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Demographics and Format Choice among the Food & Grocery Retail Consumers in Punjab, India

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ABSTRACT

Emergence of modern food and grocery (F&G) retail formats is a recent phenomenon in India. The Indian F&G retailing has largely been dominated by the traditional format i.e., kiryana stores for past so many decades. The changing demographics of resilient India has changed the landscape of F&G retailing in India. The present study aims to explore the effect of consumer demographics on their preference towards the different formats of retail i.e., kiryana store, convenience store, supermarket and hypermarket in the state of Punjab, India. For the purpose of the study, primary data from 825 respondents have been collected through a structured questionnaire in the Malwa, Majha and Doaba regions of Punjab, India along with the capital city of Punjab, Chandigarh. Various descriptive (mean, standard deviation, cross tabulations) and inferential statistical tools (t-Test, ANOVA) have been used to test the hypotheses. It is found that consumers' demographics i.e., gender, age, marital status, occupation, education, family unit size and monthly household income have a significant association when it comes to preference of various F&G retail formats i.e., traditional and modern both.

1. Introduction

Retailing in India has undergone a radical change in the last two decades after the post-reform period. The small corner shops have taken the shape of high streets and malls that provide consumers with a wider choice and the convenience of shopping under one-roof. In recent past the share of modern trade to the total trade has shown a rise and it has been reported to been range of 8-10 per cent for the period (2012-15) by Images Retail Intelligence Services (IRIS, 2013) research. However, a recent study by Boston Consulting Group and Retail Association of India (2015) has predicted that the modern trade in India would grow by approximate 21per cent (CAGR) between 2015 and 2020.As per the CII-BCG Report "Retail transformation: Changing your performance trajectory", the overall retail market has the potential to grow from~630 Billion USD in 2015 to 1100-1200 Billion USD in 2020, with organized retail having potential to be close to 12-15% of the opportunity. Considering the growth potential of modern trade and evolving needs of the consumers, it is crucial for the retailers to segment the customer base and develop strategies to extend appropriate retail offerings to the customers.

The present-day retailing has evolved from the times of barter system, when products were retained for self-consumption and excess produce if any, were exchanged for by individuals to meet their respective needs. Food has been described as one of the basic needs of an individual (Maslow, 1943) and consequently food & grocery (F&G) shopping remains a necessary and routine activity for every consumer. The Indian retail sector is built around various retail categories (clothing & apparel, footwear, electronics, jewelry, food services etc.), of which each one has its own structure, growth dynamics and prospects. Of the total retail market size, food & grocery (F&G) segment remains the largest retail category contributing approximately 60 per cent of the total retail turnover in India (IRIS, 2013). Further, the percentage share of organized F&G segment to total F&G retail stands at less than 2 percent (ibid), that all together makes it as one of the most attractive categories for the modern retailer to invest into. However, many growth drivers have made the Indian F&G retail landscape undergo a sequential change in its structure & size, which has led to the emergence of new retail formats in the recent past. A retail format is defined as a broader classification of retail offerings that a retailer presents to the shopper, in a way that latter perceives value from it. But largely the acceptance of modern formats amongst the shoppers remains an underlining challenge. The modern formats are facing the challenge of co-existence with that of the traditional formats in food & grocery retailing. In the recent past, the unpretentious replication of formats from the west without understanding the local demographics has created a silent gap in the evolution of retailing in India.

Therefore, it becomes imperative for retailers to understand the essentials and non-essentials of retailing so as to enable them to offer a format that can satisfy their customers' needs and build shoppers' preference for a particular format. However, from time to time, the retailers' have been involved in the evolution of new formats; managing the one in existence and discarding the not so popular formats because of many contributory factors in the retail environment (Reynolds, Howard, Cuthbertson & Hristov, 2007), of which

shoppers' demographics remains one of the vital factors. "Demography refers to the vital and measurable statistics of a population. Demographic characteristics, such as age, sex, marital status, income, occupation, household size and education, are most often used as the basis for market segmentation" (Schiffman and Kanuk, 2008).

The purpose of this paper is to analyse relations between demographic factors (age, gender, marital status, income, household size, qualification, occupation) and the customers' choice of the F&G retail format (kiryana store, convenience store, supermarket and hypermarket) in state of Punjab, India. Therefore, such an understanding of consumer shopping behaviour in F&G category would be vital for the success of the retailers (traditional & modern) in India.

2. Review of Literature

The origin of supermarkets goes back to late 1920s in United States of America and it became so popular that by the 1950s this new retail model has been traced in many countries across the globe (Zimmerman, 1955). No doubt the western originated formats are assumed to be advanced retail institutions (Levitt, 1976) but they have mostly conveyed the socio-cultural values away from those of the emerging country (Lo, Lau & Lin 2001; Halepete, Iyer & Park, 2008; Amine & Lazzaoui, 2011) like India. Reynolds *et al.* (2007), Mukherjee & Banerjee (2013) have clearly stated that retail formats are ever evolving rather than holistic creations. Therefore, simple replication of the western models without understanding the demographic linkages are not going to succeed in the Indian retail market. This is evident due to the fact that the consumers tend to shop at different formats, depending partly on their demographic characteristics (Baltas & Papastathopoulou, 2003).

