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EFFECT OF DEMOGRAPHICS ON PURCHASE OF PROCESSED CEREAL FOOD PRODUCTS IN PUNJAB*

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ABSTRACT

The main objective of this paper is to examine the consumer purchase behavior with the help of consumer awareness towards Processed Cereal Food Products in Punjab. Research was carried out in three cities (Ludhiana, Jalandhar and Amritsar) of Punjab. A sample of 300 respondents was taken and analyzed with the help of SPSS and One-sample t test, ANOVA, Chi-square test, Regression through SPSS software. Research revealed that cereal food is majorly consumed for the breakfast. Secondly it was found that people with higher income consume more Processed Cereal Food than people with middle income or lower income.

Keywords: Demographics; Processed Cereal Food; PUNJAB; Purchase Behavior; One-sample t test; ANOVA; Chi-square test.

INTRODUCTION

India has witnessed revolutions in Information technology and biotechnology. Now, it's the turn for a revolution in food technology (Paul, 2007). Indian food industry which is of Rs 3.6 trillion is decisively surging ahead with a never before spring in its gait. Even sector analysts are predicting yummy times ahead.

Food accounts for the largest share of consumer spending. Food and food products account for about 53 per cent of the value of final private consumption. This share is significantly higher than in developed economies, where food and food products account for about 20 per cent of consumer spending (Baskar, 2013). There was a decline in the share of food in total expenditure that is 54 per cent in rural areas compared to 64 per cent in 1987-88 and 42 per cent in urban areas compared to 56 percent during 1987-88 (National Sample Survey Organization, GOI).

India with a population of 1.08 billion (growing at about 1.70% per annum) provides a large and growing market for food products (MOFPI). Food products are the single largest component of private consumption expenditure, accounting for as much as 49.00 per cent of the total spending. Furthermore, the upward mobility of income classes and increasing need for convenience and hygiene is driving demand for (a) perishables and non food staples and

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(b) processed foods. Also, eating out is a booming practice in urban India and processed foods are accepted as alternative to the home cooked food because of the convenience it offers. Unlike older days where man used to have his food lavishly and slowly, the present trend changed the habits of foods, which are simple and easy to digest. Hence, the existence of these foods fulfilled all the needs of modern human being. Canned foods, convenience foods, fast foods, frozen foods, instant products, dried foods, preserved foods, etc. all comes under ready-to-eat foods. The food habits in India have changed due to the western influence and the usage of these foods is also on the rise. The food processing industry in India is at an early growth stage, with low penetration levels and high potential. (Ernst & Young, 2009)

- The size of the food processing industry in India has increased from US\$ 57 billion (INR 2,736 billion) in 2004 to US\$ 75 billion (INR 3,600) in 2007.
- During this period, the number of registered operating units increased from 24,000 to 25,725 units. (Ernst & Young, 2009)

By 2015, the Indian food industry is estimated to grow by around 40 per cent over 2007. Two key factors are expected to drive this growth:

- Socio-economic changes across India's population base, in terms of growth in the number of households in the high-income category, rising youth population and migration from rural to urban areas. Products focused towards children; you adults which offer changing lifestyles.
- Growth in Urbanization ; higher mobility; Evolving lifestyle trends, such as the emergence of nuclear families, increasing health awareness and growing exposure to international markets. (Ernst & Young, 2009)

Objectives of Present Study

The present study is an attempt to meet the following objectives:

1. To study the present consumer behavior in buying the processed food products
2. To explore the possibilities of change in consumer behavior and perceptions due to price factor and to explore changes in demand behavior

LITERATURE REVIEW

Tsakiridou, Boutsouki, Zotos, & Mattas (2008) found Greek consumers seem to be informed about environmental and health issues. They seek information about the nutritional value of food and demand more products free from chemical residues. The results show that most consumers associate organic consumption mainly with fruit and vegetables. Although demographics seem to affect attitudes towards organics, their value in explaining actual behavior is minimal.

Shivkumar (2004) showed that the consumer, irrespective of income groups, was mainly influenced by the opinions of their family members to purchase. Consumers were also influenced by the dealers' recommendation, followed by advertisement.

