

An Intra-Provincial Analysis of Expenditure Elasticities and Household Economies of Scale

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Abstract

This study revolves around the analysis of expenditure elasticities and the household economies of scale in order to explore intra-provincial consumption patterns of Pakistan. The analysis is carried out for various food items using Household Integrated Economic Survey, which are usually consumed by the households. The included food stuffs are appeared as necessities of life. The commodities appeared to be more responsive towards any given change in income in rural areas as compared to urban areas. This fact is obvious because of the lesser purchasing power of the inhabitants of rural regions as compared to urban regions. On the other end, the consumers are having economies of scale towards the household size. This reveals the fact that bigger households or households with multiple members are able to achieve the same standard of living at lower per capita expenditures on goods than smaller households.

Keywords: Consumer Demand Analysis; HIES; Income and Expenditure Elasticities; Household Economies of Scale.

JEL classification: B21, D11, D12

1. Introduction

People residing in the overall World cannot live without food as it is considered as a fundamental necessity of life and it has several economic impacts in an individual's life. People make expenditures on different food commodities in order to attain utility and satisfaction as it is one of the essential nutritional ingredient in the household behavior for all the humans of the World. Whenever the analysis of consumer behavior is being carried out, it means that the consumption patterns regarding to the different food stuffs are being concerned. Exploration on changing consumer preferences, consumption patterns and expenditures for food and/or non-food items has always been an interest for the researchers. Significant changes are consistently being observed in consumption patterns and demand systems in Pakistan as well as other developed and

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developing countries. Consumption function is basically the association between the disposable personal income and the consumption of the consumer while keeping other things constant. Over the past few decades, various studies have estimated household consumption patterns in Pakistan.

Over the past few epochs, there are a lot of studies in which household consumption patterns have been estimated in Pakistan. Number of national and international researches were conducted on the consumption patterns, which includes Ahmad, Safdar and Sher (2012); Aziz and Malik (2010); Ahmad (2004); Malik and Siddique (2002); Deaton and Paxson (1998); Houssain and Jensen (1994); Burney and Khan (1991); Lorge and Lowdermilk (1991); Malik, Abbas and Ghani (1987); Ahmad and Ludlow (1987) and Siddiqui (1982). Almost all these studies have used Engel method with the help of the different specifications such as linear, semi-log, double-log, piglog, double-log inverse and semi-log inverse in order to estimate the expenditure elasticities.

The methodology used in this paper revolves around the “Engel curves” to analyze the food demand system in Pakistan. This methodology is considered to be a dominant tool in the household analysis. The functional form used in this paper is double-logarithmic specification from which the expenditure elasticities can be obtained. One of the reason of selecting the Engel curves, as pointed out by Engel (1895), is that it needs a minimum of data i.e. it contains only one demand equation, frequently in the shape of the food share in total expenditure.

Household economies of scale are one of the concepts which is essential to measure the living values of people. Thus the household size can be used to determine the economies of scale. The negative sign of the household size depicts that there is a negative relationship with consumption i.e. as the household size increases, there is a decline in the consumption of food item. Household Integrated Economic Survey (HIES) for the year 2010-11 is used and various food commodities have been taken for this purpose. The variables selected in this study are per capita consumption, per capita expenditures household size and total expenditures.

The main objectives of this paper are: (i) to calculate the Expenditure elasticities for various food commodities on the basis of Intra-Provincial analysis; (ii) to estimate the household size in order to explore the household economies of scale on the basis of Intra-Provincial analysis. The study is systematized as; section 2 depicts the methodology, section 3 contains the expenditure elasticities and household economies of scale on the basis of an Intra-Provincial analysis, section 4 contains overall conclusion of the study.

2. Data and Methodology

The data selected for this study is Household Integrated Economic Survey (HIES) for the year 2010-11. The commodities selected for this study are various major food items which are used by different households in the urban as well as the rural areas of Pakistan on monthly basis. These commodities include: Milk Fresh & Boiled, Milk packed, Beef, Mutton, Chicken Meat, Apple, Potato, Onion, Tomato, Salt, Red Chilies, Sugar, Wheat & Wheat Flour, Rice & Rice Flour, Mash, Moong, Masoor, Vegetable Ghee, Cooking Oil and Tea. The variables used in this study are: Per Capita Expenditures, Per Capita Consumption and Household size & Total Expenditures.

Engel's Method is being used in this paper in order to analyze the expenditure elasticities and household economies of scale. Engel's method was considered to be the consistent method, it pointed out that the economies of scale should cause the food share to increase as the household size increase, not decrease. A decline in the food share increases the welfare resources as well (Engel's first law). It also appeared to be a reasonable fact that the food share must decline whenever there was an increase in the welfare felt as the household size and the welfare resources increase in fraction. A decrease in the food share (defined earlier) was only expected whenever the food expenditure per capita decreases with constant PCE and in this case, welfare does not expect to increase.

