



Consumption Pattern of Male and Female Headed Households: Evidence for Pakistan

**ABSTRACT**

This paper aims to investigate the consumption patterns of male and female-headed households in Pakistan. According to the findings, both types of households spend about half of their total expenditure on food and drinks. Furthermore, compared to their male counterparts, female-headed households spend a higher percentage of their income on education and healthcare. On the other hand, male-headed households spend a larger share of their expenditure on food and drinks and entertainment than female-headed households. The budget shares for food and drinks, fuel and lightning, and clothing and footwear decline, while that of education, durables, healthcare, and entertainment rise with the increase in total expenditures in case of both types of households. The aged heads are found to be more diet and health-conscious; and thereby, with the increase in age, the expenditures on food and drinks, healthcare and education increase. Results also reveal that with the increase in the dependency ratio, the budget share increases more on food items than non-food items. Finally, with a higher level of education, the budget shares of education, entertainment, durables, healthcare, and fuel and lightning increase.

**Keywords**

Consumption pattern; Households, Gender, Regression, Pakistan

**JEL Classification**

D1, D12, J16

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## 1. INTRODUCTION

Although male members of a household play a significant role in decision-making, especially in developing nations, the role of females has received more attention from researchers in recent decades. Females may become household heads for various reasons, including the temporary absence of a male head (defacto household) or the permanent departure of a male partner from the house (dejure household)<sup>1</sup>. Furthermore, in male-dominated societies, female-headed households are increasing due to economic structures and changes in societal attitudes in favor of women's role in society (Buvinic et al., 1978; Dwyer & Brauce, 1988; Buvinic, 1991).

Responsibilities, expectations, and social relationships of males and females are not the same, and differences within and between cultures. Similarly, needs and priorities regarding their families are different, and, therefore, the two groups of households have different consumption patterns (Bernardino, 2011; Donkoh & Amikuzuno, 2011; Henry et al., 2012). The consumption pattern determines the household's status and predicts future human capital accumulation. Households who invest more in education accumulate more human capital and have a higher future income. Furthermore, people also emphasize the self-concept cultural values that force them to buy luxuries even though they may not be required.

Pakistan's traditional culture restricts women and often places the male as the main decision-maker (Hakim & Aziz, 1998). However, recent efforts have been made on women's empowerment, which has changed their social lives considerably. As a result, the country has witnessed a significant improvement in the roles of females not only within their households but also outside the households. More women are currently participating in the job market, and the number of households headed by females is increasing. As a result, it is important to investigate the differences in consumption patterns between male and female-headed households.

As gender influences how people buy goods and services, therefore it is crucial to understand how male and female-headed households allocate their resources to various commodities and services. This will help policymakers to design welfare policies based on the consumption difference between male and female-headed households. Moreover, the income, education, age, and occupation vary across the consumers; therefore, they are different in allocating their budgets to different goods and services to satisfy their needs. Share of expenditure assigned to various commodities determines their relative importance and reflects the household's economic position and living standard. Usually, the rich spend a smaller percentage of income on necessities and relatively allocate more to luxuries. On the other hand, consumers with low income spent a higher proportion of their income on food and drinks (Kinsey, 1988). Therefore, the study aims to investigate the factors affecting the patterns of households' consumption of both types of households using HIES-2013-14. The specific objectives of the study are as follows:

- 1) to find out the differences in the consumption patterns of male and female-headed households.
- 2) to investigate the impacts of regional, socioeconomic, and demographic variables on the consumption patterns of male and female-headed households.

