of female headed households being presented is preliminary and stylistic, as women defined as household heads in traditional societies like Pakistan while being socially empowered³ may lack economic empowerment. Moreover, empirical evidence from developing countries clearly shows that female headed households are a heterogeneous group in terms of size, age structure, marital status and employment opportunities. An important distinction in this regard is whether the female headship of a household is *de facto* or *de jure* (Lampiettii and Stalker 2000). In *de facto*

² For an overview of the empirical research for Pakistan, see Khan and Khalid (2010).

³ An elder woman may be declared as the head of household out of respect by her family.

female-headed households, the husband is not present in the community at the time of the survey, but may still play an active role in supporting the household through remittances. On the other hand, in *de jure* female-headed households there is no adult male present with widows, divorced women, or unmarried women being the household heads. These caveats need to be kept in mind while drawing any policy inferences from the findings of this paper.

The layout of the paper is as follows: Section II presents the theoretical framework and methodology used in the analysis, while Section III discusses the data. Results are reported and discussed in Section IV. The analysis of consumption behavior of MHHs and FHHs by expenditure quintiles is presented in Section V. The final section presents the concluding remarks.

II. Theoretical Framework

The Engel curve is a demand function derived from a constrained utility maximization problem, which can be expressed mathematically as⁴;

$$E_i = \alpha_i + \beta_i Y + u_i \quad (1)$$

Where E_i = Expenditure on commodity $i = p_i x_i$;

Y = Total income

u_i = Random error term

This framework of analysis is underpinned by two important assumptions; i) all households face the same prices for each commodity, and ii) all households have the same underlying utility function. These assumptions are, however, quite strong and are likely to introduce bias in the estimated parameters. The limitations of these assumptions are discussed in detail in Khan and Khalid (2010).

⁴ The derivation of the Engel Curve is discussed in Khan and Khalid (2010).

Being derived from constrained maximization, the Engel curve has to satisfy the general restrictions of demand theory. With prices assumed to be the same across households when using cross section data, the restrictions in terms of price derivatives such as homogeneity, symmetry and negativity of own price effect cannot be tested. Only the ‘adding up’ condition is left to be tested, which in terms of the parameters of eq. (1) implies that α_i and β_i sum to zero and unity, respectively; i.e., $\sum \alpha_i = 0$ and $\sum \beta_i = 1$.

For the estimation of Engel Curve as outlined in equation (1), the choice of an appropriate functional form is also an important issue which has been the subject of many empirical studies. Various functional forms, which includes linear; semi-logarithmic, double logarithmic, etc; have been used in the literature, but consensus on the most appropriate form has not been developed. In this study, we make use of the linear and double-logarithmic forms which have also been used by Khan and Khalid (2010), to ensure direct comparability of results with the earlier study.

The household income and/ or consumption expenditure has generally been employed as explanatory variables in empirical work examining household consumption patterns. As household consumption is a preferred welfare indicator over household income in developing countries (Deaton 1997, Glewwe et al. 2001), this study would use household consumption expenditure as the explanatory variable in estimation of the Engel Curve equation. In addition, we would also use the household size as an explanatory variable to capture the effect of economies of scale in consumption in large households, which Houthakker (1957) has referred to as a combination of two effects – the specific effect and the income effect.

In this study, we use the household consumption expenditure and household size as explanatory variables to estimate the following linear and double log functional form of the Engel curve, respectively;

$$E_{ij}^q = \alpha_{ij}^q + \beta_{ij}^q E_j^q + r_{ij}^q HS_j^q \quad (2)$$

$$\ln E_{ij} = \theta_{ij} + \lambda_{ij} \ln E_j + \varepsilon_{ij} \ln HS_j \quad (3)$$

- where $j = 1, 2, \dots, k$ households
 $q =$ male, female sex of household head
 $i = 1, 2, \dots, n$ commodity groups

