SOCIO ECONOMIC FACTORS AFFECTING FOOD CONSUMPTION PATTERN IN RURAL AREA OF DISTRICT NOWSHERA, PAKISTAN

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ABSTRACT

A study was conducted to determine the food consumption pattern in a rural area of district Nowshera village Kaka Sahib in year 2005. The major objective was to investigate the influence of socio economic factors on food consumption patterns in the rural area of Khyber Pakhtunkhwa Province of Pakistan. A random sample of 66 households was interviewed through a pre-designed questionnaire inquiring about household size, rate and level of education, total monthly income, and expenditure on various food commodities consumed. An ordinary least squares method was employed to analyze the data. The results indicated that an average household size of 8.5 persons with a literacy rate of 94 percent, spent fifty-five percent per month of the total monthly income on food consumption. The empirical results revealed that wheat flour, milk, rice, vegetables, sugar, edible fats and tea were positively correlated with household size but meat, pulses, eggs and fruit were not significantly influenced by it. Similarly, household's monthly total income showed a positive relationship with the food commodities consumed, except wheat flour, vegetables and eggs. It may be concluded that majority of food commodities consumed had a positive response to household size and total monthly income. Therefore, it is imperative for policy makers to plan to improve food availability and to increase family income to enhance quality of rural life.

Key Word: **Household size, Total monthly income, Food commodities, Food expenditure**

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INTRODUCTION

The concern in consumption patterns of households in Pakistan is not new and has been studied by a number of researchers. These researchers differed not only in the period, scope, source and methodology but also in the finding and suggestion they forwarded to address the issue. While some of the studies used either the time series or cross section data reported in the Household Income and Expenditure Surveys (HIES), others were based on the area observations and memory based interviews from the residents. Irrespective of the methodology and source of data, the major question addressed by those studies was to estimate and test the validity of the relationship between income and expenditure on different commodities. Burney and Khan, (1991) while comparing the urban-rural consumption structures in Pakistan found that expenditure elasticities for different commodity groups vary with income and, in general, exhibit a cyclical pattern in terms of quantitative as well as qualitative changes in the households' consumption basket. They were of the view that for a majority of the commodity groups, both structural and behavioral differences in the consumption patterns are found to exist between the urban and the rural households.

Food is the most basic necessity of life. Every human being needs a minimum amount of it for existence and a balance diet to maintain sound health. But unfortunately, where there are availability issues there is a great deal of deprivation and ignorance among the rural masses about a balanced diet. Normally this leads to various health problems, which ultimately affects the economic growth and prosperity of a country. Food consumption is a dynamic process and is greatly influenced by size and composition of household, number of earning hands, prices of food items, educational level, geographical, cultural and climatic conditions in the region, etc.

In 1983 FAO defined the goal for world food security; "to ensure that all people at all times have both physical and economic access to the basic food they need". The need for improved reporting on household access to food stems from a widely recognized observation that world food security is becoming less a problem of global supplies, overall stability and global stock levels as such, and more a problem of inadequate access to food supplies for vulnerable groups within a country, caused inter alia by lack of purchasing power (FAO, 1992). For poor households food is the highest priority which demands almost all of their money or time. In poor countries kitchen expenditure is a major portion of available income whereas, in rich countries people spend more money on services and non-food items. For example, people in USA, Canada, and Netherlands spent 10.4, 13.7 and 14.4 percent of their income on food, respectively; however, in less developed countries like Sudan, India, Philippines, more than 50 percent of a household budget is spent on food commodities (Korab and Cochrane, 1989).

Recent research and development in the field of health care has increased awareness among people about healthy and balanced food intake. The rapidly expanding human population with concomitant increase in demand for food commodities plays an important role to influence food consumption pattern, especially in the least developed countries. A large portion of the world population is poor and more than three-fourths of it is living in rural areas. Forty percent of people in rural areas in the least developed countries live in absolute poverty (IBRD, 1981). Whereas, 60 percent of 181 million total population with an annual growth rate of 2.3 percent, spent less than US $ 2 per day in Pakistan (PRB, 2009). About two-thirds of the population in Pakistan is still living in rural areas and is facing a number of problems in attaining their minimum daily food needs, particularly in the Khyber Pakhtunkhwa Province. This study was therefore undertaken to determine the food consumption pattern as influenced by the socio economic factors of household size and household total monthly income in the rural area of district Nowshera, KP. This study will help the policy makers to develop and execute necessary projects, so as to raise the standard of living of people in this province.

Khan and Khan (1989) measured poverty in relation with food consumption in India and found that one-third of the rural population was living below the poverty line and suggested that development strategies should include an income distribution component. Burney and Khan (1991) have confirmed the existence of economies of scale in the consumption of majority of the commodity groups. They found that the degrees of these economies of scale are not only different across commodities but also between sectors and across the income groups within each sector. The level and distribution of various food commodities is an important indicator of social welfare status of the area. Furthermore, in order to examine the impact of urbanization on the households' consumption patterns, several studies have obtained separate estimates for the urban and the rural sectors.

