

SOCIOECONOMIC DETERMINANTS OF HOUSEHOLD FOOD CONSUMPTION PATTERNS: A COMPARATIVE STUDY OF URBAN AND RURAL AREAS OF DISTRICT PESHAWAR

Dr. Reema Zia

IDS, The University of Agriculture Peshawar Pakistan

reemazia800@gmail.com

Corresponding Author: *

Dr. Reema Zia

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ABSTRACT

The research was conducted with the objective to compare the food consumption pattern in the urban and rural areas of district Peshawar. Data were collected from an urban area Hayatabad and a rural area Chmakani. Sample households randomly selected for the interview from urban and rural area were 49 and 53 respectively. The main findings of the study showed that average household size in the rural area was 8.9 while in the urban area it was 7.2. Literacy rate in the rural area was found to be 43.4 % while in the urban area literacy rate was 89.7 %. Monthly average household income in the rural area was Rs.17169.8/ month, while urban monthly average income was Rs. 89510.2/ month. Major food groups compared on the basis of household income were meat, flour, milk, fruits, vegetables, pulses and edible fats. From the results It was found that household income had significant effect on the consumption of meat, fruits, vegetables, milk, pulses, ghee where as it had insignificant effect on the consumption of wheat flour and oil. In the rural area major portion of household income was spent on flour, vegetables and edible fats while in the urban area major portion of household income was spent on meat, fruits, vegetables, rice and milk. An average urban household used to consume 304.51 kg of food commodities per month. The largest quantity of food commodity consumed was that of fruits followed by flour, vegetables, milk and rice. In the rural area average per month consumption of food commodities was 171.18 kg. The largest quantity of commodity consumed was that of flour followed by vegetables, milk and sugar. There was significant difference in food consumption between urban and rural area therefore it was recommended that job opportunities and education facilities should be increased in the rural area to get the permanent solution of the problem. More over prices of certain food commodities should be reduced and availability of food goods should be increased by increasing investment in agriculture and developing market structure to facilitate the low income consumers.

Keywords: Food products, Consumption pattern, Rural area, Urban area, Income effect.

1. Introduction

Human life is mainly dependent on consumption for its nourishment. The World's consumption is expanding at a paramount rate since last few decades. In this era people are benefitted with more consumption facilities having better housing and food facilities then before.

Consumption contributes to human advancement without affecting the betterment of other people, but still there are wide differences in consumption patterns of different regions, income classes, Gender groups, rural and urban areas which are not decreasing but instead

increasing with the passage of time. (Geetha, 2011).

Food being one of the important consumption patterns, is the necessity of life. Every individual needs minimum amount of food for survival and a balanced diet for being healthy. But unfortunately where there are availability problems of food, the problems of denial and unawareness about balance diet also exists especially in rural masses. This ignorance mainly leads to health problems which affects economic growth of a country as well. (Safia et al.,2010).

Food consumption mainly depends on income, price level, household size, number of households earning in a family, energy content, health properties, taste and preferences, status or prestige, environmental effects and convenience attributes. Among all these factors income is the major one which affects food consumption pattern. According to Engel's law "The percentage of income spent on food declines as income rises" . It means that lower income category spends more on food while middle and high income categories expend more on non food goods than food goods. Rich countries like USA, Canada and Greece annually spends 8.9 %, 9.1 % and 14.2 % of their income on food respectively while poor and densely populated countries like India, Nigeria and Pakistan spends 35.8 %, 40.1 % and 45.4 % of their income annually on food respectively. (Washington State magazine, 2006).

Pakistan is a developing and basically an agricultural country but food consumption in Pakistan is not satisfactory. Improper food intake is considered as one of the major reasons for micronutrient deficiencies in Pakistan. (Saeeda, 2012). Government of Pakistan defined poverty line as income providing food which can provide 2350 calories per adult-equivalent per day (CRPRID, 2002). Average spending on food in a poor country like Pakistan is less than \$2 per day (PRB, 2009).