- $E_{ij}^q =$ Expenditure of j th household on i th commodity in q th headed household
- $E_j^q =$ Total consumption expenditure of j th household in q th headed household
- $HS_j^q =$ Household size of j th household in q th headed household
- $\beta_{ij}^q =$ Expenditure share of i th commodity in total household expenditure of households with q th head
- $r_{ij}^q =$ Change in expenditure on i th commodity of households with q th head
- $\lambda_{ij} =$ Expenditure elasticity of i th commodity with respect to total expenditure of households with q th head
- $z_{ij} =$ Expenditure elasticity of i th commodity with respect to household size for households with q th head

III. Data

The study is based on the micro data tapes of the Pakistan Social and Living Standards Measurement Survey (PSLM) 2007-08 conducted by the Federal Bureau of Statistics. This nationally representative survey consists of data on a sample of 15,512 households. Out of this sample, observations for 4 households having household size greater than 34 were dropped from analysis. Thus, the analysis carried out in this paper is based on a sample of 15,508 households across the urban and rural areas of Pakistan, out of which 14,275 households are male headed, while 1233 households are female headed (Table 1). Overall, the female headed households represent around 8 percent of the sample, with their share being slightly higher in urban areas at 8.4 percent, compared to the rural areas at 7.7 percent.

Table 1: Distribution of sample size, by gender and region

	Total	Urban	Rural
Overall	15508	6253	9255
Male	14275	5730	8545
Female	1233	523	710

In the second part of the paper where the analysis of consumption behavior of both male and female headed households is carried out by expenditure quintiles, the distribution of the sample by both set of households is given in table 2.

Table 2: Distribution of sample size, by gender of household head and expenditure quintile

	Male	Female	Total
Quintile 1	2736	366	3102
Quintile 2	2866	236	3102
Quintile 3	2896	205	3101
Quintile 4	2898	204	3102
Quintile 5	2879	222	3101
Total	14275	1233	15508

The examination of consumption patterns of male and female headed households is carried out for the 12 commodity groupings used by Khan and Khalid (2010). These consumption categories include food and drinks, clothing and footwear, fuel and lighting, housing, transport and communications, household effects, personal effects, health care, education, entertainment, durables and miscellaneous items. The details of commodities covered within each of the 12 groups are given in Appendix 1.

The survey data contains information on both the amount spent on purchase of a particular commodity as well as its imputed value in case it is self-produced and/ or received as gift in kind. For the purpose of this study, we group together both these two sets of information to get the total expenditure on each commodity, which is the amount spent on buying that commodity plus its imputed value.

Table 3: Average monthly household consumption expenditure (Rs.), by gender of household head and region

	Total	Urban	Rural
Male	13652.01	16908.95	11468.01
Female	12586.2	15976.07	10089.16

The average expenditure shares of the 12 groups of commodities for both male headed and female headed households are reported in Table 4a for overall Pakistan and in Table 4b for male and female headed households across both the urban and rural sectors, respectively. In both the tables, the results of the two sample t-test with equal variance are also presented to test for the significance of difference between the budget shares of MHHs and FHHs at the national level as well as by the urban and rural areas, respectively. Overall, expenditures on food and drinks, followed by housing account for the highest share of total household consumption expenditures for both male and female headed households at the national level. However, there exist statistically significant differences between the expenditure shares of male and female headed households in some expenditure categories, as shown by the two sample t-test. These include the higher budget shares of female headed households for education (3.72 percent vs. 2.51 percent), housing (14.85 percent vs. 12.87 percent), fuel and lighting (9.21 percent vs. 8.02 percent), clothing and footwear (5.78 vs. 5.46 percent) and household effects (0.72 percent vs. 0.6 percent) and lower average expenditures on food & drinks (44.25 percent vs. 48.34 percent) and transport and communications (4.28 percent vs. 5.72 percent), compared to their male headed counterparts. Female headed households are seen to be spending slightly more on healthcare also but the result is only significant at the lower 10 percent level of significance.

The urban-rural disaggregation of consumption patterns of male and female headed households reveals broadly similar patterns as observed at the national level (Table 4b). Compared to their male headed counterparts, female headed households spend significantly more, on average, on education, housing and fuel & lighting across both the urban and rural areas of the country, while female headed households residing in rural (urban) areas spend significantly more on clothing & footwear and household effects (entertainment). Average expenditure shares of female headed households on food & drinks and transport & communication are significantly lower than those of their male headed counterparts across both the urban and rural sectors.