In Engel's method, the commodities selected for estimation are generally used in terms of quantities for consumption. This happens because expenditure gives a better explanation of the quantity as well as quality of commodities consumed and also prevent from the problem of aggregation for heterogeneous commodities.² The equation for the Engel curve will be written as:

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

Where, E_i is the total expenditure on i^{th} consumption head by each household, Y is represented as the total income, α & β are unknown parameters and μ_i is the error term. Researchers have employed various functional forms of Engel curve for the sake of parametric analysis and out of which the double logarithmic form turned out to be the most appropriate specification. This is one of the commonly used functional forms and Engel himself used the double log

² See, for example, Burney and Khan (1991).

functional form in his paper of 1857. So the present study has made use of the double log specification of the Engel curve, which is as:

$$\ln E_{ij} = \alpha_{ij} + \beta_{ij} \ln PCC_{ij} + u_{ij} \quad (2)$$

Double-log specification is also considered as the basis for measuring the scale of economies and it tells about the correct shares of food and indicates welfare among different sizes & composition of the households, with lower food shares specified the higher welfare. This method conveys the positive economies of scale and an increase in the household size leads to a reduction in the share of food. By incorporating the total expenditures and household size as an independent variables, the Engel equation will become:

$$\ln E_{ij} = a_{ij} + b_{ij} \ln E_j + c_{ij} \ln HS_j + \mu_{ij} \quad (3)$$

3. Expenditure and Household Economies of Scale

This section elaborates the expenditure elasticities and household size elasticities across the rural and urban regions for all the four providences of Pakistan. Keeping in mind the number of provinces in Pakistan, this chapter is further divided in to four parts. Section 3.1 describes the expenditure and household size elasticities of Punjab. Section 3.2 focuses on the same theme for Sindh, followed by section 3.3 for Balochistan. Finally, section 3.4 is about the scenario of expenditure and household size elasticities for KPK.

It is worth mentioning here that as per theoretical perceptions, all the expenditure elasticities turned out to be positive, whereas all the household size elasticities are negative. The positive sign of expenditure elasticities is an indication that all the included food stuff are turned out to be normal goods and their magnitude, as lies between zero and one, is indicating that all the included items are necessities. The analysis of this part is based on the core assumption that consumption per-unit consumer depends only on the level of income per capita. On the other end, scale economies in consumption refer to a situation in which households with multiple members are able to achieve the same standard of living at lower per capita expenditures on goods than smaller households. Thus it is obvious that household economies of scale arise when households with multiple members share goods and making larger households better off at lower per capita expenditures, thus to this end, the negative sign of these elasticities justifies this notion.

3.1. Expenditure Elasticities and Household Economies for Punjab

The results of this part are exhibited in table 3.1.³ A bifurcation is made on the basis of rural and urban parts of the Punjab. As can be seen that all the expenditure elasticities are positive and reasonable in magnitude i.e. $1 > E_y > 0$, which indicates that all included food items are normal goods and necessities of life as well. Moving on the other side all the household size effects are negative indicating that the households attain economies in consumption with increase in household size.

The highest expenditure elasticity is observed in case of milk packed and lowest is for wheat and wheat flour. Furthermore the expenditure elasticity of milk packed is higher for urban region as compared to rural regions of the Punjab. It means that consumption of milk packed is more sensitive towards any given change in income in urban regions as compared to rural regions. Any increase in income will motivate the consumers to spend more on milk packed keeping in mind the quality of packed milk but on the other side any reduction in income will force the consumers to reduce the consumption of milk packed with greater extent.

For meat group, higher magnitudes for expenditure elasticities are observed in rural regions except for chicken. This is obvious that the majority of the low income consumers are residing in the rural regions thus they tend to increase the consumption of these meat items as their income increases and vice versa. The magnitude of sugar's expenditure elasticity is higher in rural regions as compared to urban regions. This fact could be justified on the fact that in rural regions cheaper substitutes are available and thus people tend to substitute sugar with those available substitutes as and when sugar become expensive, thus the expenditure elasticity of sugar is more elastic in rural regions as compared to urban regions. The same is true for pulses, vegetable ghee and cooking oils.

Moving towards the household economies of scale, the magnitudes in absolute form are higher in urban regions as compared to rural regions except for rice and rice flour and mash. All the signs of these scale economies are negative, which justify the existence of economies of scale in consumption towards these food items. This gives an expression to the possibility that, with given levels of income per person, a larger household may be in a position to attain a higher living standard than a smaller household. Thus having a look on the table, this is very clear that consumers of urban regions are enjoying the better living standards

³ For details, see Appendix.

while spending less on food items as there is an increase in their family members as compared to rural counterparts. Considered in terms of food stuffs, economies may arise in the purchasing, storage and preparation of food. The highest magnitude is observed in case of mutton. It can be observed that with one unit increase in family size, the expenditure on mutton is decreased by 0.09 percent. The same is true for chicken, beef, apples and cooking oils. For pulses, the magnitudes are more or less similar in rural and urban regions.