## 2. LITERATURE REVIEW

A plethora of literature is available on male and female-headed households' consumption patterns for developed and underdeveloped countries. Among these, Houthakker (1957) is one of the first studies that use 40 different surveys of 30 countries to analyze households' consumption patterns. The study

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<sup>1</sup> In defecto households, male partner is either absent in most of the time due to migration or present but does not play a vital role in the contribution of household's economic resources. In dejure households, because of the divorce or death of the male partners, females are alone permanently heads (Kazi et al., 1988, Khan & Khalid, 2012).

finds that share of food expenditures decrease as income levels increase. Furthermore, the study also finds housing as a necessity, clothing as luxury items, and transportation, in some countries, as a necessity. [Hoddinott and Haddad \(1995\)](#) show that shares of expenditure on food, fuel, jewelry, and clothing are larger for females, while male-headed households devote more expenditures to food away from home, alcohol, cigarettes, and entertainment in West Africa. Also, the [World Bank \(2006\)](#) reports a similar difference between male and female-headed households in Uganda. Male-headed households spend a larger share of consumption on cigarettes and alcohol, while the households headed by females spend more on food and children's schooling. For Tanzania, [Seebens \(2009\)](#) shows that female-headed households devote more of their expenditures to education, child clothing, and food and spend less of their income on goods related to adults. The findings of [Olubukunmi et al. \(2016\)](#) for southeast Nigeria depict that households headed by females allocate, on average, a larger proportion of income to food and non-food items than the male-headed households. Further, results also depict that the poor households' expenditures are smaller on non-food items like clothing, fuel, education, electricity, water, and transportation.

Apart from gender, consumers' preferences vary with occupational status, age, level of education, race, and region of residence of the household ([Ketkar & Cho, 1982](#)). White-collar occupational groups allocate a more significant share of their income to education, entertainment, and housing material. In contrast, households headed by blue-collar occupational groups generally spend more on food, transportation, personal care, and personal insurance ([Cage, 1989](#)). For US households, [Ding \(2007\)](#) shows that households headed by individuals with age greater than 55 years spend more on household insurance, domestic services, and medicines while those headed by individuals with less than 55 years of age spend more on food eaten out, household textiles, tobacco, and smoking. On the other hand, more educated people spend a smaller share of income on smoking and tobacco and a larger share on furniture, reading materials, healthcare services, etc. A one- or two-person family spends more on food away from home, personal care services, telephone equipment, and reading material. Families with more than five members, on the other hand, choose food at home, kitchen, appliance, domestic textiles, maintenance, and repair. [Travassos et al. \(2021\)](#) show that food, healthcare, and transportation consumption are more price-sensitive for elderly-headed households and increase in income raises health-care expenditures in elderly-headed households to a larger extent than in younger-headed households.

Few studies have looked at the consumption patterns of male and female households in Pakistani literature. Among these, [Burney and Khan \(1991\)](#) utilize data of HIES 1984-85 and find that compared to the urban households, the expenditures of rural households are higher on food and drinks and smaller on housing material, transportation, education, etc. entertainment. The study also reports a decline in the share of food and drink expenditure as the income of the household increases. With an increase in rural household income, the share of transportation and communication rises, while the shares of clothing, fuel, and lighting fall. [Shamim and Ahmed \(2007\)](#) use the data of HIES- 2001-02 and find healthcare, grains, and housing as luxuries in urban regions, while in rural regions, entertainment, electricity, and durables are found as luxuries. [Khan and Khalid \(2012\)](#) use the data of HIES-2007-08 and find that households headed by females spend more on fuel and lighting, housing, education, footwear, and clothing, and less on food and drinks, and transport and communications than the households headed by a male. For both female and male-headed households, the study classifies clothing and footwear, food and drinks, personal effects, fuel and lighting, and healthcare as necessities, while transport and communications, education, household effects, entertainment, and durables are classified as luxuries.

The studies related to Pakistan are suffering from several problems. They are outdated and have covered only a few commodity groups that do not provide female and male-headed households' consumption behavior. The present study is an effort to fill this gap by using the survey data of HIES-2013-14. This study will not only look at the disparities in consumption patterns between male and female-headed households in Pakistan, but it will also investigate the effects of other regional, socioeconomic, and demographic characteristics on their consumption habits.