Table 4a: Average expenditure shares for different commodity groups, by gender of household head (overall)

Commodity groups	Male-headed	Female-headed	t-test
Food and drinks	48.34	44.25	11.17*
Clothing and Footwear	5.46	5.78	-4.63*
Fuel and lighting	8.02	9.21	-10.02*
Housing	12.87	14.85	-6.89*
Transport & Communications	5.72	4.28	9.98*
Household effects	0.60	0.72	-3.05*
Personal effects	3.55	3.57	0.44
Healthcare	3.50	3.73	-1.89
Education	2.51	3.72	-9.19*
Entertainment	0.54	0.55	-0.36
Durables	0.71	0.67	0.04
Miscellaneous	8.17	8.67	-2.84*

* Significant at 5 % level of significance

Table 4b: Average expenditure shares for different commodity groups, by region (male -female)

	Urban			Rural		
	Male	Female	T-test	Male	Female	T-test
Food and drinks	42.31	38.79	6.61*	52.39	48.26	9.40*
Clothing and Footwear	5.04	5.24	-1.91	5.74	6.18	-4.81*
Fuel & lighting	7.47	8.01	-3.15*	8.39	10.09	-10.63*
Housing	18.55	20.96	-4.95*	9.06	10.35	-5.00*
Transport & Communications	5.87	4.68	5.28*	5.62	3.98	8.70*
Household effects	.59	.69	-1.81	.60	.74	-2.47*
Personal effects	3.68	3.68	-0.02	3.46	3.49	-0.44
Healthcare	2.99	3.27	-1.53	3.84	4.08	-1.40
Education	3.80	4.88	-4.39*	1.65	2.86	-9.29*
Entertainment	.93	.81	1.86	.28	.36	-2.26*
Durables	.72	.88	-0.84	.71	.52	1.27
Miscellaneous	8.05	8.10	-0.25	8.25	9.08	-3.34*

* Significant at 5 % level of significance

IV. Results

The results of the empirical analysis of household consumption patterns for male and female headed households, at the national level as well as by urban and rural areas, are presented and discussed in this section. The Engel curves have been estimated using both the linear and double log functional forms, employing the Ordinary Least Squares (OLS) method. The estimated marginal expenditure shares for the 12 commodity groups are reported in Table 5 for both set of households for overall Pakistan as well as by the urban and rural sectors.

It is seen that the marginal expenditure shares are the highest for housing, durables and food and drinks for MHHs, while in case of FHHs they are highest for durables, followed by housing and food & drinks. One noteworthy finding is the higher marginal expenditures by FHHs on education and durables in comparison to their male counterparts, with this result being consistent in the urban-rural areas as well.

Table 5: Marginal expenditure shares for different commodity groups, by gender and region

Commodity groups	Overall		Urban		Rural	
	Male	Female	Male	Female	Male	Female
Food and drinks	.198	.145	.195	.145	.212	.147
Clothing and Footwear	.035	.022	.029	.020	.047	.026
Fuel and lighting	.047	.045	.048	.049	.043	.032
Housing	.226	.235	.285	.263	.073	.065
Transport & communications	.092	.100	.093	.087	.091	.164
Household effects	.024	.010	.014	.009	.043	.014
Personal effects	.029	.038	.032	.044	.021	.014
Healthcare	.026	.015	.024	.013	.032	.026
Education	.081	.108	.092	.113	.051	.083
Entertainment	.012	.014	.013	.014	.010	.016
Durables	.218	.237	.145	.192	.301	.434
Miscellaneous	.158	.135	.143	.141	.201	.120

The regional breakup reveals that in urban areas, both MHHs and FHHs have the highest levels of marginal expenditures on housing, followed by food and drinks for MHHs and durables for FHHs. In the rural sector, both MHHs and FHHs have the highest spending at the margin on durables, although the magnitude for FHHs is much higher – they spend Rs. 0.43 on this

category for every one rupee of increase in total consumption expenditure, compared to Rs. 0.3 spent by their male counterparts. MHHs in the rural sector spend considerably more at the margin on food & drinks as compared to their female counterparts.