Rees (1992) revealed that factors influencing the consumer's choice of food were flavor, texture, appearance, advertising, a reduction in traditional cooking, fragmentation of family means and an increase in 'snacking' etc. Demographic and household role changes and the introduction of microwave ovens had produced changes in eating habits. Vigorous sale of chilled and other prepared foods was related to the large numbers of working wives and single people, who require value convenience. Development in retailing with concentration of 80.00 per cent of food sales in supermarkets was also considered to be important. Consumers were responding to messages about safety and healthy eating. They were concerned about the way in which food was produced and want safe, 'natural', high quality food at an appropriate price. However today, for the consumer on the go, eating

breakfast cereal is an easier, healthier and quicker option as compared to breakfast options in the past that took time to prepare.

Kamalaveni and Nirmala (2000) reported that, there is complete agreement between ranking given by the housewives and working women regarding the reasons promoting them to buy Instant Food Products. Age, occupation, education, family size and annual income had much influence on the per capita expenditure of the Instant Food Products.

Carrillo, Varela, Salvador & Fiszman (2011) investigated consumers' factors underlying food choice and their attitudes toward healthy eating. The participants completed a questionnaire composed by two parts. The first one was based on the Food Choice Questionnaire where the mean scores and factor analyses pointed to "sensory appeal," "price" and "convenience" as the most important factors in Spaniards' food choice. The second part of the questionnaire asked about the consumption frequencies of different kind of foods and revealed dairy products as the most consumed ones. Furthermore, foods with specific health-promoting ingredients exhibited low consumption frequency, most likely motivated by the low interest or knowledge about their health benefits. Knowing the main factors underlying consumers' food choice provides important information for having a better understanding of consumers' interest and attitudes toward healthy eating, as well as their concerns about factors involving purchase decision. Knowledge about perceptions toward healthy foods is useful for researchers, producer, manufacturers and health professionals as a first step to design public health policies and consumer education strategies. In addition, the methodology used in the present study with potential application to any kind of population, establishes relationships between consumers perception and food consumption behavior for Spanish consumers.

DATA AND METHODOLOGY

The research was aimed at studying the consumer behavior & perception regarding the processed foods industry in urban Punjab. Punjab was divided into three belts i.e. Majha, Doaba and Malwa and based on this division the one city from each belt has been taken i.e. Ludhiana from Majha, Jalandhar from Doaba and Amritsar from Malwa belt. The major considerations for choosing these cities were increasing working population of couples, increasing demand for Processed Cereal Food and variable strata of population as basis of living standard. Different income groups of domestic consumers were chosen to get the information. For this study total samples of 300 consumers were selected on the basis of convenience sampling i.e. 100 from each city/town. Convenience sampling technique was used to conduct this study.

The collected data was analyzed with the help of SPSS. Following statistics and econometrics techniques have been applied to meet the objectives of present study:

- One-sample t test
- ANOVA
- Chi-square test
- Regression

Hypothesis Developed

H2.1: People spend around Rs. 2000 on cereal process food.

H0.2.1: People do not spend around Rs. 2000 on cereal process food.

H2.2: People spend around Rs. 2000-Rs. 4000 cereal process food

H0.2.2: People do not spend around Rs. 2000-Rs. 4000 cereal process food

H2.3: People spend around more than Rs. 4000 cereal process food

H0.2.3: People do not spend around more than Rs. 4000 cereal process food

H2.4: If price increase then the customer will go to other shop.

H0.2.4: If price increase then the customer will not go to other shop.

H2.5: If price increase then the customer will postpone the purchase.

H0.2.5: If price increase then the customer will not postpone the purchase.

H2.6: If price increase then the customer will buy other brand of cereal food.

H0.2.6: If price increase then the customer will not buy other brand of cereal food.

H2.7: If price increase then the customer will switch to traditional foods.

H0.2.7: If price increase then the customer will not switch to traditional foods.