### 3. METHODOLOGY

Using constraint utility maximization problem, we can derive the following demand function<sup>2</sup>:

$$EXP_j^i = \alpha_i + \beta_i I_j + \mu_j \quad (1)$$

Where  $EXP_j^i$  is expenditure on  $i^{\text{th}}$  good made by  $j^{\text{th}}$  household,  $I_j$  is the level of income of the  $j^{\text{th}}$  household and  $\mu_j$  is the stochastic error term.

Total expenditures are preferred as welfare indicators in developing countries like Pakistan over household income since household consumption expenditures are smoother. Individuals do not report their income correctly and there are more chances of measurement errors in income<sup>3</sup>. Moreover, due to the seasonal pattern of cropping, income is vulnerable to large fluctuations in rural regions of developing countries. Therefore, we employ the Working-Lesser model proposed by Working (1943) and Lesser (1963) to assess the difference in budget shares of different consumption categories of male and female-headed households. In this specification, the share of expenditure allocated to a certain good is regressed on the log of total expenditures as given below:

$$SEXP_j^i = \alpha_i + \beta_i \ln TEXP_j + X\gamma + \mu_j \quad (2)$$

where  $SEXP_j^i$  is the  $j^{\text{th}}$  household share of expenditure on  $i^{\text{th}}$  commodity,  $\ln TEXP_j$  is the log of total expenditures  $j^{\text{th}}$  household, and  $X$  is the vector of other control variables.

The **level of education** plays a crucial role in changing the traditional attitudes towards spending (Jerome, 2002), and differences in educational levels are important in determining how household expenditure decisions are made (Simister & Piesse, 2002). More educated people are more conscious about their standard of living. Therefore, to improve the living standard, new needs are developed. **The age** of the household head influences his consumption pattern (Ding, 2007) as it captures the variations in consumption patterns due to the changes in the biogenic and psychogenic demands of the consumer over the life cycle (Blisard *et al.*, 2003). Furthermore, the environments surrounding one's occupational settings and job field influence one's expenditures on various goods. In general, white-collar workers spend more of their income on housing, and entertainment, whereas blue-collar workers spend more on necessities (Cage, 1989). Consumption of household is also affected by the **number of dependent members**. Spending on schooling, childcare, and healthcare may be higher in a household with more dependent members. A lower dependency ratio ensures that more resources are available to each household member. These resources would result in improved nutrition, health, and well-being of households (Hadley *et al.*, 2011).

On putting the variables mentioned above, equation (2) takes the form:

$$SEXP_j^i = \alpha_i + \beta_i \ln TEXP_j + \theta_i \ln AG_j + \rho_i ED_j + \tau_i OC_j + \lambda_i \ln DR_j + \varepsilon_j \quad (3)$$

Where  $AG$ ,  $Ed$ , and  $OC$  are the age, educational level, and occupation of the  $j^{\text{th}}$  household's head, respectively, and  $DR$  is the  $j^{\text{th}}$  household's dependency ratio.

Consumption patterns can also be different across the **regions**. The consumption behaviors and priorities of rural households are different from those living in urban areas. Likewise, households living in the more developed province have easy access to major facilities than other provinces. To capture the regional effects, dummy variables can be introduced to urban-rural and province-level differences. Hence, equation (3) can be written as:

<sup>2</sup> Equation (1) is well known Engle curve, and its detail derivation is given in Khan and Khalid (2010)

<sup>3</sup> Usually, income is under reported

$$SEXP_j^i = \alpha_i + \beta_i \ln TEXP_j + \theta_i \ln AG_j + \rho_i ED_j + \tau_i OC_j + \lambda_i \ln DR_j + \pi_i UR_j + \sigma_{i1} PP_j + \sigma_{i2} PS_j + \sigma_{i3} PB_j + \varepsilon_j \quad (4)$$

Where, *UR*, *PP*, *PS*, and *PB* are dummy variables used for rural regions, Punjab, Sindh, and Balochistan, respectively. Urban region and KP are taken as reference categories.