The analysis of expenditure elasticities, reported in Table 6 shows that for both set of households being investigated; education, transport & communications, household effects, durables, entertainment and miscellaneous items can be considered as luxury goods – having expenditure elasticities in excess of unity, at the national level as well as by the urban-rural divide. Housing is a luxury good for both MHHs and FHHs at national and regional level except for MHHs residing in rural areas of the country, while entertainment is observed to a luxury for MHHs at the national level and for both MHHs and FHHs in the rural sector. The remaining commodity groups are necessitates, with healthcare being a luxury only for MHHs in the rural sector.

Table 6: Expenditure elasticities for different commodity groups, by gender and region

Commodity groups	Overall		Urban		Rural	
	Male	Female	Male	Female	Male	Female
Food and drinks	.636	.591	.638	.570	.706	.686
Clothing and Footwear	.766	.683	.737	.664	.845	.757
Fuel and lighting	.730	.626	.690	.637	.804	.674
Housing	1.342*	1.357*	1.247*	1.262*	.943	1.005*
Transport & communications	1.373*	1.273*	1.424*	1.245*	1.392*	1.332*
Household effects	1.223*	1.015*	1.247*	.994	1.311*	1.178*
Personal effects	.836	.805	.859	.800	.717	.727
Healthcare	.825	.725	.824	.699	1.009*	.946
Education	1.788*	1.644*	1.6202*	1.383*	1.688*	1.755*
Entertainment	1.046*	.991	.828	.798	1.133*	1.231*
Durables	1.470*	1.247*	1.424*	1.289*	1.767*	1.318*
Miscellaneous	1.425*	1.454*	1.437*	1.570*	1.529*	1.517*

*Luxury good

V Consumption Patterns by Expenditure Quintiles

The preceding analysis presented an overview of the consumption patterns of both male headed and female headed households, at the national level as well as its disaggregation by urban-rural sectors. This analysis, however, is likely to mask considerable variation in the consumption

behavior as the economic status of both set of households changes. In order to examine the consumption patterns by different economic status of households, we analyze the consumption behavior of MHHs and FHHs by consumption expenditure quintiles. The consumption expenditures of male and female headed households by the five expenditure quintiles given in Table 7 show that in the first three expenditure quintiles, the consumption expenditures of male headed households are higher than those of their female counterparts. However, the expenditure gap between male and female headed households narrows down as one moves up the quintiles, from 92 percent of MHHs' expenditures in first quintile to 99.8 percent in the third. In the highest two expenditure quintiles, the consumption expenditures of female headed households are, on average, slightly higher than those of male headed households.

Table 7: Average monthly household consumption expenditure (Rs.), by gender of household head and expenditure quintile

	Male	Female	Female Expenditures as % of male
Quintile 1	5502.22	5072.42	92.2
Quintile 2	8204.67	8175.85	99.6
Quintile 3	10675.78	10649.65	99.8
Quintile 4	14216.92	14374.73	101.1
Quintile 5	29244.9	29807.02	101.9

The average expenditure shares by expenditure quintiles with respect to the 12 commodity groups being examined for MHHs and FHHs are given in Table 8. At a first glance, it can be seen that the Engel's Law is being validated, as the share of household expenditures allocated to food and drinks declines with improvement in the economic status (as proxied by the expenditure quintiles) of both MHHs and FHHs. It can also be seen that for each expenditure quintile, the proportionate spending of MHHs on food and drinks is higher as compared to the FHHs. In general, the analysis shows that the patterns and trends seen for the MHHs and FHHs at national level previously also hold broadly in the disaggregated analysis by expenditure levels across both set of households. The important findings in this regard include the proportionately higher budgetary shares of FHHs on education, housing, fuel and lighting, household effects and healthcare and the lower expenditure shares for transport and communications.