3.2. Expenditure Elasticities and Household Economies for Sindh

The results of this section are given in table 3.2.⁴ A split is made on the basis of rural and urban parts of the Sindh. Likewise the province of Punjab, it can be observed that all the expenditure elasticities are positive and passable in magnitude as well i.e. $1 > E_y > 0$, which reveal that all included food items are normal goods and necessities of life as well. Moving on the other side all the household scale effects are negative demonstrating that the households arrive at economies in consumption with a raise in household size.

Like the province of Punjab, in Sindh the paramount expenditure elasticity is experiential in case of milk packed but the lowest is for rice and rice flour. The lowest extent of expenditure elasticity was for wheat and wheat flour in case of Punjab but here a inconsistency is observed in case of Sindh and this could be given explanation for keeping in mind the lifestyle of the inhabitants of Sindh province. Additionally, the expenditure elasticity of milk packed is higher for rural region in comparison with the urban regions of the Sindh. It means that consumption of milk packed is more responsive towards any given change in income in rural regions as compared to urban regions. Any boost in income will instigate the consumers of rural regions to spend more on milk packed keeping in mind the quality of packed milk but on the other side any reduction in income will force the consumers to decrease the consumption of milk packed with larger degree.

Higher magnitudes for expenditure elasticities are observed in rural regions for meat group and this finding is in line with the Punjab. This is obvious that the majority of the low income consumers are residing in the rural regions thus they tend to amplify the utilization of these meat items as their income raises and vice versa. The scale of sugar's expenditure elasticity is higher in rural regions as compared to urban regions. This finding is also in line with the results of the Punjab. This fact could be defensible on the fact that in rural regions less

⁴ For details, see Appendix.

expensive stand-ins are accessible and thus people tend to surrogate sugar with those existing substitutes as and when sugar became expensive, thus the expenditure elasticity of sugar is more elastic in rural regions as compared to urban regions. The same is true for pulses and vegetable ghee. A different scenario is observed for cooking oil as the same is more responsive towards any given change in income in urban regions as compared to rural regions.

Moving towards the household economies of scale, the magnitudes in absolute form are higher in urban regions as compared to rural regions except for mutton, salt, chilies, sugar, wheat and wheat flour, rice and rice flour, mash, vegetable ghee and tea. Hence, all the signs of these scale economies are negative, which give good reason for the continuation of economies of scale in consumption towards these food items. This gives a manifestation to the likelihood that, with given levels of per capita income; a bigger household may be in a situation to manage a higher living standard than a smaller household. Thus having a look on table 3.2, this is very clear that consumers are getting pleasure from the better living standards while spending less on food items as there is an increase in their family members as compared to their matching part. The scale economies may arise in the acquisition, storage and preparation of food. For the urban regions, the highest magnitude is observed in case of milk pack. It can be observed that with one unit increase in family size, the expenditure on milk pack is decreased by 0.14 percent. And for the rural regions, the highest magnitude in absolute form is observed for mutton, where one unit increase in family size leads to reduction in the expenditure on mutton by 0.13 percent. For vegetable ghee, salt and pulses, the magnitudes are more or less similar in rural and urban regions.

3.3. Expenditure Elasticities and Household Economies for Balochistan

The results of this section are presented in table 3.3.⁵ A divide is made on the basis of rural and urban parts of the Balochistan. Likewise the previous two provinces, i.e. Punjab and Sindh, it is pragmatic that all the expenditure elasticities are positive and good enough in magnitude as well i.e. $1 > E_y > 0$, which reveal that all included food items are normal goods and necessities. Moving on the other side the entire household scale effects are negative signifying the notion that the households are enjoying economies in consumption with a lift up in household size.

In Balochistan, the paramount expenditure elasticities are observed in case of pulses but the lowest is for wheat and wheat flour. An interesting feature,

⁵ For details, see Appendix.

which evolves here, is the smaller magnitude of the expenditure elasticities of meat group, which means all meat items are less responsive towards any given change in income. This finding exemplifies the eating habits of the inhabitants of Balochistan. As the profession of most of the people is husbandry so the availability of meat items is very common to the people of Balochistan, thus the effect of change in income is minute towards their meat consumption but the same is very much obvious in case of pulses.