Big portion of world population is poor and is living in rural areas, about three-fourth of it lives in rural areas. The two main partitions in Pakistan are rural and urban. Two-third of Pakistan's population is living in rural areas, rural population last reported in 2011 was 63 % of

total population and urban population was reported to be 36.2 %, while Female percentage in total population was 49.19 % and male percentage of the total population was 50.81 %. (WB, 2012).

The study was aimed to see whether food consumption varies significantly between different income groups in the rural and urban areas . For this purpose a rural and an urban area of Peshawar were purposely selected to compare the effect of family income on the food consumption pattern between these areas with the following objectives.

Objectives of the Study

The main objectives of the food consumption study were as follows.

1. To study the food consumption patterns in urban and rural areas of Peshawar.
2. To find out the differences in food consumption pattern in urban and rural areas of Peshawar.
3. To estimate the effect of Household income on food consumption pattern of the households.

Hypotheses of the Study

1. There is no difference in the food consumption pattern in urban and rural areas of Peshawar.
2. Household income does not play any role in the food consumption pattern of the Households.

Material and Methods

Study Area

Two areas of District Peshawar were purposely selected to study the food consumption pattern. Urban area Selected was Hayatabad Phase-6 while rural area selected was Chamkani.

Sampling Design

Total number of households in phase-6 and Chamkani were 4063 and 4397 respectively as given in table No.1. By applying propotional allocation method total sample size of 102 was obtained (sample selected from phase-6 was 49 while from chamkani was 53)

Area	Average	Minimum	Maximum
Rural	8.9	3	34
Urban	7.2	2	18

Table 1 Number of Sample Households.

Area	No. of Households	Sample Selected
Phase 6 (Hayatabad)	4063*	49*
Chamkani	4397**	53**
Total	8460	102

Source (Urban Area)*: Building Control Agency, PDA Peshawar (2012).

(Rural Area)**: National Immunization Department Survey (2013).

Nature and Sources of Data

Primary and secondary both data were used in research study. Primary data was collected through interview method from the households of the study areas. The nature of the questions were qualitative as well as quantitative.

Analytical Methods

Log linear model including both quantitative and qualitative variables was used to estimate food consumption in urban and rural areas of Peshawar.

$$\ln Y = \alpha_0 + \alpha_1 \ln X_1 + \beta_1 D_1 + e_i \dots \dots \dots 3.1$$

Where

$\ln Y$ = Natural log of Food Consumption (kg/month)

$\ln X_1$ = Natural log of Household Income (Rs./month)

D_1 = Area type Dummy (Urban Area = 1, Rural Area = 0).

e_i = Error Term.

Results and Discussion

Household Size and Composition

The household size is an important factor of the family, community and a country as well. Family size is influenced by factors such as economic, cultural, environmental and education (Lewis, 2005).

The table No.2 provides information about distribution of the sample households according to average household size in urban and rural area. The average household size in the rural area was 8.9 with minimum household size 3 and maximum 34 while in the urban area the average household size was 7.2 with minimum household size 2 and maximum 18.

Table 2 Distribution of the Sample Households According to Average Household Size In Urban And Rural Area.

Source: Survey data, 2013

Literacy Level

“Education is the most powerful weapon we can use to change the world” (Nelson Mandela). Education is a self enlightening process which is crucial for the development of an individual and a society as a whole (Oak, 2013).

Table No. 3 shows distribution of sample household heads according to literacy level. 43.4 % rural household heads where as 89.7 % urban household heads were found literate, whereas 56.6% rural household heads and 10.2 % urban household heads were found illiterate. In the Rural area 28.3 % households heads were primary, secondary 11.3 % while 3.7% were higher secondary. On the other hand in the Urban area 6.1 % were primary, secondary 10.2% , higher secondary 16.3 % , bachelors 26.5 % and 30.6 % were masters.

Table 3 Distribution of Sample Household Heads According To Literacy Level.