The marginal expenditure shares and expenditure elasticities of MHHs and FHHs by expenditure quintiles are presented in Table 9, which show mixed and varying trends and patterns with respect to the gender of household head and expenditure quintiles.

Table 8: Average expenditure shares for different commodity groups, by gender of household head and expenditure quintile

Commodity groups	Male					Female				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Food and drinks	54.61	52.47	50.29	46.68	38.01	50.05	47.82	46.28	42.11	30.96
Clothing and Footwear	5.74	5.66	5.55	5.40	4.94	5.90	6.22	6.12	5.85	4.73
Fuel and lighting	9.23	8.52	8.13	7.79	6.51	10.89	10.16	8.94	8.19	6.62
Housing	11.45	11.56	12.15	13.05	16.08	13.40	12.90	13.18	14.96	20.76
Transport & communications	4.38	5.13	5.30	6.20	7.53	3.49	3.72	3.98	4.39	6.34
Household effects	0.37	0.45	0.53	0.64	0.99	0.48	0.55	0.69	0.92	1.14
Personal effects	3.91	3.69	3.57	3.42	3.18	3.88	3.75	3.42	3.48	3.10
Healthcare	3.47	3.48	3.49	3.51	3.53	3.84	3.52	3.90	3.70	3.66
Education	0.66	1.38	2.01	3.13	5.28	1.13	3.01	3.44	4.83	7.98
Entertainment	0.21	0.38	0.54	0.67	0.88	0.35	0.49	0.49	0.73	0.84
Durables	0.19	0.23	0.45	0.83	1.85	0.24	0.16	0.71	0.90	1.69
Miscellaneous	5.77	7.05	7.98	8.69	11.21	6.34	7.72	8.84	9.96	12.18

Table 9: Marginal expenditure shares for different commodity groups, by gender of household head and expenditure quintile

Commodity groups	Male					Female				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Food and drinks	0.482	0.440	0.349	0.322	0.155	0.399	0.373	0.537	0.336	0.113
Clothing and Footwear	0.046	0.049	0.047	0.038	0.031	0.042	0.046	0.039*	0.015*	0.015
Fuel and lighting	0.075	0.062	0.079	0.049	0.043	0.085	0.063	0.065	0.035*	0.044
Housing	0.150	0.149	0.159	0.181	0.227	0.174	0.126*	0.010*	0.142	0.204
Transport & communications	0.070	0.069	0.058	0.105	0.088	0.073	0.066	0.059	0.066	0.114
Household effects	0.010	0.010	0.013	0.018	0.029	0.010*	0.020*	0.010*	0.021*	0.009
Personal effects	0.032	0.033	0.031	0.037	0.028	0.035	0.030	0.052	0.030	0.044
Healthcare	0.032	0.039	0.053	0.026	0.019	0.042	0.074	0.024*	0.030*	0.004*
Education	0.028	0.046	0.082	0.090	0.073	0.063	0.071*	-0.029*	0.123	0.097
Entertainment	0.027	0.005*	0.021	0.016	0.012	-0.005*	-0.017*	-0.027*	0.044	0.014
Durables	0.001*	0.087	0.057*	0.049*	0.263	-0.004*	0.040	0.018*	0.117*	0.284
Miscellaneous	0.078	0.089	0.123	0.123	0.174	0.104	0.127	0.166	0.187	0.131

* Not significant at 5 percent level of significance

Table 10: Expenditure elasticities for different commodity groups, by gender of household head and expenditure quintiles