RESULTS AND DISCUSSION

Test of Normality

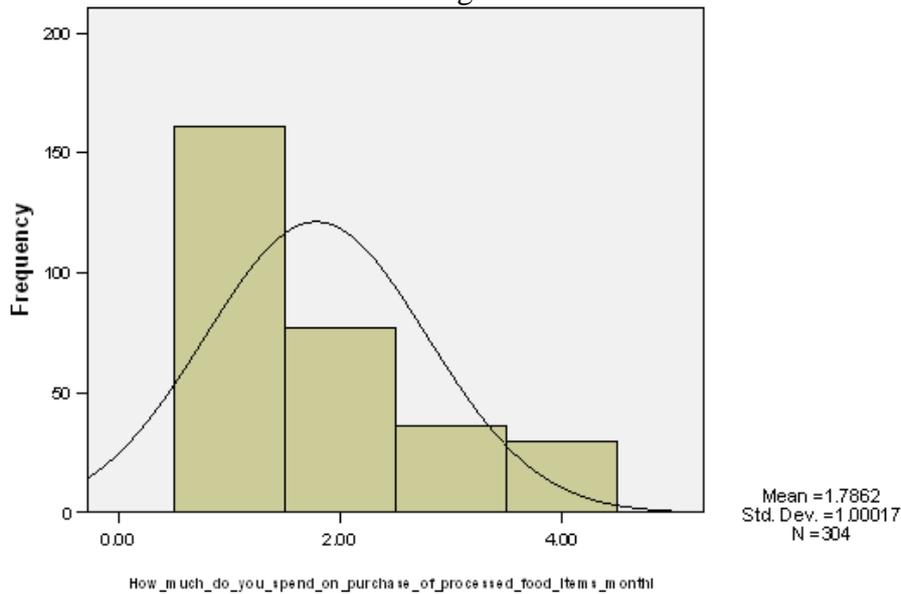
First, normality of each item was assessed using standard deviation, skewness, and kurtosis. There was no item that exhibited abnormally high standard deviation, skewness, and kurtosis, indicating normal distribution of each item.

TABLE 1
How much do you spend on purchase of processed food items monthly

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid up to 2000	161	53.0	53.0	53.0
2001-4000	77	25.3	25.3	78.3
4001-6000	36	11.8	11.8	90.1
more than 6001	30	9.9	9.9	100.0
Total	304	100.0	100.0	
N		Valid		304
		Missing		0
Skewness				1.037
Std. Error of Skewness				.140
Kurtosis				-.135
Std. Error of Kurtosis				.279

Table 1 contains the SPSS output and it can be clearly seen that the total number of items is 304 for which the mean is 1.786 and the standard deviation is 1.00. It can also be clearly seen that the data is normally distributed since the value of skewness and kurtosis lies between +1 and -1 that is 1.037 and -0.279 respectively.

FIGURE 1
Histogram



One Sample T Test

One sample t-test is conducted to compare the means score of a sample to a population mean. A one sample T test was conducted by using “How much do you spend on Processed Cereal Food?” as a variable. Table 2 and Table 3 contain the SPSS output, and significance of T-test is found to be 0.000. This indicated that at 95% confidence level, T-test proves the model is highly significant. In other words the rating given by the respondents are significantly different from each other. So we reject the null hypothesis and accept the alternate hypothesis that in terms “How much do you spend on Processed Cereal Food?” the rating given by the respondents are significantly different from each other. We can conclude that the sample is representing the population.

TABLE 2
One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
How much do you spend on purchase of processed food items monthly	304	1.7862	1.00017	.05736

TABLE 3
One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% C.I. of the Difference	
					Lower	Upper
How much do you spend on purchase of processed food items monthly	31.13	303	.000	1.78618	1.6733	1.8991

One way ANOVA

One-Way Analysis of Variance is a way to test the equality of three or more means at one time by using variances. The populations from which the samples were obtained must be

normally or approximately normally distributed. The samples must be independent. The variances of the populations must be equal. One way ANOVA was conducted between the “How much do spend on Processed Cereal Food?” and various city to know whether there is a significant difference between the means of cities while answering “How much do spend on Processed Cereal Food?” (See SPSS Table 4)