**The gender** of a household head plays a vital role in the decision-making process of expenditures made on goods and services. [Handa \(1996\)](#), [Panda \(1997\)](#); [Seebens \(2009\)](#); and [Khan and Khalid \(2012\)](#), among others, have investigated the differences in consumption patterns of male and female-headed households in developing countries. The consumption patterns of male and female-headed households differ because their needs, wants, lifestyles and behaviors are different. Therefore, this study will analyze and compare the consumption patterns of households headed by males and females. First we will estimate equation (4) for female and male-headed households separately and then for testing differences in the consumption behavior of these two types of households, we will apply the following F-test:

$$F(K+1, N_1 + N_2 - 2K - 2) = \frac{(RSS_R - RSS_{UR})/(K+1)}{(RSS_{UR})/(N_1 + N_2 - 2K - 2)} \quad (5)$$

Where  $RSS_R$  is residuals sum of squared restricted,  $RSS_{UR}$  is residuals sum of squared un-restricted,  $N_1$  and  $N_2$  represent the numbers of female and male-headed households, respectively, and  $K$  represents the number of parameters of the model<sup>4</sup>.

#### 4. DATA SOURCE AND CONSTRUCTION OF VARIABLES

We use the Household Integrated Economic Survey (HIES-2013-14). Data on all variables relevant variables are extracted for the sample of 17810 households. Among these, 90.30 percent (16087) are male-headed, and 9.70 percent (1723) are female-headed households. Rural households are 65.35percent, while the percentage of urban households is 34.65 of the total sample<sup>5</sup>. Of the total households, 42.23 percent are from Punjab, 28.97 percent are from Sindh, 19.58 percent are from KP, and 9.22 percent are from Balochistan.

The expenditure on each commodity is calculated by summing the imputed value and amount spent on that commodity. Total expenditures include all the household expenditures on eight different commodity groups under consideration<sup>6</sup>. The budget share of a particular consumption category is obtained by dividing expenditures on a particular category by the households' total expenditures. Level of education is categorized into four groups, i.e., Below primary, primary, secondary, and intermediate and above.

Data on occupations are provided for 398 occupational categories in the HIES survey. These 398 occupations are merged into ten major groups according to Pakistan Standard Classifications of Occupations as: managers, professionals, technicians and associate professionals, clerical support workers, service and sales workers, skilled agricultural, forestry and fishery, craft and related trade workers, plant and machine operators, elementary occupations, and armed forces. After dropping the last, armed force category, the remaining nine groups of occupations are further categorized into four groups based on the level of skills required for each occupation provided by the [Pakistan Bureau of](#)

<sup>4</sup> First, we will estimate separate regressions for male and female headed households and obtain  $RSS_{UR}$  ( $RSS_M + RSS_F$ ). For the restricted model, both groups of households will be combined and will obtain  $RSS_R$ . The F-test will next be used to test the hypothesis that no differences in consumption patterns exist between male and female headed households.

<sup>5</sup> The percentage of male headed and female headed households in rural and urban regions are almost same.

<sup>6</sup> Detail of groups of commodities is given in Appendix A.

Statistics (2015)<sup>7</sup>. However, we introduce a new category (skill0) for household heads who do not work in any profession. The dependency ratio is calculated by using the formula:

$$\text{Dependency ratio} = \frac{\text{household members below age 15} + \text{household members above age 64}}{\text{Total number of household members between 15 to 64}} * 100$$

The household head's age is reported as complete years in the survey. For Regional and Provincial analysis, dummy variables are introduced.

## 5. RESULTS AND DISCUSSION

Two different methods are used in this study to assess differences in the consumption patterns of households headed by males and females. To evaluate the difference in budget shares allocated to eight consumption categories by male and female-headed households, we first utilize a two-sample t-test. After this, we use regression analysis and apply FGLS to equation (4) for male and female-headed households separately and then apply F-test to test the differences in consumptions of different categories by these two types of households<sup>8</sup>.

Table 1 below shows the average budget shares of male and female-headed households allocated to different consumption categories, as well as two-sample t-tests.

