

Dynamics of Household Consumption Expenditure on Food Items in Punjab

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Abstract:

In the present era of rapid technological transformation it is worth studying the dynamics of household consumption expenditure on various food items as the change in technology has an impact on consumer's taste and preferences. Higher income, urbanization, other demographic shifts, improved transportation, and consumer perceptions regarding quality and safety are changing global food consumption patterns. Variations in food consumption have led to an increase in trade and changes in the composition of world agricultural trade. The study about the consumption expenditure was conducted on the basis of the data collected from two districts of Punjab i.e. Faridkot and Ludhiana. Then 200 consumers from urban area and 200 consumers from rural area were selected randomly so as to make a comparative analysis of dynamics of consumption expenditure in Punjab. To achieve the basic objectives of the study various suitable techniques were employed. For that purpose regression analysis in the algebraic form of linear, double-log and semi-log were applied. Engel's elasticity were also worked out. The study showed that there was a non-linear relationship between expenditure on the majority of the consumption items and income among urban consumers. The findings were supported by the Gini- coefficient for urban as well as for rural consumers and analysis showed that consumption disparity was more in urban areas than in rural areas in Punjab.

Keywords: Dynamics, dynamics of consumption, expenditure, food items, rural, urban

Indian economy is an agricultural based fast developing economy which has been bringing many changes in the socio-economic profile of the people since independence. Food consumption expenditure is a dynamic process which is largely influenced by the size and composition of household, number of earning hands, prices of food items, education level, geographical, cultural and climatic conditions in the region etc. During July 1991 Indian Government introduced a large number of economic reforms with a motive to raise the national income and the standard of living of people of India. The household consumption expenditure was supposed to change after these reforms. In simple words, economic reforms refer to the efforts made to settle the economic imperfections in the economy. Punjab being the food basket of India has witnessed tremendous changes after the Green Revolution in 1966. The manifold increase in income of the people of Punjab after the Green Revolution had led to significant changes in the consumption pattern and behaviour both in urban as well as rural areas of the state. The average monthly per capita consumer expenditure (MPCE) of Punjab was Rs. 1,649 for rural area and Rs. 2,109 for an urban area (NSSO, 2009-10).

Apart from rapid change in technology, urbanization, social changes impact of various advertisements on television and change in the life style of the families have brought about tremendous changes in the food consumption pattern of both the urban as well as rural consumers. In addition to the above factors higher income, other demographic shifts, improved transportation, and consumer perceptions regarding quality and safety are also changing the global food consumption patterns. Variations in food consumption have led to an increase in trade and changes in the composition of world agricultural trade. Consumer expenditure has been undergoing drastic changes since last four decades. For this in Punjab, Green Revolution in agriculture showering the benefits on rural Punjab, the other being the New Economic policy adopted in the 1990s promoting globalization and industrialization played a major role. In the last two decades, luxuries are shifting to comforts and comforts to necessities. Some items of consumption are no more on the scene. Therefore the study of consumption pattern with special reference to the dynamics of the food consumption pattern is of utmost significance.

OBJECTIVES OF THE STUDY

The basic objective of the present paper is to evaluate the dynamics of consumption expenditure in urban as well as rural Punjab.

REVIEW OF LITERATURE

Huang and Howarth Bouis (1996) assessed that many Asian countries are expected to undergo rapid urbanization over the next 25 years. Rapid urbanization will lead to change in the taste and the lifestyle of the people that will also influence the demand for food. In Japan, Korea and Taiwan, there is a significant decline in the demand for cereals based food, while the consumption of meat, fish and dairy products has increased dramatically. Economists have explained that such changes are the result of an increase in disposable income and change in food prices. They observed that household income and food prices strongly affect the consumption expenditure. Urbanization affect the lifestyle of people so as the food demand pattern.

Kalwij and Salverda (2004), observed in his study the changes in household expenditure and in particular services related expenditures, in Netherlands over the years 1979, 1989, and 1998 using Engel's curve estimation. These changes are related to changes in household demographics. The finding showed that the dominating changes in demand are decreasing share of expenditure on food and clothing and increasing share of expenditure on housing. Decrease in food expenditure is for a large part explained by changes in household characteristics and the budget and about a third in a price effect. The increase in housing expenditure shares predominantly a price effect.