TABLE 4
Final Ratings on Preferences when Lending

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.500	1	10.500	5.442	.020
Within Groups	864.424	301	1.930		
Total	874.924	303			

TABLE 5

When do you take processed food * How often is the most preferred Processed Cereal Food you use (Crosstab)

When do you take processed food		How often is the most preferred Processed Cereal Food you use				
		Cornflakes	Oats	Dalia/Porridge	Muesli	Total
Breakfast	Count	116	35	65	3	219
	% within When do you take processed food	53.0%	16.0%	29.7%	1.4%	100%
	% within How often is the most preferred Processed Cereal Food you use	74.8%	79.5%	63.7%	100%	72.0%
	% of Total	38.2%	11.5%	21.4%	1.0%	72.0%
Lunch	Count	23	6	17	0	46
	% within When do you take processed food	50.0%	13.0%	37.0%	0.0%	100%
	% within How often is the most preferred Processed Cereal Food you use	14.8%	13.6%	16.7%	0.0%	15.1%
	% of Total	7.6%	2.0%	5.6%	0.0%	15.1%
Tea	Count	13	0	17	0	30
	% within When do you take processed food	43.3%	0.0%	56.7%	0.0%	100%
	% within How often is the most preferred Processed Cereal Food you use	8.4%	0.0%	16.7%	0.0%	9.9%
	% of Total	4.3%	0.0%	5.6%	0.0%	9.9%
Dinner Time	Count	3	3	3	0	9
	% within When do you take processed food	33.3%	33.3%	33.3%	0.0%	100%
	% within How often is the most preferred Processed Cereal Food you use	1.9%	6.8%	2.9%	0.0%	3.0%
	% of Total	1.0%	1.0%	1.0%	0.0%	3.0%
Total	Count	155	44	102	3	304
	% within When do you take processed food	51.0%	14.5%	33.6%	1.0%	100.0%
	% within How often is the most preferred Processed Cereal Food you use	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	51.0%	14.5%	33.6%	1.0%	100.0%

From the SPSS output Table 5, we can see that there is an association between when do you take processed food and the various types of Processed Cereal Food. It has been found that cereal food is majorly consumed for the breakfast. And cornflakes and porridge/Dalia are majorly consumed.

TABLE 5.1
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.114(a)	9	.088
Likelihood Ratio	18.951	9	.026
Linear-by-Linear Association	3.121	1	.077
N of Valid Cases	304		

Note. a 8 cells (50.0%) have expected count less than 5. The minimum expected count is .09.

From the Table 5.1, it has been found that the significant value is 0.000 which is less than 0.05 at 95% confidence level. But as the thumb rule the significant value has to be less than 0.05 at 95% confidence level. We will accept the significant relationship but in the above case since the value is more than 0.05 but less than 0.10. We will check the hypothesis at 90% confidence level. In this case, the small value of Pearson's Chi-square test states that there is a significant interrelationship between consumption pattern and the type of Processed Cereal Food. So at 90% confidence level $100-90=10$ divided by 100 or 0.10 significant level, it is concluded that there is a significant interrelationship between consumption pattern breakfast cereal and the type of Processed Cereal Food.

TABLE 5.2
Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	.218	.088
N of Valid Cases		304	

The contingency coefficient gives the measure of strength of the output. If the value is close to 0, there is less correlation between the two variables. However, if the range is between 0.5 and 1, there exists a strong correlation. From the Table 5.1, it can be concluded that there is moderate correlation between the variables namely consumption pattern and consumption of Processed Cereal Food.