**Table 1:** Male and Female-headed households' shares of expenditure on different commodities

| Commodity Groups      | Male-Headed | Female-Headed | t-test | Probability |
|-----------------------|-------------|---------------|--------|-------------|
| Education             | 0.037       | 0.053         | -11.0  | 0.00*       |
| Clothing and footwear | 0.068       | 0.077         | -10.0  | 0.00*       |
| Durables              | 0.003       | 0.005         | -5.30  | 0.00*       |
| Healthcare            | 0.035       | 0.042         | -3.90  | 0.00*       |
| Entertainment         | 0.0039      | 0.0034        | 1.40   | 0.15        |
| Food and drink        | 0.510       | 0.460         | 12.6   | 0.00*       |
| Fuel and lighting     | 0.081       | 0.089         | -7.50  | 0.00*       |
| Miscellaneous         | 0.260       | 0.268         | -0.80  | 0.30        |

**Note:** \* P < 0.01, \*\* P < 0.05, \*\*\* P < 0.1

Results reveal that food and drink is the most crucial category because both households spend a larger share of their expenditures on this category. Results also depict that the share of expenditure allocated to food and drink by male-headed households is larger than the female-headed households. Moreover, shares of expenditures made on clothing and footwear, fuel and lighting, healthcare, education, and durables by female-headed households are greater than their male counterpart. However, the differences in the shares of entertainment and miscellaneous expenditures are insignificant. These results are aligned with Panda (1997) and Khan and Khalid (2012).

Next, we use regression analysis to find the strength of factors affecting the consumption of different commodities in the case of male and female-headed households. For this purpose, we estimate equation (4) separately for the data of male and female-headed households, using FGLS. Results are presented in Table 2:

<sup>7</sup> HIES survey does not contain data on armed forces.

<sup>8</sup> We apply FGLS to overcome the problem of heteroscedasticity in our model.