Golait and Pradhan (2006) found that as per the data, it has been seen that there is a significant decline in the consumption of all the cereals over the period 1987-88 through 2001-02 in both rural and urban areas. It was also found that the reduction was particularly evident in the case of the smaller cereal items, e.g., barley, maize and cereal substitutes such as tapioca. There has been a change in preferences towards non-cereal items, such as meat/fish/eggs and fruits/vegetables. Whatever the underlying factors causing these changes, these have led to a significant decline in calorie consumption due to the switch-over from calorie intensive cereal items to non-cereals items which are more expensive sources of calories.

Sharma et al. (2006) used NSS data for the periods 1977-78, 1987-88, 1993-94 and 1999-2000 to study the changing consumption pattern in Himachal Pradesh. The study pointed out that in rural areas, the larger portion of expenditure was spent on total food items which declined from 65.66 per cent in 1977-78 to 56.00 per cent in 1999-00. Cereals dominated in the food expenditure. Among food expenditure, the maximum share was taken by the milk and milk products. The non-vegetarian food items were given the least priority over the years. The study indicated that urbanities in Himachal Pradesh had significantly reduced their food items consumption from 57.97 per cent to 31.92 per cent in 1999-00. Within non-food items consumer gave priority to miscellaneous goods and services followed by clothing, fuel and light and durables goods in both the areas. It is found that the expenditure on non-food items was higher in urban areas mainly because of the living standard such as higher income higher social requirement of urban life, nuclear families, education. In urban areas, inequalities in food consumption declined at a faster pace than is non-food items. The study suggested that to increase expenditure in the rural sector, there is a need to improve farm productivity through better infra-structural facilities in terms of input availability, marketing facilities etc. This will vary significantly due to diverse agro-climatic conditions, improvement in the non-farm sector, and a higher emphasis on technical education.

The Government of Punjab Report (2007) based on household consumer expenditure during NSS 63rd round, data analyzed expenditure pattern in Punjab. Consumption options were found to have widened. The study showed that average household monthly expenditure registered to Rs.1300 out of this Rs.572 was spent on food items and Rs.728 on non-food items. Rural-urban disparities of average monthly per capita expenditure were found to have increased. For the rural sector, average MPCE of Rs.1234 comprised Rs.558 for food and Rs.676 for non-food items whereas in urban sector average MPCE of Rs.1483 comprised Rs.610 for food and Rs.873 for non-food articles. A significant increase in rural-urban disparities is found. The expenditure on milk and milk products, cereals, pulses was more in the rural sector in comparison to urban sector, and the expenditure on beverages was more in urban sector in than that of the rural sector.

RESEARCH METHODOLOGY

The study about the consumption expenditure was conducted on the basis of the primary data collected from two districts i.e. Faridkot and Ludhiana. Purposive random sampling method was employed to select the sample to select the sample for the present study. A suitable sample of 200 consumers from urban and an equal numbers from rural areas of two districts were selected. From the two selected districts, one block each was selected randomly. From each of the selected block one city and four villages were taken for the study. Then 200 consumers from urban area and 200 consumers from rural area were selected randomly so as to make a comparative analysis of dynamics of consumption expenditure in Punjab. The collected data has been processed through various statistical tools. For this purpose regression analysis in the linear algebraic form, double -log and semi - log were applied. Engel's elasticity's were also worked out. The results so obtained have been organized in tabular form in order to make the study more informative, analytical and useful for further research.

RESULTS AND DISCUSSION

The results obtained after analyzing the collected data have been discussed hereunder:

The dynamics of consumption expenditure in Punjab was assessed by evaluating the impact of the change in income on different consumption items including food items. This was done by employing the regression analysis in linear, double log and semi-log forms. With the help of regression coefficients obtained through various forms of regression analysis, Engel's income elasticity's of different items of consumption expenditure were worked out in order to see the quantum and direction of impact of the change in income on these items. This was done for urban and rural areas separately and thereafter the results have been presented in Table 1, 2 and 3.

1. Urban Consumers

The impact of the change in income on consumption expenditure of urban consumers has been shown in Table 1.

It is very clear from Table 1 that the impact of increased family income would be significantly positive on food items, intoxicants, household non-food routine items, clothing and footwear, transportation, services, ceremonies, housing and sanitation among urban consumers as per the t-values of regression coefficients in the linear model. The regression coefficient of food items was 0.18, intoxicants 0.02, household routine items 0.08, clothing and footwear 0.03, transportation 0.06, services 0.15, ceremonies 0.27, housing 0.04 and that of sanitation 0.06. This indicated that an increase of one unit in income would lead to an increase of 0.18 units in the expenditure on food items, 0.02 units in the expenditure on intoxicants, 0.08 units in the expenditure on household routine items, an increase of 0.03 units in expenditure on clothing and footwear, an increase of 0.06 unit in expenditure on transportation, an increase of 0.15 units in expenditure on services, an increase of 0.27 units in expenditure on ceremonies, an increase of 0.04 units in the expenditure on housing and an increase of 0.06 units in the expenditure on sanitation. The magnitude of R^2 was quite high ranging from 0.61 in case of sanitation to 0.96 in case of household routine items.