H_{1.36}: People consume cereal process food as breakfast. Accepted

H_{0.1.36}: People do not consume cereal process food as breakfast. Rejected

H_{1.37}: People consume cereal process food as lunch. Rejected

H_{0.1.37}: People do not consume cereal process food as lunch. Accepted

H_{1.38}: People consume cereal process food for teatime. Rejected

H_{0.1.38}: People do not consume cereal process food for teatime. Accepted

H_{1.39}: People consume cereal process food as dinner. Rejected

H_{0.1.39}: People do not consume cereal process food as dinner. Accepted

H_{1.40}: People prefer to consume cornflakes. Accepted

H_{0.1.40}: People do not prefer to consume cornflakes. Rejected

H_{1.41}: People prefer to consume oats. Rejected

H_{0.1.41}: People do not prefer to consume oats. Accepted

H_{0.1.42}: People prefer to consume porridge/Dalia. Accepted

H_{0.1.42}: People do not prefer to consume porridge/Dalia. Rejected

H_{1.43}: People prefer to consume Muesli. Rejected

H_{0.1.43}: People do not prefer to consume Muesli. Accepted

TABLE 6

How much do you spend on purchase of processed food items monthly * When do you take processed food (Crosstab)

How much do you spend on purchase of processed food items monthly		When do you take processed food				Total
		breakfast	lunch	tea time	dinner	
up to 2000	Count	123	29	9	0	161
	% within How much do you spend on purchase of processed food items monthly	76.4%	18.0%	5.6%	.0%	100.0%
	% within When do you take processed food	55.4%	63.0%	33.3%	.0%	53.0%
	% of Total	40.5%	9.5%	3.0%	.0%	53.0%
2001-4000	Count	54	8	9	6	77
	% within How much do you spend on purchase of processed food items monthly	70.1%	10.4%	11.7%	7.8%	100.0%
	% within When do you take processed food	24.3%	17.4%	33.3%	66.7%	25.3%
	% of Total	17.8%	2.6%	3.0%	2.0%	25.3%
4001-6000	Count	21	6	6	3	36
	% within How much do you spend on purchase of processed food items monthly	58.3%	16.7%	16.7%	8.3%	100.0%
	% within When do you take processed food	9.5%	13.0%	22.2%	33.3%	11.8%
	% of Total	6.9%	2.0%	2.0%	1.0%	11.8%
more than 6001	Count	24	3	3	0	30
	% within How much do you spend on purchase of processed food items monthly	80.0%	10.0%	10.0%	.0%	100.0%
	% within When do you take processed food	10.8%	6.5%	11.1%	.0%	9.9%
	% of Total	7.9%	1.0%	1.0%	.0%	9.9%
Total	Count	222	46	27	9	304
	% within How much do you spend on purchase of processed food items monthly	73.0%	15.1%	8.9%	3.0%	100.0%
	% within When do you take processed food	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	73.0%	15.1%	8.9%	3.0%	100.0%

The second objective is to explore the possibilities of change in consumer behavior and perceptions due to price factor and to explore changes in demand behavior for which Regression analysis was done. Chi square is used to determine the spending habits of the respondents.

From the SPSS output Table 6, we can see that there is an association between monthly expenditure on breakfast cereal and the consumption of Processed Cereal Food. It has been found that the monthly expenditure is around Rs 2000 to Rs 4000 on breakfast cereal food.

TABLE 6.1
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.591(a)	9	.003
Likelihood Ratio	27.137	9	.001
Linear-by-Linear Association	3.477	1	.062
N of Valid Cases	304		

Note. a 7 cells (43.8%) have expected count less than 5. The minimum expected count is .89.

From the Table 6.1, it has been found that the significant value is 0.000 which is less than 0.05 at 95% confidence level. But as the thumb rule the significant value has to be less than 0.05 at 95% confidence level. In this case, the small value of Pearson's Chi-square test states that there is a significant interrelationship between monthly expenditure on breakfast cereal and the consumption of Processed Cereal Food. So at 95% confidence level $100-95=5$ divided by 100 or 0.05 significant level, it is concluded that there is a significant interrelationship between monthly expenditure on breakfast cereal and the consumption of Processed Cereal Food.

TABLE 6.2
Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	0.267	.006
N of Valid Cases		304	

The contingency coefficient gives the measure of strength of the output. If the value is close to 0, there is less correlation between the two variables. However, if the range is between 0.5 and 1, there exists a strong correlation. From the Table 6.1, it can be concluded that there is moderate correlation between the variables namely household income and consumption of Processed Cereal Food.