The same fact is true for the apples, as the expenditure elasticity of apple is quite low. In contrast the consumption of the apples is appeared to be more income responsive in the provinces of Punjab and Sindh. This could be justified as most of the apple is produced in the province of Balochistan thus the availability is quite high at less price which enhance the consumption of apple irrespective of the income level. Additionally, the expenditure elasticity of milk packed is higher for urban region in comparison with the rural regions. It means that consumption of milk packed is more responsive towards any given change in income in urban regions as compared to rural regions. Any boost in income will instigate the consumers of urban regions to spend more on milk packed keeping in mind the quality of packed milk but on the other side any reduction in income will force the consumers to decrease the consumption of milk packed with larger degree. This result is in line with the results of the Punjab.

The scale of sugar's expenditure elasticity is higher in rural regions as compared to urban regions. This finding is also in line with the results of the Punjab and Sindh. This fact could be invulnerable on the fact that in rural regions less expensive replacements are accessible and thus people tend to surrogate sugar with those existing substitutes as and when sugar becomes expensive, thus the expenditure elasticity of sugar is more elastic in rural regions as compared to urban regions. The same is true for pulses, tea and vegetable ghee. A different scenario is observed for cooking oil as the same is more responsive towards any given change in income in urban regions as compared to rural regions.

Moving towards the household economies of scale, the magnitudes in absolute form are higher in urban regions as compared to rural regions except for milk fresh and boiled, beef, potato, tomato, chilies, wheat and wheat flour, mash, masoor, and cooking oil. Hence, all the signs of these scale economies are negative, which give good reason for the continuation of economies of scale in consumption towards these food items. This gives a symptom to the probability that, with given levels of per capita income; a bigger household may be in a situation to manage a better living standard than a smaller household. Thus having

a look on table 3.3, this is very clear that consumers are getting pleasure from the superior living standards while spending less on food items as there is an increase in their family members. These scale economies may arise in the acquisition, storage and preparation of food. For the urban regions, the highest magnitude is observed in case of milk pack. It can be observed that with one unit increase in family size, the expenditure on milk pack is decreased by 0.26 percent. And for the rural regions, the highest magnitude in absolute form is again observed for milk pack, where one unit increase in family size leads to reduction in the expenditure on mutton by 0.099 percent. For vegetables, moong, and tea, the magnitudes are more or less similar in rural and urban regions.

3.4. Expenditure Elasticities and Household Economies for KPK

The results of this part are exhibited in table 3.4.⁶ A bifurcation is made on the basis of rural and urban parts of the KPK. As can be seen that all the expenditure elasticities are positive and realistic in magnitude i.e. $1 > E_y > 0$, which indicates that all included food items are normal goods and necessities. Moving on the other side all the household size effects are negative indicating that the households tend to get the better of economies in the consumption of food items with an increase in household size.

The highest expenditure elasticity is observed in case of milk packed and lowest is for wheat and wheat flour. Furthermore the expenditure elasticity of milk packed is higher for rural region as compared to urban regions. It means that consumption of milk packed is more sensitive towards any given change in income in rural regions as compared to urban regions. Any increase in income will motivate the consumers to spend more on milk packed keeping in mind the quality of packed milk but on the other side any reduction in income will force the consumers to reduce the consumption of milk packed with greater extent.

For meat group, higher magnitudes for expenditure elasticities are observed in rural regions except for mutton. This is obvious that the majority of the low income consumers are residing in the rural regions thus they tend to increase the consumption of these meat items as their income increases and vice versa. The magnitude of sugar's expenditure elasticity is higher in rural regions as compared to urban regions. This fact could be justified on the fact that in rural regions cheaper substitutes are available and thus people tend to substitute sugar with those available substitutes as and when sugar become expensive, thus the

⁶ For details, see Appendix.

expenditure elasticity of sugar is more elastic in rural regions as compared to urban regions. The same is true for pulses, vegetable ghee, cooking oils and tea.

Moving towards the household economies of scale, the magnitudes in absolute form are higher in urban regions as compared to rural regions except for chicken and wheat and wheat flour. All the signs of these scale economies are negative, which justify the existence of economies of scale in consumption towards these food items. This gives an expression to the possibility that, with given levels of income per person, a larger household may be in a position to attain a higher living standard than a smaller household. Thus having a look on the table 5.4, this is very clear that consumers of urban regions are enjoying the better living standards while spending less on food items as there is an increase in their family members as compared to rural counterparts. Considered in terms of food stuffs, economies may arise in the purchasing, storage and preparation of food. In urban regions, the highest magnitude is observed in case of milk and milk pack and mutton. It can be observed that with one unit increase in family size, the expenditure on mutton is decreased by 0.099 and 0.095 percent respectively. For vegetables, vegetable ghee, cooking oil and tea, the magnitudes are more or less similar in rural and urban regions.