As per the double log model, the regression coefficient of food items (0.51), intoxicants (0.61), household routine items (0.74), clothing and footwear (0.96), transportation (2.14), services (1.82), ceremonies (1.98) and housing (1.41) was significantly positive. This indicated that an increase of one per cent in family income would lead to an increase of 0.51 per cent in the expenditure on food items, an increase of 0.61 per cent in the expenditure on intoxicants, an increase of 0.74 per cent in the expenditure on household routine items, an increase of 0.96 per cent in the expenditure on clothing and footwear, an increase of 2.14 per cent in the expenditure on transportation, an increase of 1.98 per cent in the expenditure on social and religious ceremonies and an increase of 1.41 per cent in the expenditure on housing. The magnitude of R^2 ranged from 0.79 in case of intoxicants to 0.95 in the case of clothing and footwear. The same was very low to the tune of 0.34 in the case of health care.

As per semi-log model, the regression coefficients of food items (2095.72), intoxicants (234.47), household routine items (976.57), clothing and footwear (331.03), transportation (675.67), services (1857.25), ceremonies (3498.71) and housing (450.84) was significantly positive. This indicated that an increase of one per cent in family income would lead to an increase of Rs. 20.96 in the expenditure on food items, Rs. 2.34 in the expenditure on intoxicants, Rs. 9.77 in the expenditure on household routine items, Rs. 3.31 in the expenditure on clothing and footwear, Rs. 6.76 in the expenditure on

transportation, Rs. 18.57 in the expenditure on services, Rs. 34.99 in the expenditure on social and religious ceremonies and Rs. 4.51 in the expenditure on housing.

Table 1: Impact of Change in Income on Expenditure on Different Consumption Group in Urban Punjab: Regression Analysis

Consumption Group	Linear			Double Log			Semi-Log		
	α	B	R ²	α	B	R ²	A	β	R ²
Food Items	182.53	0.18	0.91	2.65	0.51	0.89	-7362.34	2095.72	0.94
t-value		4.63**			1.24			12.37**	
Intoxicants	7.24	0.02	0.93	-1.14	0.61	0.79	-124.17	234.47	0.56
t-value		7.26**			6.52**			14.56**	
Household Routine	4.89	0.08	0.96	-1.23	0.74	0.94	-4763.21	976.57	0.89
t-value		4.79**			11.67**			10.27**	
Clothings & Footwears	3.41	0.03	0.94	-2.64	0.96	0.95	-1631.23	331.03	0.93
t-value		8.44**			8.97**			8.97**	
Transportation	-34.68	0.06	0.94	-7.84	2.14	0.87	-3423.58	675.67	0.92
t-value		11.56**			6.32**			8.64**	
Services	-15.43	0.15	0.91	-6.89	1.82	0.87	7618.43	1857.25	0.88
t-value		14.23**			5.87**			6.28**	
Ceremonies	-22.49	0.27	0.92	-8.14	1.98	0.88	-10809.56	3498.71	0.85
t-value		7.37**			6.21**			4.53**	
Housing	-5.98	0.04	0.87	-3.04	1.41	0.84	-1967.45	450.84	0.81
t-value		9.89**			8.44**			4.11**	
Sanitation	6.57	0.06	0.61	-3.57	0.96	0.34	-7.31	1.67	0.24
t-value		4.67**			1.43				

Source: Field Survey 2017

Overall the analysis revealed that the change in family income affected the expenditure pattern on food items in urban Punjab in a significantly positive manner. Similarly, the expenditure on intoxicants, household routine items, clothing and footwear, transportation, services, ceremonies and housing was also affected significantly by the change in family income in a positive manner.

2. Rural Consumers

The impact of the change in income on consumption expenditure of rural consumers has been incorporated in Table 2.