**Table 2: FGLS estimates**

| <b>Female-Headed Households</b> |              |          |                  |                   |                     |                     |          |          |          |          |          |          |         |             |
|---------------------------------|--------------|----------|------------------|-------------------|---------------------|---------------------|----------|----------|----------|----------|----------|----------|---------|-------------|
|                                 | Expenditures | Age      | Dependency Ratio | Primary Education | Secondary Education | Graduates and above | Skill1   | Skill2   | Skill3   | Skill4   | Rural    | Punjab   | Sindh   | Balochistan |
| Education                       | 0.050*       | 0.016*   | 0.0079*          | 0.025*            | 0.031*              | 0.032*              | -0.02    | -0.003   | -0.002   | -0.001   | 0.001*   | 0.0009   | 0.0011  | -0.0006*    |
| Clothing and footwear           | -0.0028      | 0.0035   | 0.0062           | 0.0008*           | 0.0037              | 0.003               | 0.0016   | -0.005   | -0.018   | -0.002   | -0.0071  | 0.0163*  | -0.02*  | -0.0141*    |
| Durables                        | 0.0082       | -0.0006* | -0.0025*         | 0.0010*           | 0.0069              | 0.0081              | 0.0002   | 0.0007   | 0.0024   | 0.0027*  | -0.0089* | 0.0026*  | 0.0058* | 0.0064*     |
| Healthcare                      | 0.0014*      | 0.0078*  | -0.0034*         | 0.0013            | 0.0028              | 0.0064              | 0.0031   | 0.0034   | 0.0067   | 0.0090   | -0.010*  | 0.0001   | -0.017* | -0.024*     |
| Entertainment                   | 0.0068*      | -0.0019  | -0.0014*         | -0.0005           | -0.0002             | 0.0025              | -0.0071  | -0.0031  | -0.0017  | -0.0007  | -0.0011* | 0.0009   | 0.0011  | -0.0006*    |
| Food and drink                  | -0.099*      | 0.0433*  | 0.0395*          | -0.011            | -0.012              | -0.019*             | 0.013*   | -0.026*  | -0.022   | -0.0241* | -0.059*  | -0.063*  | -0.014  | -0.016      |
| Fuel and lighting               | -0.017*      | 0.0024   | -0.0020          | 0.004             | 0.0024              | -0.0076             | -0.0020  | -0.0055  | -0.0051  | -0.000   | -0.010*  | 0.0042   | -0.024* | 0.0436*     |
| Miscellaneous                   | 0.060*       | -0.0078* | -0.045*          | -0.0043           | -0.0075             | -0.0094*            | -0.003*  | -0.0067* | -0.019*  | -0.0028  | 0.0719*  | 0.017*   | -0.063* | -0.030*     |
| <b>Male Headed Households</b>   |              |          |                  |                   |                     |                     |          |          |          |          |          |          |         |             |
| Education                       | 0.027*       | 0.0045*  | 0.0052*          | 0.0062*           | 0.014*              | 0.024*              | -0.0033* | -0.0024* | 0.0037*  | 0.012*   | 0.012*   | 0.0041*  | -0.009* | -0.019*     |
| Clothing and footwear           | -0.0057*     | 0.0031*  | 0.0050*          | 0.0009            | 0.0008              | -0.0016*            | 0.009*   | -0.0013* | -0.0003  | -0.0037* | -0.0038* | 0.0150*  | 0.0136* | -0.0058*    |
| Durables                        | 0.0015*      | -0.0005* | -0.0021*         | 0.0007*           | 0.0011*             | 0.0019*             | 0.001    | 0.0037*  | 0.0090   | 0.0086*  | -0.0084* | 0.0017*  | 0.0024* | 0.0025*     |
| Healthcare                      | 0.0020*      | 0.0050*  | -0.0005          | -0.0004           | 0.0020              | 0.0052*             | 0.0010*  | 0.0010   | 0.0013   | 0.0034*  | -0.010*  | 0.0040*  | -0.014* | -0.022*     |
| Entertainment                   | 0.0081*      | -0.0018* | -0.0020*         | 0.00046           | 0.0010*             | 0.0033*             | -0.0019  | 0.0007*  | 0.0007   | 0.0010   | -0.0013* | 0.0016   | 0.0091  | -0.0040*    |
| Food and drink                  | -0.0739*     | 0.0132*  | 0.0345*          | -0.0179*          | -0.0328*            | -0.0490*            | 0.0075*  | 0.0095*  | -0.0099* | -0.0128* | -0.0640* | -0.0437* | 0.0311* | 0.0027      |
| Fuel and lighting               | -0.013*      | 0.0003   | -0.0016*         | 0.0021*           | 0.0020*             | -0.0003             | -0.0011  | -0.0038* | -0.0012  | -0.0013  | -0.0057* | 0.0052*  | -0.018* | 0.0219*     |
| Miscellaneous                   | 0.057*       | -0.012*  | -0.041*          | -0.0135*          | -0.0015*            | -0.0026*            | -0.010*  | -0.0002  | -0.016*  | -0.018*  | 0.067*   | 0.019*   | -0.025* | 0.02*       |

**Note:** where\* P < 0.01, \*\* P < 0.05, \*\*\* P < 0.1

Results of Table 2 support Engel's law showing that with the increase in the total expenditure, the budget share on food and drink decreases in the case of both male and female-headed households<sup>9</sup>. The decrease is relatively more prominent in the case of female-headed households. Similar results are found by Siddique (1982). Furthermore, the budget shares of clothing, and fuel and lighting are negatively related to total expenditures in the case of both types of households. Findings also reveal that the budget shares of other non-food commodities increase with total expenditures. Among these, the shares of expenditures on education, durables, and miscellaneous relatively increase less in the case of households headed by a female, while the budget shares of entertainment, and healthcare increase more with the increase in total expenditures for male-headed households.

Findings also reveal that budget shares of food and drinks, and healthcare increase with the increase in age of household head. This may be due to the fact that a person becomes more diet and health-conscious when his/her age increases. These impacts are relatively larger for female-headed households. Similarly, we also find an increase in the budget shares of clothing and footwear, fuel and lighting, and education. On the other hand, the budget share of entertainment, durables, and miscellaneous are found negatively related to the age of household head in the case of both types of households. Similar findings are reported by Ding (2007) for the US.