Mmakola *et al,* (1997) conducted a study on food consumption patterns in South Africa and found that quality and price were both important considerations for consumer food purchases particularly for rural consumers. They also concluded that higher incomes people consumed more meat and could afford more fruit and ready-made foods. Tozanli (1995) reported that low income population has a traditional Mediterranean consumption pattern, whereas wealthy dwellers were inclined to western behavior which had a negative effect on food industries in Turkey.

Salama (1995) studied the consumption pattern of food in Egypt and concluded that the rate of increase in food consumption was dependent on household size and population growth, and suggested implementation of socio economic and national population programmes.
Verma (1989) analyzed income distribution and food consumption in relation to caste identities and land ownership in India. He found that 39 percent of gross village income went to food consumption, the Kirmis, the Dhgenuks, the Arakhy, the Muslims, and the Chamars, spent about 38, 97, 72 45 and 35 percent of their total income on food, respectively, whereas small, medium and marginal farmers spent about 33, 41 and 71 % of the total income on food, respectively.
Khan (1999) studied household expenditure on food items consumed in district Charsadda, Pakistan. He found that an average household spent Rs.6278.00 per month on food commodities. This included flour 16.7, meat 15.9, milk 13.8, fruit 13.2, edible oils 10.1, vegetables 9.7, and pulses 6.4 percent, of the household expenditure, respectively. He observed that expenditures on flour, meat, milk, edible oils, vegetables and fruit were related to the quantity consumed and household total income.

MATERIALS AND METHODS

Supporting the theory of approaching poverty through food consumption patterns a study was carried out in a village Kaka Sahib, district Nowshera in year 2005, to determine the influence of socio economic factors of

household size and household total monthly income on food consumption patterns in the rural area. A random sample size of 66 household was selected by a lottery method from among a total number of 1315 households. This constituted five percent of the total population in the study area. The data were collected on a pre-designed questionnaire which included, 1) social characteristics; family size, sex, age, literacy status, level of education, 2) economic features; income status salaries or wages and other sources, and 3) consumption of food commodities; wheat flour, rice, pulses, vegetables, meat, edible fats (oil & ghee) milk, eggs, sugar, tea and fruit. Statistical and econometric techniques were used to find out averages of all the variables studied. Expenditures on each and every food item were calculated. The percent share of food commodities in total expenditure and in the total household income was determined. To find out the influence of household size and total monthly income of household on consumption of different food items, an ordinary least square method was employed (Gujarati, 2003) to analyze data:

$$C_i = f (HS, TI, E)$$
where C_i = ith food item consumed,
    HS = household size
    TI = monthly total income and
    E is the error term.

RESULTS AND DISCUSSION

The data obtained on demographic features (Table-I) revealed that the average family size was 8.5 persons with a 57 percent female population. This ratio of females in the rural area of district Nowshera was considerably higher than that of the national average of a 51 percent female population in Pakistan (Pakistan, 2009). The literacy rate was 94 percent, amazingly higher than the national average rate of 55 % in Pakistan (FBS, 2008). This reflects a high interest of the area people in education, which is an important component of household features to improving the quality of life. Fifty percent of the household literacy level was under high school and 42 percent was high school. Earlier a ninety-four percent literacy rate was observed by Noreen (2002), in a study of Peshawar valley which is in conformity with the results of this study. The average household monthly income was Rs. 8917.00 ranging from 3000 to Rs 49000 per month. Fifty percent of the household had less income than Rs. 10000.00 per month and 47 % had a monthly income ranged from 10000.00 to Rs. 25000.00 (Table-I).

Table I   *Demographic features of the house holds in rural area of village Kaka Sahib district Nowshera, Pakistan*

Household features					
House hold size (Person)			**Gender %**		
Min	Max	Mean	Male		Female
3	14	8.5	43		57
Literacy Rate (%)			Level of Education		
Illiterate		Literate	Under High School		High School +
06		94	52		42
Monthly Income (Rs)			Level of monthly income		
Min	Max	Mean	< Rs. 10000	Rs.10000-25000	> Rs. 72500
3000/-	49000/-	8917	50%	47%	3%

Field survey 2005

Total expenditure on food items consumed was Rs. 4912.00 per month, which constituted 55% of the total household monthly income (Table-2). From this expenditure a maximum amount of 10.8, 8.2, 7.8, 6.9, 5.9 and 5.4 % went to flour, milk, vegetables, edible oil and meat, respectively. And a minimum amount of 2.9, 2.3, 1.9, 1.8 and 1.2 % was spent on sugar, pulses, tea, rice and eggs, respectively (Table-II). However, in the study of Khan (1999) the amount spent on these items was relatively higher, because of his higher monthly income as compared to the monthly income found in this study. Nevertheless, the findings of this study are in agreement with the result of Korab and Cochrane (1989). They reported that in the least developed countries e.g. Sudan, India and Philippines, more than 50% of a household budget is consumed on food items.