<i>Area</i>	<i>Illerate</i>	<i>Literate</i>	<i>Literacy Level</i>					
			Primary	Secondary	Higher Secondary	Bachelors	Masters	Total
<i>Rural</i>	30 (56.6%)	23 (43.4%)	15 (28.3%)	6 (11.3%)	2 (3.7%)	–	–	53 (100%)
<i>Urban</i>	5 (10.2%)	44 (89.7%)	3 (6.1%)	5 (10.2%)	8 (16.3%)	13 (26.5%)	15 (30.6%)	49 (100%)

Source: Survey data, 2013

Occupation

Labour is the essential element of life. The socioeconomic status and the value of life of individuals depends on the occupation they acquire. Profession not only helps in earning income but it also helps in establishing social networks. (Westover, 2010).

The table No.4 show the distribution of the sample respondents according to the occupation.

The sample respondents were involved in different occupations. As is clear from the data the highest percentage of the respondents i.e 62.3 % in the rural area were involved in labour, 20.7 % in private jobs, 13.2 % in other jobs (doing more than one job e.g govt job along with some private business etc) while only 3.7 % did govt. jobs.

Table 4 Distribution of Sample Respondents According To Occupation.

<i>Occupation</i>	<i>No. of Rural HHS</i>	<i>Percent</i>	<i>No. of Urban HHS</i>	<i>Percent</i>
<i>Labour</i>	33	62.3	–	–
<i>Business</i>	–	–	10	20.4
<i>Govt. Job</i>	2	3.7	23	46.9
<i>Private Job</i>	11	20.7	3	6.1
<i>Other Jobs</i>	7	13.2	13	26.5
<i>Total</i>	53	100	49	100

Source: Survey data 2013

In the urban area highest percentage of respondents i.e about 46.9 % did govt. jobs, 26.5% were involved in other jobs e.g doing more than one job, 20.4% in business whereas only 6.1 % did private jobs. Highest percentage of the respondents in the rural area were involved in labour due to lack of education and the lack of employment opportunities, whereas in the urban area highest percentage of the respondents were involved in doing govt. jobs due to more employment opportunities, better education facilities and high literacy rate in the urban area.

Income Level

The table no.5 depicts the distribution of the sample respondents according to the income level. As most people in urban area were literate and income earning opportunities were much better in urban area so household income level was much higher in the urban area as compared to the rural area.

In rural area highest percentage of the households i.e 59.6 % of the household's income ranged between 10 to 20 thousand while in urban area highest percentage of households i-

e 32.7% household's income ranged between 50 to 80 thousand.

Table 5 Distribution of Sample Respondents According To Income Level.

<i>Income Level</i>	<i>No. of Rural HHS</i>	<i>Percent</i>	<i>No. of Urban HHS</i>	<i>Percent</i>
<i>Up to 10,000</i>	12	23.1	–	–
<i>10,001 – 20,000</i>	31	59.6	2	4.1
<i>20,001 – 30,000</i>	6	11.5	1	2
<i>30,001 – 50,000</i>	3	5.8	9	18.4
<i>50,001 – 80,000</i>	–	–	16	32.7
<i>80,001 – 1,10,000</i>	–	–	6	12.2
<i>1,10,001 – 1,50,000</i>	–	–	10	20.4
<i>1,50,001 – 2,00,000</i>	–	–	5	10.2
<i>Total</i>	53	100	49	100

Source: Survey data 2013

In the rural area second highest percentage of households i.e 23.1 % fell in the income level of 10,000 or below, whereas in the urban area second highest percentage of households i.e 20.4 % fell in the range of 1,00,000-150,000. Households in the urban area enjoyed a high income level as compared to the rural area.

Table No.6 depicts income level of the sample households in the urban and rural area. In the

rural area average household income was Rs.17169.81/ month with minimum income Rs.6000/month and maximum Rs.48,000/month. While in the urban area average household income was Rs.89510.20/month with minimum Rs.20,000/month and maximum Rs.2,00,000/month.

Table 6: Distribution of the Sample Households According To Monthly Income Level In The Urban And Rural Area.