In both male and female-headed households, the dependency ratio has a positive impact on the budget shares of food and drink, clothing and footwear, and education. In all three categories, the effects are greater for female-headed households than their male counterparts. In both types of households, however, the dependency ratio has a negative impact on the budget shares of fuel and lighting, entertainment, durables, healthcare, and miscellaneous<sup>10</sup>. In female-headed households, the decrease in budget shares of healthcare, durables, and miscellaneous is greater than in male-headed households, while the decrease in budget shares of entertainment is smaller.

Educational attainment plays a vital role in the consumption pattern of male-headed households. In the case of male-headed households, the budget shares of education, durables, healthcare, entertainment, and fuel and lightning increase with the increase in the level of education. For food and drinks, the results demonstrate that budget shares in both types of households decrease as the level of education of the household head increases. The decrease in budget shares for male and female-headed households increase significantly as the head moves from below primary to a higher level of education. The reason behind decrease in share of food and drinks is that usually more educated households have more income. They spend more on luxuries and a smaller share on necessities. Increases in educational attainment raise the shares of expenditure on education, and durables in female-headed households. However, the impact on entertainment is insignificant. This could be because female-headed households earn less than male-headed households with the same educational level and they choose less entertainment and spend more on productive activities like education.

The household head's occupation has a considerable effect on the budget shares of different consumption categories<sup>11</sup>. In both male and female led households, the budget share for food and drinking is smaller for households with higher status occupations. The earnings of heads with high status occupations are higher; therefore, their shares of budget are smaller, as predicted by Engle's law. The shares of

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<sup>9</sup> Results of F test given in Appendix B show that there are significant differences in the consumption patterns of male headed and female headed households in case of all 8 categories as the values of computed F is greater than critical F and thus reject the null of similar pattern.

<sup>10</sup> In case of female headed households the impact of dependency ration on fuel and lighting is statistically insignificant.

<sup>11</sup> In most of the cases results show that impacts of occupational status are insignificant in case of female headed households.



expenditure on durables are larger for households with employed heads than for households with jobless heads, owing to the obvious fact that employed heads have more income to spend on durables than unemployed heads. The findings for male-headed households also demonstrate that households with skill1 and skill2 levels of occupations have smaller budget shares on education while those with skill3 and skill4 levels of occupations have larger budget shares on education than households with no occupations.

Furthermore, shares of expenditure on clothing and footwear, fuel and lighting, and miscellaneous decrease when the household head moves to high-status occupations<sup>12</sup>. Results also reveal that budget shares for healthcare are higher for households with their heads' occupations of skill1, skill2, skill3, and skill4 relative to households without any occupation. This demonstrates that household heads with higher-paying jobs earn more money and better care of their health.

In the case of both male and female-headed households, the results of the regional dummy show that rural families have greater budget shares for education, and miscellaneous while urban households spend more on food and drinking, clothing and footwear, fuel and lighting, healthcare, durables, and entertainment. Due to their lack of easy access to educational institutions, rural households spend less on necessities (food, fuel and lighting, and clothing) and more on productive goods (education). The findings also suggest that households in Punjab spend a larger percentage of their budget on non-food items than KP. Compared to KP, households in Sindh and Balochistan have smaller budget shares on various commodities.

## 6. CONCLUSION AND POLICY IMPLICATIONS

This study used HIES-2013-14 data to examine the consumption patterns of male and female-headed households. The results of annual average expenditure share revealed that female-headed households had a larger budget share for clothing and footwear, healthcare, education, durables, fuel and lighting, and miscellaneous. Only in the categories of food and drinks, and entertainment do male-headed households spend more.