It is very clear from Table 2 that the impact of increased family income would be significantly positive on clothing and footwear, transportation, services and ceremonies among rural consumers as per the t-values of regression coefficients in the linear model. The regression coefficient of clothing & footwear came to be 0.03, transportation 0.03, services 0.12 and that of ceremonies 0.26. This indicated that an increase of one unit in income would lead to an increase of 0.03 units in expenditure on clothing and footwear, an increase of 0.03 units in expenditure on transportation, an increase of 0.12 units in

expenditure on services and an increase of 0.26 units in expenditure on ceremonies. The magnitude of R^2 was very low to the tune of 0.28 in case of food items, 0.31 in case of intoxicants, 0.12 in case of housing and 0.26 in the case of sanitation.

Table 2: Impact of Change in Income on Expenditure on Different Consumption Group in Rural Punjab: Regression Analysis

Consumption Group	Linear			Double Log			Semi-Log		
	α	β	R^2	α	B	R^2	A	β	R^2
Food Items	234.65	0.19	0.28	7.56	0.43	0.32	-2431.13	1902.87	0.24
t-value		1.37			1.34			1.34	
Intoxicants	8.43	0.01	0.31	-0.31	0.59	0.64	-367.34	132.86	0.32
t-value		0.97			2.71**			1.64	
Household Routine	21.26	0.07	0.74	-2.37	0.74	0.78	.1864.57	655.34	0.74
t-value		1.04			4.37**			3.58**	
Clothing & Footwear	1.04	0.03	0.81	-0.87	0.94	0.21	-1167.49	263.31	0.79
t-value		7.23**			5.23**			8.97**	
Transportation	-13.48	0.03	0.54	-12.67	2.17	0.19	-984.67	333.16	0.59
t-value		3.68**			3.67**			4.01**	
Services	-7.22	0.12	0.82	-34.68	1.88	0.84	-4538.69	1193.06	0.81
t-value		4.37**			5.98**			4.39**	
Ceremonies	87.54	0.26	0.91	-26.98	2.13	0.89	-6425.43	2505.30	0.88
t-value		7.43**			8.63**			5.24**	
Housing	-18.23	0.03	0.12	0.64	1.49	0.24	-963.27	293.03	0.19
t-value		1.23			1.89			1.27	
Sanitation	5.67	0.05	0.26	1.38	0.91	0.39	.1267.52	480.53	0.34
t-value		1.63			1.74			1.69	

Source: Field Survey 2017

As per the double log model, the regression coefficient of intoxicants (0.59), household routine items (0.74), clothing and footwear (0.94) transportation (2.17) services (1.88) and ceremonies (2.18) was significantly positive. This indicated that an increase of one per cent in family income would lead an increase of 0.59 per cent in the expenditure on intoxicants, an increase of 0.74 per cent in the expenditure on household routine items, an increase of 0.94 per cent in the expenditure on clothing and footwear, an increase of 2.17 per cent in the expenditure on transportation and an increase of 2.18 per cent in the expenditure on social and religious ceremonies. The magnitude of R^2 was very low to the tune of 0.32 in case of food items, 0.21 in case of clothing and footwear, 0.19 in case of transportation, 0.24 in case of housing and 0.39 in case of sanitation.

As per semi-log model, the regression coefficients of household routine items (655.34), clothing and footwear (263.31), transportation (333.16), services (1193.06) and ceremonies (2205.30) was significantly positive. This indicated that an increase of one per cent in family income would lead to an increase of Rs. 6.55 in the expenditure on household routine items, Rs. 2.63 in the expenditure on

clothing and footwear, Rs. 3.33 in the expenditure on transportation, Rs. 11.93 in the expenditure on services and Rs. 22.05 in the expenditure on social and religious ceremonies.

Overall the analysis revealed that the change in family income did not affect the expenditure pattern on food items in rural Punjab in a significant manner. However, the expenditure on household routine items, clothing and footwear, transportation, services and ceremonies was affected significantly by the change in family income in a positive manner.

3. Engel's Expenditure Elasticity

The Engel's elasticity is an indicator of per cent change in expenditure on various consumption items with one per cent change in the family income. The Engel's expenditure elasticity's as per three different regression models, i.e. linear, double log and semi-log model, have been presented in Table 3.