H_{2.1}: People spend around Rs 2000 on cereal process food. Accepted

H_{0.2.1}: People do not spend around Rs 2000 on cereal process food. Rejected

H_{2.2}: People spend around Rs 2000-Rs 4000 cereal process food. Accepted

H_{0.2.2}: People do not spend around Rs 2000-Rs 4000 cereal process food. Rejected

H_{2.3}: People spend around more than Rs 4000 cereal process food. Rejected

H_{0.2.3}: People do not spend around more than Rs 4000 cereal process food. Accepted

Price Sensitivity- Regression**TABLE 7**
Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Switch to traditional foods, Go to other shop, Will buy other brand, Postpone the purchase ¹ ^a		Enter

Note. a. Tolerance = .000 limits reached.

b. Dependent Variable: How much do you spend on purchase of processed food items monthly.

TABLE 8
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292 ^a	.085	.073	.96302

Note. a. Predictors: (Constant), Switch to traditional foods, Go to other shop, Will buy other brand, Postpone the purchase¹.

TABLE 9
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.806	4	6.452	6.957	.000 ^a
	Residual	277.296	299	.927		
	Total	303.102	303			

Note. a. Predictors: (Constant), Switch to traditional foods, Go to other shop, Will buy other brand, Postpone the purchase.

b. Dependent Variable: How much do you spend on purchase of processed food items monthly.

TABLE 10
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.267	.199		6.362	.000
	Go to Other Shop (GOS)	.221	.058	.228	3.830	.000
	Postpone the purchase (PP)	.121	.057	.136	2.130	.034
	Will Buy Other Brand (WBOB)	-.144	.056	-.152	-2.543	.011
	Switch to Traditional Foods (STF)	.020	.056	.022	.351	.726

Note. a. Dependent Variable: How much do you spend on purchase of processed food items monthly.

$$Y = b_0 + b_1 \text{GOS} + b_2 \text{PP} + b_3 \text{WBOB} + b_4 \text{STF} + e \quad (1)$$

Here Y is dependent variable namely “how much do you spend on purchase of processed food items monthly”.

$$Y = 1.267 + 0.221 + 0.121 - 0.144 + 0.020$$

“How much do you spend on purchase of processed food monthly?” is being used as an independent variable and Go to other shop, Postpone the purchase, Will buy other brand and Switch to traditional foods are the dependent variables and enter method has been used[‡].

‡ See SPSS Output Table no 7

The first table provided by SPSS is a summary of the model that gives the value of R and R² for the model. For these data, R is 0.292[§] and because there is only one predictor, this value represents the simple correlation between “How much do you spend on purchase of processed food monthly?” and Go to other shop, Postpone the purchase, Will buy other brand and Switch to traditional foods (this can confirm by running a correlation). The value of R² is 0.085^{**}, which tells us that monthly spending on the purchase of Processed Cereal Food can account for 8.5% of the variation in Go to other shop, Postpone the purchase, Will buy other brand and Switch to traditional foods.

The next part of the output reports an analysis of variance (ANOVA). The most important part of the table is the F-ratio, which is calculated using equation (2), and the associated significance value. For these data, F is 3.009, which is significant at $p < 0.001$ (because the value in the column labeled Sig. is less than 0.006)^{††}. This result tells that there is less than a 0.6% chance that an F-ratio this large would happen by chance alone. In short, the regression model overall predicts rate cereal food spending significantly well.

The ANOVA tells whether the model, overall, results in a significantly good degree of prediction of the outcome variable. However, the ANOVA doesn't tell about the individual contribution of variables in the model (although in this simple case there is only one variable in the model and so we can infer that this variable is a good predictor). The SPSS Output Table 10, provides details of the model parameters (the beta values) and the significance of these values. Equation (1) shows that b_0 was the Y intercept and this value is the value B for the constant. So, from the table, b_0 is .221, .121, -.144 and .020, and this can be interpreted as meaning that when no there is go to other shop (when $X = 0$), the model predicts that there will be 2.2 times shift if the price go up. All other variables are not useful since the significant value > 0.05 and the other values is not significant at 95% confidence level.