<i>Study Area</i>	<i>No. of Sample Households</i>	<i>Minimum Income (Rs. / month)</i>	<i>Maximum Income (Rs. / month)</i>	<i>Mean Income (Rs. / month)</i>
<i>Phase-6 (Hayatabad)</i>	49	20,000	2,00,000	89510.20

<i>Chamkani</i>	53	6000	48000	17169.81
<i>Total</i>	102	26000	2,48,000	106680.01

Source: Survey Data, 2013

Consumption of Food Commodities

To analyze the effect of household income on food consumption in both areas the following model was used.

$$\ln Y = \alpha_0 + \alpha_1 \ln X_1 + \beta_1 D_1 + e_i$$

Where

- $\ln Y$ = Natural log of Food consumption (Kg/month)
- $\ln X_1$ = Natural log of Household Income (Rs./ month)
- D_1 = Area type Dummy (Urban Area = 1, Rural area = 0).
- U_i = Error Term

Table 7. Factors Affecting Food Consumption in the Urban and Rural Area.

Regression Results				
Food Commodities	Ols	Co-eff	t-ratio	Sig
<i>Flour</i>				
Constant		2.80	3.49	0.001
<i>ln</i> HHI		0.156	1.83	0.070
D ₁		-0.945	-5.83	0.000
R ² -value		0.40		
<i>Beef</i>				
Constant		-0.509	-0.568	0.571
<i>ln</i> HHI		0.199	2.14	0.034
D ₁		0.595	3.38	0.001
R ² -value		0.504		
<i>Fish</i>				
Constant		-2.83	-1.834	0.073
<i>ln</i> HHI		0.325	2.12	0.039
D ₁		0.654	2.06	0.044
R ² -value		0.316		
<i>Poultry</i>				
Constant		-4.82	-4.32	0.000
<i>ln</i> HHI		0.540	4.74	0.000
D ₁		0.569	2.71	0.008
R ² -value		0.679		
<i>Fresh Milk</i>				
Constant		0.175	0.159	0.874

<i>ln</i> HHI	0.231	2.06	0.043
D ₁	0.455	2.17	0.033
R ² -value	0.419		
<i>Packed Milk</i>			
Constant	0.228	0.277	0.783
<i>ln</i> HHI	0.218	2.533	0.014
D ₁	0.421	2.392	0.020
R ² -value	0.556		
<i>Vegetables</i>			
Constant	-1.793	-1.727	0.087
<i>ln</i> HHI	0.477	4.442	0.000
D ₁	0.065	0.318	0.751
R ² -value	0.447		
<i>Fruits</i>			
Constant	-2.553	-2.705	0.008
<i>ln</i> HHI	0.478	4.900	0.000
D ₁	0.675	3.649	0.000
R ² -value	0.731		
<i>Pulses</i>			
Constant	-1.332	-1.518	0.132
<i>ln</i> HHI	0.311	3.43	0.001
D ₁	0.630	3.701	0.000
R ² -value	0.630		
<i>Ghee</i>			
Constant	-0.462	-0.418	0.667
<i>ln</i> HHI	0.287	2.515	0.014
D ₁	-1.319	-5.998	0.000
R ² -value	0.442		
<i>Oil</i>			
Constant	0.440	0.393	0.696
<i>ln</i> HHI	0.129	1.130	0.263
D ₁	0.692	3.028	0.001
R ² -value	0.38		

Source: Survey Data, 2013

Table No.7 shows factors affecting food consumption in the study areas. The household income effect on the consumption of meat, milk, vegetables, fruits, pulses and ghee was significant while it had insignificant effect on the

consumption of wheat flour and oil. Dummy variable shows that consumption of meat, milk, fruits, pulses and oil was significantly higher in the urban area, while consumption of wheat flour and ghee was significantly higher in the rural area.

The dummy effect on vegetables consumption was in significant.

Percentage Share of Food Commodities in Total Food Expenditure.

Table No.8 shows the total expenditure on various food commodities as well as expenditure on food commodities as percentage of total expenditure on food and as percentage of total income.

Table .8 Monthly Expenditure On Food Commodities (Rs./ month) in Urban and Rural Area.