4. Conclusion

This paper focuses on the double logarithmic specification of the Engel curve in order to determine the differences of consumption patterns and the preferences made by the people living in the rural and urban areas of Pakistan. The data used for this analysis is taken from the Household Integrated and Economic Survey of Pakistan (HIES) for the years 2010-11. The variables selected for this study are per capita expenditures, per capita consumption and household size. Our main focus was to find out the expenditure elasticities of various food commodities which are commonly used in Pakistan and then to see the impact of household size with the consumption of all these commodities.

The results of this study represent that all the expenditure elasticities are significant at one percent level. All the expenditure elasticities of food commodities which were selected for this study were normal goods and necessities because of their positive sign and less than one. The commodities appeared to be more responsive towards any given change in income in rural areas as compared to urban areas. This fact is obvious because of the lesser purchasing power of the inhabitants of rural regions as compared to urban regions.

Similarly, the economies of scale condition are also fulfilling that if there is an increase in the household size, a decline is seen in the consumption of the food commodities. The household size analysis approved the presence of the household economies of scale with the consumption of the various food items and proved the definition of economies of scale. This reveals the fact that bigger households or households with multiple members are able to achieve the same standard of living at lower per capita expenditures on goods than smaller households. Thus, it has been noticed that the households with huge family sizes are making the households poorer and this is the main reason why the consumption of the larger family sizes are low.

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Appendix

Table 3.1: Expenditure Elasticities and Household Economies for Punjab

Name of Commodities	Expenditure Elasticities			Household Economies of Scale		
	Total	Rural	Urban	Total	Rural	Urban
Milk Fresh & Boiled	0.202 (17.600)	0.220 (14.352)	0.178663 (10.35388)	-0.057096 (-15.00327)	-0.050423 (-9.867420)	-0.065927 (-11.51518)
Milk Packed	0.585 (10.961)	0.507380 (4.788943)	0.616688 (9.802374)	-0.108837 (-6.368895)	-0.106623 (-3.179887)	-0.114301 (-5.670147)
Beef	0.291 (17.876)	0.302830 (13.78150)	0.273502 (11.08097)	-0.076683 (-15.74112)	-0.075507 (-11.84808)	-0.081068 (-10.48615)
Mutton	0.340 (11.653)	0.364450 (7.061238)	0.290529 (8.061465)	-0.077050 (-8.335827)	-0.053653 (-3.625012)	-0.094652 (-7.907642)
Chicken Meat	0.288 (22.509)	0.263287 (15.52251)	0.290522 (15.28719)	-0.070465 (-17.46031)	-0.061648 (-11.66676)	-0.083479 (-13.71665)
Apple	0.372 (23.590)	0.383148 (16.58696)	0.342455 (15.69105)	-0.083193 (-16.96601)	-0.072790 (-10.70170)	-0.095823 (-13.45228)
Potato	0.178 (21.458)	0.207329 (19.02948)	0.139820 (10.93339)	-0.048597 (-17.78242)	-0.042722 (-11.85688)	-0.055025 (-13.00454)
Onion	0.212 (25.391)	0.216472 (19.38155)	0.198558 (15.87608)	-0.059442 (-21.84722)	-0.059574 (-16.39573)	-0.060906 (-14.82714)
Tomato	0.249 (21.467)	0.231988 (14.39723)	0.244841 (14.68271)	-0.070083 (-19.08138)	-0.065189 (-13.10919)	-0.079113 (-14.60029)
Salt	0.173 (18.621)	0.204104 (17.14854)	0.129497 (8.807628)	-0.048225 (-15.77931)	-0.037947 (-9.495105)	-0.060627 (-12.82923)
Chilies	0.148 (20.466)	0.168852 (17.49200)	0.126484 (11.55200)	-0.057881 (-24.67234)	-0.054696 (-17.44194)	-0.061124 (-17.22646)
Sugar	0.185 (22.884)	0.208884 (19.35917)	0.158845 (12.96152)	-0.053680 (-20.15522)	-0.050107 (-14.08896)	-0.057220 (-14.15561)
Wheat & Wheat Flour	0.041 (6.724)	0.063072 (8.772156)	0.028508 (2.985500)	-0.019133 (-9.476409)	-0.015866 (-6.587133)	-0.019918 (-6.172282)
Rice & Rice Flour	0.141 (11.216)	0.131347 (7.436447)	0.147403 (8.277081)	-0.045082 (-10.85179)	-0.047459 (-8.224319)	-0.044290 (-7.435799)
Mash	0.197 (12.731)	0.201639 (8.831391)	0.198776 (9.373973)	-0.066322 (-14.10523)	-0.067097 (-9.791801)	-0.066242 (-10.22595)
Moong	0.197 (16.763)	0.214042 (13.58939)	0.179397 (10.22053)	-0.059225 (-15.69662)	-0.057607 (-11.44344)	-0.060927 (-10.69614)
Masoor	0.191 (13.201)	0.207781 (10.21428)	0.176441 (8.699521)	-0.064706 (-14.26865)	-0.068019 (-10.82928)	-0.060057 (-9.174826)
Vegetable Ghee	0.148 (20.033)	0.168449 (18.40799)	0.115682 (9.381157)	-0.053872 (-22.78685)	-0.051353 (-17.34455)	-0.056807 (-14.40164)
Cooking Oil	0.199 (8.750)	0.263350 (5.493500)	0.152512 (6.151592)	-0.080984 (-10.73588)	-0.080035 (-5.223521)	-0.084337 (-10.13427)
Tea	0.201	0.215774	0.178434	-0.061778	-0.059822	-0.064840