H_{2.4}: If price increase then the customer will go to other shop. Accepted

H_{0.2.4}: If price increase then the customer will not go to other shop. Rejected

H_{2.5}: If price increase then the customer will postpone the purchase. Accepted

H_{0.2.5}: If price increase then the customer will not postpone the purchase. Rejected

H_{0.2.6}: If price increase then the customer will buy other brand of cereal food. Accepted

H_{0.2.6}: If price increase then the customer will not buy other brand of cereal food. Rejected

H_{0.2.7}: If price increase then the customer will switch to traditional foods. Rejected

H_{0.2.7}: If price increase then the customer will not switch to traditional foods. Accepted

FINDINGS OF THE STUDY

Demographic Composition

§ See SPSS Output Table no 8

** See SPSS Output Table no 9

†† See SPSS Output Table no 10

Age and other variables. Study found a relationship between educational qualification of the respondents and age. The reason for education being independent variable is because it has been found that age determines education qualification of the respondent. It was found that the percentage of people getting more educated is increasing with age which means as the age increased the education qualification also increased. Out of the age group of less than 25, 29.3% are Under-graduates, 41.5% are graduates, 8.9% are post graduates 15.4% and 4.9% are professionals and doctorates respectively. Whereas in 26-35 age group majorities of the respondents i.e. 56% are post graduates and rest are from other educational groups. From the data analyzed it was found that there is a relationship between the age of the respondents and the occupation. And it was observed that as age is increasing so is the percentage of people getting into work. In less than 25 aged groups, majority of the respondents (65.0%) were students while in 26-35 age group 47.7% are service class, 12.3% business class and 35.4% were professionals. And majority of these service class people around 40% are working in public sector and 21.4% in private sector. This was significant at 95% confidence level.

Gender and Other variables. From the data the study tried to find a relationship between Gender and other demographic variables and following was found: Out of total respondents there are 40.8% males and 59.2% females and out of these 41.9% of males and 70% females are graduates. Males in Punjab are more into business (32.3%) and females are more into service with 45.6%. Both males and females are working with private jobs than public sector. This was significant at 95% confidence level.

Religion and Other Variables. From the data the study tried to find a relationship between Religion and other demographic variables and following was found:- there are more of Hindu and Sikh males and female. Out of the Singles, 25.7% are Under-graduates 38.6% are graduates 15.7% are post graduates and 15.7% are professionals. 59.3% of these singles are students and rests are either in service or business and the service class are working equally in both public sector and private sector. In all the age groups 42.8% were Hindus, 49.3% were Sikh while 1.0% and 6.9% were Muslim and Christians respectively out of the total of 40.8% males and 59.2% females.

Family Size and Other Variables. Family size respondents are majorly either graduates or post graduates with percentage of 34.9% and 30.8% respectively and family size is bigger in business class as compared to service class. Further in both private and public sector jobs family size is similar.

Age and Consumption. The analysis of data on the age of the respondents show that less than 25 age and 26-35 age group consume more Processed Cereal Food than other age groups. In less than 25 age group 59.3% of the respondents consume for breakfast, 26.0% for lunch, 9.8% for teatime and 4.9% for dinner. In 26-35 age group 81.5% of respondents consume for breakfast, 9.2% for lunch and 9.2% for teatime. In age group of 36-45 only 18% consume for breakfast and 46-55 ages consume less cereal processed with 11% for breakfast. The result was significant at 95% confidence level.

Gender and consumption. From the data analyzed it was found that between males and females in Punjab Females consume more cereal process foods than males. Amongst males 64.5% of them consume cereal food during breakfast and 21.0% for lunch and 7.3% and 7.3% respectively for teatime and dinner respectively. Amongst females the consumption

pattern is that 78.9% consume for breakfast, 11.1% for lunch and 10.0% for teatime, which was found significant at 95% confidence level.