Commodity groups	Male					Female				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Food and drinks	0.919	0.835	0.672	0.707	0.509	0.748	0.816	1.112	0.788	0.513
Clothing and Footwear	0.808	0.804	0.826	0.702	0.620	0.694	0.789	0.545*	0.243*	0.555
Fuel and lighting	0.862	0.693	0.961	0.654	0.647	0.773	0.674*	1.051	0.478*	0.651
Housing	1.250	1.182	1.074	1.438	1.300	1.258	0.899*	0.399*	0.712*	1.145
Transport & communications	1.388	1.314	0.954	1.709	1.188	1.250	1.370	0.784*	1.229	1.325
Household effects	1.448	0.605*	1.126	1.545	1.063	0.900	0.216*	0.317*	0.324*	0.568
Personal effects	0.819	0.877	0.873	1.060	0.799	0.863	0.799	1.521	0.833	0.760
Healthcare	0.882	0.951	1.329	0.666	0.620	0.884	1.791	0.679*	0.462*	0.587
Education	1.242	2.074	2.613	2.070	1.394	2.096	1.986	-0.402*	2.073	0.974
Entertainment	2.122	1.018*	1.479	1.097	0.867	0.734*	-0.968*	-1.836*	2.332	1.004
Durables	-0.055*	2.268	1.433*	0.376*	1.534	0.525*	5.719	2.192*	2.240*	1.226
Miscellaneous	1.714	1.424	1.445	1.490	1.206	1.901	2.158	2.159	1.810	1.155

* Not significant at 5 percent level of significance

VI. Concluding Remarks

The purpose of this study has been to empirically test for the homogeneity of household consumption patterns of male headed and female headed across Pakistan as well as explore the urban-rural variations within each set of households. The paper estimated average expenditure shares, marginal expenditure shares and expenditure elasticities for both MHHs and FHHs at the national level as well as by urban/rural sectors within each province, using household level micro data for the year 2007-08. In addition, the average expenditure shares, marginal expenditure shares and expenditure elasticities for both MHHs and FHHs are also estimated by consumption quintiles to analyze how consumption behavior differs by economic status for these two set of household.

The results of this preliminary analysis show that household consumption patterns are not homogeneous across the male and female headed households at the national level and also exhibit variations across the urban/ rural divide within the country. Our findings lend support to the existing body of evidence from developing world that female headed households allocate a greater share of financial resources to activities that promote human capital formation and development. Overall, expenditures on food and drinks, followed by housing account for the highest share of total household consumption expenditures for both male and female headed households at the national level. FHHs are seen to have higher budget shares for education, housing, fuel and lighting, clothing and footwear and household effects and lower average expenditures on food & drinks and transport and communications compared to their male headed counterparts. The findings with regards to the expenditure shares of FHHs on education, housing, food & drinks and communication and transport; also hold across the urban-rural divide.

In terms of the marginal expenditure shares, it is seen that MHHs spend the highest at the margin on housing, durables and food and drinks, while FHHs' marginal expenditures are highest for durables, followed by housing and food & drinks. It is observed that FHHs have a higher marginal spending on education and durables in comparison to their male counterparts, with this result being consistent in the urban-rural areas as well.

The regional breakup reveals that in urban areas, both MHHs and FHHs have the highest levels of marginal expenditures on housing, followed by food and drinks for MHHs and durables for FHHs. In the rural sector, both MHHs and FHHs have the highest spending at the margin on durables, although the magnitude for FHHs is much higher – they spend Rs. 0.43 on this category for every one rupee of increase in total consumption expenditure, compared to Rs. 0.3 spent by their male counterparts. MHHs in the rural sector spend considerably more at the margin on food & drinks as compared to their female counterparts.

The analysis of expenditure elasticities shows that education, transport & communications, household effects, durables, entertainment and miscellaneous items are luxury goods for both set of households being investigated. Housing is a luxury good for both MHHs and FHHs at national and regional level except for MHHs residing in rural areas of the country, while entertainment is observed to a luxury for MHHs at the national level and for both MHHs and FHHs in the rural sector. The remaining commodity groups are necessitates, with healthcare being a luxury only for MHHs in the rural sector.

The study also examined the consumption behavior of MHHs and FHHs by expenditure quintiles, to determine how patterns of consumption varied with the economic status of both set of households. The analysis of consumption expenditures of male and female headed households by the five expenditure quintiles reveals that in the first three expenditure quintiles, the consumption expenditures of male headed households are higher than those of their female counterparts, while in the highest two expenditure quintiles, the consumption expenditures of female headed households are, on average, slightly higher than those of male headed households.