(17.746) (14.16683) (10.47241) (-16.37037) (-11.80421) (-11.38897)

Note: t-values are given in parenthesis

Table 3.2: Expenditure Elasticities and Household Economies for Sindh

Name of Commodities	Expenditure Elasticities			Household Economies of Scale		
	Total	Rural	Urban	Total	Rural	Urban
Milk Fresh & Boiled	0.183714 (16.38780)	0.185696 (11.10770)	0.180475 (12.17373)	-0.052357 (-16.15232)	-0.044662 (-9.792369)	-0.068687 (-14.69277)
Milk Packed	0.478372 (4.153693)	0.750790 (1.507159)	0.478230 (4.024057)	-0.140450 (-4.119836)	-0.062004 (-0.633536)	-0.142957 (-4.004084)
Beef	0.286451 (19.13721)	0.286880 (12.81242)	0.282211 (14.44199)	-0.088641 (-22.31484)	-0.070150 (-13.05598)	-0.101819 (-17.03965)
Mutton	0.358565 (10.05791)	0.422955 (6.824272)	0.325281 (7.604926)	-0.125414 (-14.39942)	-0.130911 (-9.425464)	-0.117577 (-10.59383)
Chicken Meat	0.271586 (20.37323)	0.303096 (16.19507)	0.248750 (13.39715)	-0.087161 (-24.53925)	-0.076142 (-16.28903)	-0.093583 (-16.68944)
Apple	0.289556 (13.97699)	0.309295 (8.919421)	0.273934 (10.81020)	-0.098164 (-17.35867)	-0.083472 (-9.242208)	-0.106112 (-14.45444)
Potato	0.040308 (3.092878)	0.039316 (1.976803)	0.033570 (2.052352)	-0.013027 (-3.344971)	-0.010012 (-1.815277)	-0.029447 (-5.383952)
Onion	0.106282 (10.59293)	0.103857 (6.756965)	0.109491 (8.572930)	-0.043004 (-14.71024)	-0.033555 (-7.965430)	-0.058156 (-14.29148)
Tomato	0.171304 (12.20028)	0.141946 (6.461657)	0.195129 (10.94333)	-0.058250 (-14.64718)	-0.041173 (-7.197360)	-0.077415 (-13.62659)
Salt	0.177066 (16.94751)	0.217062 (16.77355)	0.121049 (7.328506)	-0.044564 (-14.71226)	-0.054508 (-15.93155)	-0.042472 (-7.782889)
Chilies	0.116663 (12.72150)	0.174666 (13.86840)	0.060794 (4.571356)	-0.033684 (-12.50257)	-0.039830 (-11.73238)	-0.027679 (-6.245792)
Sugar	0.181570 (16.46740)	0.245595 (16.16798)	0.115039 (7.360482)	-0.048083 (-14.92033)	-0.063466 (-15.80128)	-0.037478 (-7.192395)
Wheat & Wheat Flour	0.071715 (8.540318)	0.123168 (9.972401)	0.019239 (1.750933)	-0.014587 (-5.821796)	-0.022234 (-6.516847)	-0.009108 (-2.470370)
Rice & Rice Flour	0.075039 (4.291224)	0.097365 (3.568118)	0.065939 (3.130685)	-0.026433 (-5.079511)	-0.029507 (-3.918110)	-0.005969 (-0.843108)
Mash	0.281581 (8.525507)	0.357360 (4.278495)	0.262273 (7.592497)	-0.062740 (-5.839250)	-0.081471 (-3.683787)	-0.071399 (-6.110896)
Moong	0.245632 (21.67506)	0.264570 (15.61286)	0.234024 (15.28309)	-0.065510 (-21.09973)	-0.065428 (-15.71447)	-0.071131 (-14.92580)
Masoor	0.209802 (14.04754)	0.246938 (10.38799)	0.177181 (9.598172)	-0.059278 (-13.13927)	-0.067239 (-10.35297)	-0.066191 (-10.99345)
Vegetable	0.159939 (10.99924)	0.174098 (10.16946)	0.076403 (3.455666)	-0.025763 (-6.106564)	-0.036275 (-7.688504)	-0.034766 (-4.989324)
Cooking Oil	0.153803	0.102386	0.164517	-0.061832	-0.043690	-0.054718