Marital status and consumption. Married people consume more cereal process food for breakfast than singles, separated and divorcees. In singles 62.1% of the people consume cereal processed food as breakfast, 22.9% for lunch, 10.7% for teatime and 4.3% as dinner. Whereas 82.9% of the married respondents consume cereal food for breakfast, 9.2% for lunch while 5.9% and 2.0% for teatime and dinner respectively. In case of separated and divorcees 50% of the respondents consume cereal processed food as breakfast and 50% of the respondents at teatime. The result was significant at 95% confidence level.

Family size and consumption. From the data analyzed it was found that family size of up to 2 members consume less cereal process food and family size of 2-4 members and 4-6 members consume more cereal process food. And family size above 6 members don't consume cereal process food. In family size of 2 members, 88.9% of consumption of cereal food is for breakfast, and 11.1% for dinner. While in family size of 2-4 members 70.4% consumption is for breakfast, 15.4% for lunch while 8.9% and 5.3% for teatime and dinner respectively. Where as in family size with 4 to 6 members 39.1% consume as breakfast 8.6% as lunch 4.9% for teatime and 3.0% for dinner and family size with 6 and above members do not consume cereal food which was significant at 95% confidence level.

Education Qualification and Consumption. From the data it was found that as far as educational level and consumption of cereal process food is concerned Under Graduates and Post Graduates consume more cereal process food than people with professional degree and people with Doctorate degree. Out of under graduates 58.0% of respondents consume cereal food for breakfast, 30.0% for lunch and 12.0% consume for teatime. While the post graduates are concerned 67.3% consume for breakfast, 18.7% for lunch, 11.2% for teatime and 2.8% for dinner. Only 26% of the professionals and 14.8% of the doctorates consume cereal food.

Occupation and Consumption. From the data analyzed it had been found that students and service class consume more Processed Cereal Food than Business class, Professionals and Unemployed people. In Service class, 87.6% consume for breakfast, 6.2% for lunch and 6.2% for teatime. While in Business class 74.1% of them consume for breakfast and 25.9% for lunch. Only 17.8% and 12.5% of the professionals and unemployed consume cereal food. Whereas students' consumption pattern is concerned, 47.0% consume as breakfast, 31.3% for lunch, 14.5% for teatime and 7.2% for dinner. This was found significant at 95% confidence level.

Nature of Job and Consumption. From the analysis it was also found that Private Employees consume more cereal process food than Government employees. In Government employees, 68.2% consume for breakfast, 23.6% for lunch and 8.2% for teatime. Whereas private employees' consumption pattern is concerned, 75.2% consume as breakfast, 10.3% for lunch, 10.9% for teatime and 3.6% for dinner. This was found significant at 95% confidence level.

Religion and Consumption. From the data analyzed it was found that as far as religion is concerned it was found that in Punjab Sikhs and Hindus consume more cereal process food than Muslims or Christians. The consumption pattern of Hindus is as follows:-

- Out of the total data, 60.0% consume as breakfast, 26.9% for lunch, 8.5% for tea time and 4.6% for dinner. The consumption patter of Sikh was as follows:-
- Out of the total data, 84.0% consume as breakfast, 5.3% for lunch, and 10.7% for teatime
- Whereas only 1% and 6.9% of Muslims and Christians respectively consume cereal food which was found significant at 95% confidence level

Income and Consumption. From the analysis of the data it was found that people with higher income consume more Processed Cereal Food than people with middle income or lower income. The consumption pattern of higher income group is 74.0% consume as breakfast, 16.3% for lunch, 7.3% for teatime and 2.4% for dinner. Only 15% and 10% of middle and lower middle income group respectively consume Processed Cereal Food. This is significant at 95% confidence level.

Total Spending and consumption. Regarding monthly spending on Processed Cereal Food is concerned it was found that people spend around Rs 2000 to Rs 4000 on cereal process food. 53.0% of respondents spend Rs 2000 on the cereal food, 25.3% respondents around Rs. 2000-4000, 11.8% spend around Rs 4000-6000. Only 9.9% of the respondents are ready to spend more that Rs 6000 on Processed Cereal Food. And People consume more cereal process food as breakfast than lunch or dinner and they prefer cornflakes (51%) and porridge/Dalia (33.6%) than oats (14.5%) or Muesli (1%).

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