<i>Food Commodity (Kg/month)</i>	<i>Tot. Expenditure (Rs./month)</i>		<i>Commodity Expenditure As% of Tot. Expenditure On Food (Rs./month)</i>		<i>Commodity Expenditure As % of Tot. Household Income(Rs./month)</i>	
	<i>Urban</i>	<i>Rural</i>	<i>Urban</i>	<i>Rural</i>	<i>Urban</i>	<i>Rural</i>
Flour	3212.1	4104.8	12.29	30.9	3.54	23.69
Meat						
Beef	1651.8	636.9	6.32	0.81	1.82	3.67
Mutton	963.2	0	3.68	0	1.06	0
Poultry	1991.0	278.8	7.618	0.10	2.19	1.60
Fish	522.04	3.03	1.99	0.023	0.57	0.017
Eggs (Dozen)	571.83	314.03	2.18	2.37	0.63	1.812
Total Meat	5128.13	918.67	19.6	6.91	5.64	5.27
Rice						
Basmati	2503.06	469.71	9.57	3.54	2.76	2.71
Irri	318.02	182.69	1.21	1.37	0.35	1.05
Total Rice	2821.08	652.4	10.78	4.91	3.11	3.76
Pulses						
Mash	214.48	255.7	0.82	1.93	0.23	1.47
Masoor	163.5	230.57	0.625	1.74	0.18	1.33
Kidney Beans	410.3	244.5	1.57	1.84	0.45	1.41
Chana	310.12	216.7	1.18	1.63	0.34	1.24
Total Pulses	1098.4	946.83	4.19	7.14	1.20	5.45
Vegetables						
Onion	285.71	331.9	1.09	2.50	0.31	1.91
Tomato	1190	511.9	4.55	3.86	1.31	2.95
Potato	1039.18	427.1	4.21	3.22	1.14	2.46
Pump Kin	110.2	130.4	0.42	0.98	0.12	0.75
Cauli Flower	228.4	127.6	0.87	0.96	0.25	0.73
Turnip	171.8	51.92	0.65	0.39	0.18	0.29
Round Gourd	222.4	130.38	0.85	0.98	0.24	0.75
Total Vegetables	3075.90	1711.2	12.4	12.89	3.55	9.84
Fruits						
Apple	794.6	121.5	3.04	0.91	0.87	0.70
Grapes	570	120.9	2.18	0.91	0.62	0.69
Mango	1111.60	128.07	4.25	0.96	1.22	0.73
Watermelon	598.5	91.5	2.29	0.69	0.66	0.52
Pomegranate	501.2	46.15	1.91	0.34	0.55	0.26
Banana	127.34	120.7	2.4	0.912	0.69	0.69

Apricot	332.04	712.28	1.27	0.63	0.36	0.48
Total Fruits	4035.31	712.28	17.34	4.73	4.976	4.07
Milk						
Open Milk	1157.9	963.23	4.43	7.27	1.27	5.55
Milk pack	1412.2	468.40	5.40	3.53	1.55	2.70
Total Milk	2570.1	1431.6	9.83	10.8	2.82	8.25
Edible Fats						
Cooking Oil	1866.73	31.9	7.14	0.24	2.05	0.18
Vanaspati	318.3	1511.34	1.21	11.4	0.35	8.72
Total Edible Fats	2185.03	1543.24	8.35	11.64	2.4	8.90
Sugar	858.53	763.07	3.28	5.76	0.94	4.40
Spices	184.93	145.9	0.70	1.10	0.20	0.84
Total	25741.38	13244.05	100	100	29	76.27

Source: Survey Data, 2013

As far as major food commodity groups are concerned in the urban area meat accounted for largest percentage of the total expenditure on food, followed by fruits, vegetables, flour, Rice, milk, edible fats, sugar, eggs and spices. These results shows that in the urban area the major portion of expenditure on food was spent on meat, fruits, vegetables, flour, rice, and milk. In the rural area major portion of food expenditure was spent on flour followed by vegetables, edible fats, milk, pulses, meat, sugar, rice, fruits, eggs and spices. The results declare that in the rural area major portion of food expenditure was spent on flour, vegetables, fats and milk.