	(8.479469)	(2.338070)	(9.441156)	(-11.16076)	(-3.650343)	(-9.517379)
Tea	0.194788	0.240529	0.153893	-0.050089	-0.050583	-0.048309
	(19.29498)	(16.91830)	(10.70529)	(-17.15711)	(-13.28904)	(-10.24812)

Note: t-values are given in parenthesis

Table 3.3: Expenditure Elasticities and Household Economies for Balochistan

Name of Commodities	Expenditure Elasticities			Household Economies of Scale		
	Total	Rural	Urban	Total	Rural	Urban
Milk Fresh & Boiled	0.205274 (6.631657)	0.278130 (6.609691)	0.152005 (3.310102)	-0.035113 (-4.819700)	-0.032494 (-3.405737)	-0.030339 (-2.636260)
Milk Packed	0.278373 (3.472705)	0.238455 (2.628615)	0.392203 (2.378514)	-0.159164 (-4.752051)	-0.098634 (-2.359783)	-0.263572 (-4.831004)
Beef	0.225934 (11.01493)	0.253903 (9.386544)	0.181482 (6.064040)	-0.026593 (-5.453459)	-0.035330 (-5.441586)	-0.008608 (-1.198228)
Mutton	0.257029 (8.473915)	0.309046 (7.710788)	0.187961 (4.033812)	-0.039493 (-5.464674)	-0.031352 (-3.347041)	-0.048641 (-4.161685)
Chicken Meat	0.228207 (12.88541)	0.301789 (14.01582)	0.123952 (4.114520)	-0.031128 (-6.975385)	-0.023465 (-4.337182)	-0.040657 (-5.249518)
Apple	0.169179 (4.236918)	0.148187 (2.446094)	0.199595 (4.029458)	-0.032118 (-3.133826)	-0.020465 (-1.235941)	-0.041595 (-3.442814)
Potato	0.129732 (8.132510)	0.137161 (6.652489)	0.121360 (4.794389)	-0.017459 (-4.302233)	-0.018458 (-3.516304)	-0.015044 (-2.289947)
Onion	0.210064 (12.21093)	0.238941 (10.51176)	0.168560 (6.466059)	-0.032534 (-7.497603)	-0.032054 (-5.566759)	-0.032028 (-4.796915)
Tomato	0.231898 (10.73042)	0.267243 (9.419646)	0.184299 (5.570476)	-0.045604 (-8.382666)	-0.046969 (-6.545372)	-0.040523 (-4.783352)
Salt	0.292103 (18.65920)	0.330999 (16.83942)	0.242732 (9.392633)	-0.052402 (-13.94607)	-0.044727 (-9.336757)	-0.060653 (-9.832364)
Chilies	0.203971 (9.761003)	0.219250 (7.980901)	0.192554 (5.973284)	-0.036236 (-6.868836)	-0.042569 (-6.111395)	-0.024814 (-2.989141)
Sugar	0.154710 (8.505771)	0.206984 (8.644996)	0.087552 (3.214256)	-0.015189 (-3.269956)	-0.001494 (-0.242817)	-0.027592 (-3.933123)
Wheat & Wheat Flour	0.022217 (1.727757)	0.033206 (1.985007)	0.018286 (0.950951)	0.004721 (1.439756)	0.014896 (3.481529)	-0.003372 (-0.679526)
Rice & Rice Flour	0.142939 (5.026732)	0.119634 (3.277210)	0.167518 (3.677969)	-0.001926 (-0.270165)	0.001893 (0.206778)	-0.013577 (-1.163823)
Mash	0.303533 (11.88414)	0.375180 (10.49458)	0.216602 (6.168917)	-0.064650 (-10.47308)	-0.067023 (-7.901815)	-0.057404 (-6.379070)
Moong	0.251326 (12.00086)	0.322826 (12.26761)	0.153758 (4.498469)	-0.066517 (-12.87196)	-0.064695 (-10.13869)	-0.066698 (-7.542920)
Masoor	0.371913 (17.04106)	0.422884 (15.39849)	0.288568 (8.223977)	-0.081980 (-17.51559)	-0.081313 (-12.98321)	-0.079297 (-11.28754)
Vegetable Ghee	0.161834 (9.050859)	0.199130 (9.253258)	0.118700 (3.823242)	-0.036905 (-8.488980)	-0.028487 (-5.390452)	-0.041908 (-5.477454)