Consumption Group	Urban			Rural		
	L	DL	SL	L	DL	SL
Food Items	0.49	0.51	0.47	0.42	0.43	0.42
Intoxicants	0.66	0.61	0.64	0.67	0.59	0.63
Household Routine	0.78	0.74	0.79	0.77	0.74	0.77
Clothing & Footwear	0.91	0.96	0.93	0.90	0.94	0.89
Transportation	1.92	2.14	1.87	1.94	2.17	1.91
Services	1.54	1.82	1.51	1.61	1.88	1.59
Ceremonies	1.76	1.98	1.81	1.92	2.13	1.87
Housing	1.37	1.41	1.34	1.42	1.49	1.39
Sanitation	0.92	0.96	0.87	0.88	0.91	0.84

Source: Field Survey 2017
 Note: 'L' stands Linear Function; 'DL' for Double Log function; and 'SL' stands for Semi-Log Function

In urban areas, the highest elasticity of food expenditure was 0.51 under the double-log model. This showed that there would be an increase of 0.51 per cent in expenditure on food items with an increase of one per cent in family income among urban consumers. The elasticity of intoxicants expenditure was highest to the tune of 0.66 under the linear model, which showed that an increase of one per cent in family income would lead to an increase of 0.66 per cent in the expenditure on intoxicants.

The elasticity of household routine items was highest of the order of 0.79 under the semi-log model, which indicated that an increase of one per cent in family income would lead to an increase of 0.79 per cent in the expenditure on household routine items. The elasticity of expenditure on clothing and footwear was highest of the order of 0.96 under the double-log model. This revealed that there would be an increase of 0.96 per cent in the expenditure on clothing and footwear with an increase of one per cent in family income. The highest elasticity of expenditure on transportation came to be 2.14 under the double-log model, which showed that there would be an increase of 2.14 per cent in the expenditure on transportation with an increase of one per cent in the family income.

Similarly, the double log model suggested that there would be an increase of 1.82 per cent in the expenditure on services with an increase of one per cent in family income. The expenditure on social and religious ceremonies would increase by 1.98 per cent after an increase of one per cent in family income as indicated by the double log model. On the same pattern, the double-log model suggested that there would be an increase of 1.41 and 0.96 per cent increase in the expenditure on housing and sanitation respectively with an increase of one per cent in family income.

The study showed that there was a non-linear relationship between expenditure on the majority of the consumption items and income among urban consumers. The analysis revealed that among urban consumers, the highest increase would be in the expenditure on transportation (2.14%), followed by 1.98 per cent in expenditure on social and religious ceremonies, 1.82 per cent in expenditure on services and 1.41 per cent in expenditure on housing. This showed that the increase in the expenditure on transportation, ceremonies, services and housing would be more than the proportionate increase in the family income.

The increase in expenditure on clothing and footwear (0.96%) and sanitation (0.96%) was nearer to one, which indicated that the increase in expenditure on these consumption items would be in the direct proportion to the increase in family income. The increase in the expenditure on household routine items (0.74%) and intoxicants (0.61%) was less than the proportionate increase in family income. Moreover, the increase in expenditure on food items was the minimum to the tune of 0.51 per cent, which revealed that the increase in expenditure on food items would be just half of the increase in family income. The analysis highlighted that among urban consumers, the food expenditure elasticity was the lowest in relation to the family income.

Among rural consumers, the highest elasticity of food expenditure was 0.43 under the double-log model, while the highest elasticity of intoxicants was 0.67 under the linear model. The highest elasticity of expenditure on household routine items was 0.77 under linear as well as a semi-log model, while the highest elasticity of expenditure on clothing and footwear was 0.94 under the double-log model.

The highest elasticity of expenditure on transportation was 2.17 under the double-log model and the same of the expenditure on services was 1.88 under the double-log model. The analysis further showed that the highest elasticity of expenditure on ceremonies was 2.13 under the double-log model, while the highest elasticity of expenditure on housing was 1.49 under the double-log model. Similarly, the highest elasticity of expenditure on sanitation was 0.91 under the double-log model.

CONCLUSION

This showed that there was a non-linear relationship between expenditure on the majority of the consumption items and income among rural consumers. However, the relationship between expenditure on food items and income was not linear in rural areas. The analysis revealed that the increase in the expenditure on transportation, services, ceremonies and housing was above the proportionate increase in the income, while the increase in the expenditure on clothing & footwear and sanitation was just in a proportionate increase in the income. However, the increase in expenditure on food items, intoxicants and household routine items was below the proportionate increase in income. The increase in

expenditure on food items was even below half of the proportionate increase in income among rural consumers.

This proved the thesis of Engel that increase in expenditure on food items tends to be below the proportionate increase in the income. The major share of increased income goes to the non-food expenditure among masses. Thus the dynamics of food expenditure is that the low-income group incurred a higher proportion of their income on food consumption as compared to that among high-income group. This is due to the fact that either low-income group or high-income group, first of all, fulfil the food requirements of the family and only with the surplus income, they go to opt for non-food consumption.

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