The data on food commodities consumed as influenced by the household size and household total monthly income are given in (Table-III). The econometric analysis indicated that the food items; wheat flour, milk, rice, vegetables, sugar, fats, and tea were positively correlated with household size. These results are in line with the findings of Salama (1995) who observed that the rate of increase in food consumption was dependent on household size and population growth in Egypt. The household total monthly income affected significantly (i.e. P=0.05 level)

the consumption of food items; meat, milk, rice, pulses, fruit, sugar, tea, and edible fats (Table-III). The consumption of these food items had an increasing trend towards household total monthly income increases however, wheat flour, vegetables and eggs were not influenced significantly by the household monthly total income.

Table-II *Percentage share of food commodities in monthly household total income of rural areas district Nowshehra*

Food Commodities	Rural area		
	Total expenditure. (Rs.)	As % of total Exp. on Food.	Commodity Exp. As % of total Household's Avg income.(Rs.8917PM)
Flour	966	19.6	10.83
	Meat group		
Beef	343.3	6.98	3.85
Mutton	20.4	0.41	0.23
Poultry	110.1	2.24	1.23
Fish	7.0	0.14	0.08
Total Meat	**481.0**	**9.77**	**5.39**
Eggs	104.0	2.11	1.16
Vegetables Group	698.5	14.20	7.83
Rice	157.32	3.20	1.76
Pulses group	200.03	4.1	2.25
	Edible fats group		
Cooking Oil	79.32	1.6	0.89
Ghee	533.41	10.8	5.98
Total Edible Fats	**612.73**	**12.4**	**6.87**
	Milk Group		
Raw Milk	605.45	12.3	6.79
Milk Pack	112.47	2.3	1.26
Powder Milk	12.42	0.2	0.14
Total Milk	730.35	14.8	8.19
Sugar	**260.18**	**5.3**	**2.92**
Tea	172.20	3.50	1.93
Fruit Group	529.54	10.8	5.94
Total Food	**4912.12**	**100**	**55**

(Source: Field survey 2005)

Table-III *Influence of socio economic factors of household size (HS) and monthly total income (TI) on consumption of food commodities in rural area of district Nowshera*

Socio Economic Factors	Type of Food Commodities						
	Co-eff	SE	t- ratio		Co-eff	SE	t-ratio
	Wheat				**Meat**		
Constant	99.954-1.032	96.87			-70.724	88.45	-0.800
HS	127.232	15.01	8. 476*		13.318	13.70	0.972
TI	0.007811	.006	1.384		0.05226	.005	10.142*
R² value		0.758				0.676	
	Milk				**Rice**		
Constant	-108.287	102.02	-1.061		-22.268	26.04	-0.855
HS	47.582	15.81	3.010*		16.283	4.036	4.035*
TI	0.05977	0.006	10.056*		0.008409	.002	5.542*
R²value		0.715				0.747	
	Pulses				**Tea**		
Constant	-65.256	47.201	-1.383		-56.005	26.139	-2.143
HS	14.724	7.314	2.013		20.180	4.050	4.982*
TI	0.01917	0.003	6.973*		0.01105	0.002	7.259*
R² value,		0.643				0.664	
	Sugar				**Fruit**		
Constant	-72.533	34.923	-2.077		-33.409	91.022	-0.367
HS	39.223	5.411	7.248*		1.041	14.104	0.074
TI	0.009054	0.002	4.451*		0.06238	0.005	11.765*
R² value		0.646				0.722	
	Vegetable				**Egg**		
Constant	-188.400	155.776	-1.209		-0.397	33.494	-0.012
HS	110.394	24.138	4.573*		8.333	5.190	1.606
TI	0.01993	.009	2.196		0.005698	0.002	2.920
R² value		0.686				0.626	
	Edible Fats						
Constant	23.127	54.860	0.422				
HS	67.618	8.501	7.954*				
TI	0.01741	.003	5.446*				
R² value		0.703					

* Significant at P = 0.05 level. **   R ^{2} indicates coefficient of multiple determination.

These findings are in agreement with those of Sabur *et al.* (1997) in similar study on food consumption pattern in Bangladesh, who found that per capita consumption of some commodities increased with changes in income. However, they found that the quantity consumed or expenditure on food grains, potato and pulses did not increase much with rising income, although changes in income were found to have more impact on consumption of other commodities. Ali (2008) and Noreen (2002) also reported the total income and household strength had a positive relationship with food consumption and that most of food items consumed were dependent on the household size and income, and are in line with the results of this study. In similar study, Khan (1999) reported that expenditure on food items e.g. flour, meat, milk, edible oil, vegetables and fruit was dependent on the household income. But household size had no effect or had a negative effect on the expenditures in his studies. Household size did not influence significantly the quantities of meat, pulses, fruit and eggs consumed in this study as is evident from regression coefficients (Table-III) as well.

CONCLUSION AND RECOMMENDATIONS

It may be concluded from this study that to meet the growing demand for food commodities of an increasing population, where there is a need to enhance production, the need to develop processing and marketing facilities can not be ignored for better management of the essential food commodities. This indeed would provide better employment and investment opportunities and to raise the income of rural communities in the country. This would go a long way to improve the standard of living in the rural area restricting the migration trend towards big cities in search of better life for the household. Hence a two prong strategy is recommended that while developing production and marketing facilities would improve food availability as well as indirectly would provide better income opportunities to the local people.

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