Cooking Oil	0.289906 (6.219906)	0.211030 (3.496522)	0.379781 (5.298580)	-0.062290 (-4.668365)	-0.079344 (-4.001429)	-0.059482 (-3.201165)
Tea	0.123805 (6.333209)	0.151940 (6.062669)	0.096282 (3.114484)	-0.026167 (-5.276764)	-0.021205 (-3.322703)	-0.026274 (-3.288904)

Note: t-values are given in parenthesis

Table 3.4: Expenditure Elasticities and Household Economies for KPK

Name of Commodities	Expenditure Elasticities			Household Economies of Scale		
	Total	Rural	Urban	Total	Rural	Urban
Milk Fresh & Boiled	0.182432 (11.64132)	0.196668 (9.730192)	0.160612 (6.500587)	-0.049392 (-11.69073)	-0.049566 (-8.978441)	-0.048791 (-7.487395)
Milk Packed	0.390077 (7.704373)	0.448364 (6.250202)	0.367298 (5.090094)	-0.114809 (-8.900647)	-0.124605 (-6.840035)	-0.099505 (-5.338020)
Beef	0.229871 (13.22826)	0.250811 (10.84698)	0.211220 (8.033978)	-0.051767 (-11.70736)	-0.047765 (-8.139066)	-0.054688 (-8.038906)
Mutton	0.165000 (1.573243)	0.181012 (1.185440)	0.232950 (1.626049)	-0.120244 (-5.693819)	-0.140525 (-3.692123)	-0.094458 (-3.789235)
Chicken Meat	0.307186 (13.80645)	0.347588 (12.26654)	0.281485 (7.857517)	-0.078831 (-15.82674)	-0.082558 (-13.00428)	-0.069455 (-8.576825)
Apple	0.252096 (10.64039)	0.270611 (9.264442)	0.233264 (5.751404)	-0.070952 (-11.76004)	-0.063571 (-8.376891)	-0.082662 (-7.956321)
Potato	0.201879 (16.13022)	0.216298 (13.70880)	0.180584 (8.701106)	-0.051140 (-15.48429)	-0.050414 (-11.97767)	-0.052292 (-9.674925)
Onion	0.229981 (17.76752)	0.252095 (15.66280)	0.206231 (9.470532)	-0.055368 (-16.21914)	-0.049281 (-11.38672)	-0.062078 (-11.07787)
Tomato	0.228594 (16.31482)	0.238902 (13.60947)	0.229644 (9.924366)	-0.055045 (-14.79440)	-0.052535 (-11.10617)	-0.054911 (-9.057948)
Salt	0.240683 (14.87447)	0.254737 (12.53904)	0.214639 (7.914372)	-0.044180 (-10.19139)	-0.037386 (-6.815115)	-0.056874 (-7.912888)
Chilies	0.223848 (10.39884)	0.248630 (8.427123)	0.197029 (6.262242)	-0.063989 (-11.84880)	-0.062331 (-8.225446)	-0.066083 (-8.553263)
Sugar	0.160973 (12.22251)	0.190880 (10.74136)	0.112101 (5.880621)	-0.029914 (-8.331912)	-0.026107 (-5.310000)	-0.035680 (-7.018159)
Wheat & Wheat Flour	0.066810 (7.698202)	0.083418 (7.379436)	0.031218 (2.341302)	-0.012236 (-5.198204)	-0.015124 (-4.854372)	-0.008187 (-2.330829)
Rice & Rice Flour	0.114767 (5.086900)	0.094183 (3.072435)	0.107028 (3.464297)	-0.036071 (-5.840259)	-0.044535 (-5.247567)	-0.037586 (-4.523293)
Mash	0.286740 (12.96031)	0.345556 (10.85577)	0.245111 (7.878004)	-0.068860 (-12.75139)	-0.060518 (-7.391436)	-0.073823 (-10.29829)
Moong	0.284166 (11.86145)	0.309685 (9.741821)	0.256714 (6.835259)	-0.058728 (-9.610651)	-0.045025 (-5.479665)	-0.077756 (-8.319118)
Masoor	0.285637 (9.219610)	0.328902 (8.127745)	0.230713 (4.774081)	-0.071085 (-9.906821)	-0.065520 (-7.002504)	-0.078896 (-6.803792)
Vegetable	0.114449	0.123373	0.103553	-0.024353	-0.025341	-0.021389

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Ghee	(11.79767)	(10.37579)	(6.119839)	(-9.275080)	(-7.831020)	(-4.713322)
Cooking Oil	0.241909	0.317896	0.205570	-0.068516	-0.067370	-0.068989
	(6.639208)	(5.648812)	(4.299196)	(-6.974916)	(-4.148591)	(-5.386072)
Tea	0.140850	0.147206	0.125087	-0.023443	-0.022458	-0.026697
	(12.18825)	(9.692297)	(7.107761)	(-7.392750)	(-5.312808)	(-5.656243)

Note: t-values are given in parenthesis