The major portion of household income in the urban area was spent on meat, followed by fruits, vegetables, flour , rice, milk, edible fats, pulses, sugar , eggs and spices .In the rural area major

portion of the household income was spent on flour followed by vegetables, edible fats, milk, pulses, meat, sugar, fruits, rice, eggs and spices.

Monthly Average Consumption of Food Commodities In Urban And Rural Area:

As shown in the table No.9 an urban household used to consume 304.51 kg of food commodities on average per month. The largest quantity of food commodity consumed was that of fruits followed by flour, vegetables, milk, rice, sugar, meat, edible fats, pulses, eggs and spices. In the rural area average per month consumption of food commodities was 171.18 kg. The largest quantity of commodity consumed was that of flour followed by vegetables, milk , sugar, fruits, edible fats, pulses, rice, meat, eggs and spices.

Table 9 Monthly average consumption (Kg/month) and expenditure (Rs./month) on Food Commodities in Urban and Rural Areas

<i>Food Commodity (kg/month)</i>	<i>Consumption (kg/month) Urban area</i>	<i>Consumption (kg/month) Rural area</i>	<i>Value (Rs/month) Urban area</i>	<i>Value (Rs/month) Rural area</i>
Flour	60.5	74.9	3212.14	4104.8
Meat				
Beef	6.05	2.40	1651.83	636.9
Mutton	1.28	0	963.26	0

Poultry	7.38	1.11	19910.0	278.8
Fish	2.16	0.13	522.04	19.23
Eggs (Dozen)	8.63	3.02	571.83	314.03
Total Meat	16.87	3.64	5128.13	918.67
Rice				
Basmati	17.1	3.66	2503.06	469.71
Irri	6.35	3.65	318.02	182.69
Total Rice	23.47	7.31	2821.08	652.4
Pulses				
Mash	2.14	1.78	214.48	255.76
Masoor	1.16	1.60	163.5	230.57
Kidney Beans	3.64	2.34	410.3	244.5
Chana	2.70	2.06	310.12	216.7
Total Pulses	9.64	7.78	1220.85	946.83
Vegetables				
Onion	7.14	5.32	285.71	331.9
Tomato	11.9	5.05	1190	511.9
Potato	17.3	6.18	1039.18	427.1
Pump Kin	2.11	2.42	110.2	130.4
Cauli Flower	7.61	2.51	228.4	127.6
Turnip	8.59	1.73	171.8	51.92
Round Gourd	4.44	2.25	222.4	130.38
Total Vegetables	59.09	25.46	3075.9	1711.2
Fruits				
Apple	10.70	1.82	794.6	121.5
Grapes	7.92	1.76	570	120.9
Mango	15.46	1.73	1111.63	128.07
Watermelon	10.04	2.42	598.5	91.5
Pomegranate	6.77	0.48	501.2	46.15
Banana	10.8	1.82	127.34	120.7
Apricot	5.04	1.21	332.04	712.28
Total Fruits	66.73	11.24	4035.31	712.28
Milk				
Open Milk	16.9	11.59	1157.9	963.23
Milk Pack	14.11	5.01	1412.2	468.40
Total Milk	31.01	16.6	2570.1	1431.6
Edible Fats				
Cooking Oil	9.31	0.211	1866.73	31.9
Vanaspati	1.59	7.77	318.3	1511.34
Total Edible Fats	10.9	7.98	2185.03	1543.24
Sugar	17.17	12.5	858.53	763.07
Spices	0.50	0.75	184.93	145.9
Total	304.51	171.18	25741.38	13244.05

Source: Survey data 2013

CONCLUSION & RECOMMENDATIONS

From the research study it was concluded that there was significant difference in the food consumption pattern in the rural and urban area. In the urban area portion of income spent on meat, fruits, milk and oil was relatively high while in the rural area major proportion of income was spent on flour, vegetables and edible fats. Major factor affecting food consumption was household income.

Based on the present study, following recommendations were suggested

1. Education facilities and job opportunities should be increased by the concerned authorities in the rural areas to enhance their purchasing power.
2. Policy measures should be taken to increase the investment in agriculture so that the supply of food commodities could be increased and develop market structure in the rural areas to facilitate the low income consumers.

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