The regression-based analysis supported Engel's law by showing a decrease in the food and drinks budget share with the increase in total expenditures. We also found a negative relationship of budget shares of fuel and lighting, and clothing and footwear with total expenditures. However, the budget shares of education, entertainment, healthcare, durables, and miscellaneous were found positively related to total expenditure. The study also found an increase in budget shares of food and drinks, clothing and footwear, fuel and lighting, healthcare, and education and decrease in budget shares of entertainment, durables, and miscellaneous with the increase in age in case of both types of households. Furthermore, the budget shares of food and drinking, clothing and footwear, and education were found to increase while, on the other hand, the budget shares of fuel and lighting, healthcare, durables, miscellaneous, and entertainment were found to decrease with the increase in dependency ratio. Budget shares of education, entertainment, and durables responded positively to the level of education of household heads. Results also revealed that household heads with higher skill levels have smaller shares on food and drinks, clothing and footwear, fuel and lighting, and miscellaneous in their budgets while they have larger budget shares on education, and healthcare.

Based on the above findings, it is suggested that policies be implemented to boost household income. This will enhance household demand for goods. Investment and economic development will increase, increasing households' income levels and living standards. Furthermore, motivational strategies for people

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<sup>12</sup> though insignificant in most of the cases of female headed households

to achieve a high level of education should be used. A high level of education leads to prestigious jobs and higher earnings, resulting in a better quality of life. To live a better life, special measures should be taken to increase the income of those who work in elementary and clerical occupations.

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**Appendix A: Detail of Commodity Groups**

| <b>Commodity Group</b> | <b>Description</b>   |
|------------------------|--|
| Education              | Books and exercise notebooks/copies, School/college fees and private tuition fees, stationery, etc., other education expenses.   |
| Clothing and footwear  | Clothing, clothing material and services, footwear, and repair charges.  |
| Durables               | Motorcycle, car, air coolers, air conditioners, electric/ oil fans (ceiling, pedestal, table, exhaust), freezers, refrigerators, boiler, heater, geyser (electric, gas, oil), house and property expense   |
| Healthcare             | Hospitalization expenses, Purchase of medicine, laboratory and physician's charges, medical fees.  |
| Entertainment          | Recreation & reading, expenditure on hobbies, toys, photography, games, lodging charges, etc., radio and musical instruments, personal transport, and traveling  |
| Food and drinks        | Vegetables and fruits, pulses, meat, milk, juices, and drinks.   |
| Fuel and lighting      | Gas, electricity, fire-wood, kerosene oil, other household effects (bulbs, tubes, switches, battery cells, lampshades, etc.)   |
| Miscellaneous          | Stationery supplies such as pen, pencils, stapling machine, pin, etc. (other than education purpose), crockery & cutlery for daily use, taxes & fines, Transport expenditures, housing, and personal care. |

**Appendix B: F-test of Equality of Parameters of Two regressions**

| <b>Commodity Groups</b> | <b>Computed F</b>  | <b>Critical F</b> |
|-------------------------|--|-------------------|
| Education               | $F = \frac{(43.9177664 - 42.49982898) * (17782)}{42.49982898 * (13+1)} = 42.3$ | 2.13              |
| Clothing and footwear   | $F = \frac{(15.0895896 - 15.03310435) * (17782)}{15.03310435 * (13+1)} = 4.77$ | 2.13              |
| Durables                | $F = \frac{(4.04108214 - 4.03118486) * (17782)}{4.03118486 * (13+1)} = 3.11$   | 2.13              |
| Healthcare              | $F = \frac{(34.0765245 - 34.0085213) * (17782)}{34.0085213 * (13+1)} = 2.54$   | 2.13              |
| Entertainment           | $F = \frac{(16.1391633 - 15.63756608) * (17782)}{15.63756608 * (13+1)} = 40.7$ | 2.13              |
| Food and drink          | $F = \frac{(168.541766 - 167.0988593) * (17782)}{167.0988593 * (13+1)} = 8.63$ | 2.13              |
| Fuel and lighting       | $F = \frac{(29.8874273 - 29.8180482) * (17782)}{29.8180482 * (13+1)} = 2.95$   | 2.13              |
| Miscellaneous           | $F = \frac{(47.79417 - 47.58584) * (17782)}{47.58584 * (13+1)} = 5.55$         | 2.13              |