The analysis of average expenditure shares of both set of households by expenditure quintiles clearly shows that the Engel's Law is validated as the share of household expenditures allocated to food and drinks declines with improvement in the economic status (as proxied by the expenditure quintiles) of both MHHs and FHHs. It can also be seen that for each expenditure quintile, the proportionate spending of MHHs on food and drinks is higher as compared to the FHHs. In general, the analysis shows that the patterns and trends seen for the MHHs and FHHs at national level previously also hold broadly in the disaggregated analysis by expenditure levels across both set of households.

The exploratory analysis of the consumption behavior by gender of the household head presented in this study offers useful insights into how consumption patterns differ across male and female headed households in the country. However, in order to draw more conclusive policy inferences, this analysis, needs to be supplemented by more in-depth research into the socio-economic determinants of female headed households in the country, which is beyond the scope of this study. This research should focus on examining among other things, the overall composition of female headed households (proportion that is *de facto* and *de jure*), the educational status, the occupational grouping and the sources of income. Previous research on socio-economic determinants of female headed households living in poverty in Pakistan has shown that more than 70 percent of female headed households in the country were receiving domestic and/ or foreign remittances during the period 2000-04 (Khalid and Akhtar 2011)⁵.

⁵ The study used data from the Pakistan Integrated Household Survey 2000-01 and the Pakistan Social and Living Standards Measurement Survey 2004-05.

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Appendix 1: Details of commodity groups

1. Food and drinks	Milk and milk products, meat poultry and fish, fresh fruits, dry fruits & nuts, cereals, pulses, edible oils and fats, tea and coffee, baked and fried products, miscellaneous food items,
2. Clothing and footwear	Clothing, clothing material and services, footwear and repair charges, other expenses on tire, tube, spare parts, repairs of vehicle etc. and service charges.
3. Fuel and lighting	Gas, electricity, fire-wood, kerosene oil, other household effects (bulbs, tubes, switches, battery cells, lamp shades etc.)
4. Personal effects	Personal care articles, personal care services, household laundry, cleaning and paper articles, personal durable effects (wrist / pocket watches, sun glasses, etc), laundry and cleaning equipment (washer / dryer, vacuum cleaner, iron, iron board, etc.)
5. Housing	House rent and housing expenses, house and property tax etc.
6. Transport & Communications	Personal transport and travelling, petrol charges, repairing of wheel puncture, annual driving license fee, expenses on traveling by road by train and by air, vehicle registration fee, etc
7. Household effects	Readymade pillow covers, bed sheets, blankets, curtains, mosquito nets etc., purchase of cloth(for pillow covers, bed sheets quilts etc.) & purchase of cotton (for quilts, pillows, etc.), carding and other stitching charges on household textile, chinaware, silverware and kitchen equipment, furniture, fixture and furnishing, other household effects,
8. Healthcare	Purchase of medicine, hospitalization expenses, medical fees, laboratory and physician's charges.
9. Education	School/college fees and private tuition fees, books and exercise note books / copies, stationary etc. other education expenses (bags, professional society membership, transportation etc.), hostel expenses, calculators, personal computers, mobiles etc,
10. Entertainment	Recreation & reading, expenditure on hobbies, cable installation recreational membership fee, toys, games, photography, lodging charges etc, radio and musical instruments(tape recorder, gramophone, TV, VCR, VCP, cassettes), recreational equipment (cameras, projector, shot gun, angling kit, bats, balls etc.)
11. Durables	Car, motorcycle, electric/ oil fans (table, pedestal, ceiling, exhaust), air conditioners, air coolers, refrigerators, freezers, heater, boiler, geyser (electric, gas, oil), table lamp, sewing machine, knitting machine (electric / hand), other (trunks, suitcase etc.), wall / table clock, water pipes (rubber, nylon, plastic), thermos bottle etc., service and repair charges of household effects, mentioned above
12. Miscellaneous	Stationery supplies such as pen, pencils, stapling machine, pin etc. (other than education purpose), crockery & cutlery for daily use, taxes & fines and all other miscellaneous expenditure, personal effects and service and repair charges