Several studies have focused to analyze the evolution of retail structure in India (Sengupta, 2008; Reardon & Minten, 2011) but a limited work has revealed the linkage between the demographic characteristics and choice of retail format in context of Indian F&G retail market. An early study by Applebaum (1951) has laid stress on the fact that having a clear understanding of consumer's buying behavior patterns is incomplete without having considered the composition (i.e., sex, age group, color, economic and educational status, occupation, religion and nationality origin) of the consumer. Most previous studies on grocery shopping have attempted to investigate the relationship between frequent/occasional patrons and the shoppers' demographic characteristics (Bearden& Woodside, 1978; Crask and Reynold, 1978; Bawa and Ghosh, 1999; Carpenter and Moore, 2006). Taking a cue from the study by Ezell and Motes (1985), some interesting outcomes about the male and female grocery shoppers are underlined. It has been found that male and female shoppers possessed more or less common set of attitudes and behaviors leading to similar shopping patterns. Contrary to that Davies and Bell (1991), Piper and Capella (1993), have highlighted the trend of greater male involvement in grocery shopping. The results have also suggested that the married males who expressed the responsibility for grocery shopping too expressed great level of enjoyment while shopping at the supermarkets. The study has suggested the retailers to make offerings that are particularly valued by the males, rather than the female customers. Dholakia, Pedersen & Hikmet (1995) study, however, has found yet another dimension where the male counterpart in a traditional married household took active participation in the shopping of apparels than in the purchases of household groceries. Thus, revealing less or no interest by males in purchase of daily need items.

Lilley (1996), Hare, Kirk & Lang (2001), Moschis (2004), Meneely, Burns & Strugnell (2009) have highlighted age as another important demographic factor that affects the consumers' choice of retail format. It has been found that the physical changes associated with advancing age such as poor health, loss of appetite, having no natural teeth or uncomfortable false teeth, loss in strength and limberness, socio-psychological changes such as loneliness, loss of status following retirement from paid work, low income, lack of transport etc. are substantially associated with food & format choice. Moreover, it is also found that the preference of customers towards the neighborhood stores increases with the increasing age.

3. Methodology

The perusal of above mentioned and other similar studies has created a plot for the present study. No doubt, much research is done in developed economies to examine the marketing issues in food & grocery retailing but only few researches has been done in context to the demographics and Indian consumers' retail format choice especially in the food & grocery category. North India and that too the state of Punjab has been a latecomer to advances in food & grocery retailing as compared to West and South India (Sengupta, 2008). This very fact has also made it more important to undertake a study that understands the factors affecting the consumers' retail format choice in Punjab. The present study attempts to identify if consumer demographics such as gender, age, marital status, occupation, education, family size and monthly household income influence the choice of retail formats for the purchase of food & grocery products in Punjab. The description of different retail formats considered is illustrated in Figure 1.

Figure 1: Product Categories offered at different retail formats

Retail Format	Structure	Location	Average Retail Space (Sq.Ft.)	Product Categories offered																
				F&G	F&V	Frozen food	Butchery	Dairy Product	Bakery Product	Personal Care	Toiletries	Alcohol	Consumer Durables	Furniture	Kitchen Ware	Stationary	Toys & Sports Goods	Footwear	Time Wear	Home Furnishing	Jewelry
Kiryana Store	Unorganized	Neighborhood	1000	x				x		x	x										
Convenience Store	Both	Community Centre, Petrol Pumps	700	x				x			x										
Supermarket	Organized	Malls & Main Markets	3000	x	x	x		x		x	x	x			x	x					
Hypermarket	Organized	Outskirts of Cities & Malls	50000	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Source: Primary data

3.1 The objectives of the present study are:

1. To analyse the choice of retail format by the food & grocery consumers in Punjab.
2. To compare the retail format choice of food & grocery consumers' using the demographic factors i.e., gender, age, marital status, occupation, education, family size and monthly household income.

3.2 Hypotheses

$H_0$1a: There is no significant difference in the choice of kiryana store as a retail format for the male and female food & grocery consumers.

$H_0$1b: There is no significant difference in the choice of convenience store as a retail format for the male and female food & grocery consumers.

$H_0$1c: There is no significant difference in the choice of supermarket as a retail format for the male and female food & grocery consumers.

$H_0$1d: There is no significant difference in the choice of hypermarket as a retail format for the male and female food & grocery consumers.

$H_0$2a: There is no significant difference in the choice of kiryana store as a retail format for the consumers from different age groups.

$H_0$2b: There is no significant difference in the choice of convenience store as a retail format for the consumers from different age groups.

$H_0$2c: There is no significant difference in the choice of supermarket as a retail format for the consumers from different age groups.

$H_0$2d: There is no significant difference in the choice of hypermarket as a retail format for the consumers from different the age groups.

$H_0$3a: There is no significant difference in the choice of kiryana store as a retail format for married and unmarried food & grocery consumers.

$H_0$3b: There is no significant difference in the choice of convenience store as a retail format for married and unmarried food & grocery consumers.

$H_0$3c: There is no significant difference in the choice of supermarket as a retail format for married and unmarried food & grocery consumers.

$H_0$3d: There is no significant difference in the choice of hypermarket as a retail format for married and unmarried food & grocery consumers.

$H_0$4a: There is no significant difference in the choice of kiryana store as a retail format for the food & grocery consumers having different occupation.

$H_0$4b: There is no significant difference in the choice of convenience store as a retail format for the food & grocery consumers having different occupation.

$H_0$4c: There is no significant difference in the choice of supermarket as a retail format for the food & grocery consumers having different occupation.

$H_0$4d: There is no significant difference in the choice of hypermarket as a retail format for the food & grocery consumers having different occupation.

$H_0$5a: There is no significant difference in the choice of kiryana store as retail format for the food & grocery consumers having different educational attainments.

$H_0$5b: There is no significant difference in the choice of convenience store as retail format for the food & grocery consumers having different educational attainments.

$H_0$5c: There is no significant difference in the choice of supermarket as retail format for the food & grocery consumers having different educational attainments.

$H_0$5d: There is no significant difference in the choice of hypermarket as retail format for the food & grocery consumers having different educational attainments.

$H_0$6a: There is no significant difference in the choice of kiryana store as retail format and family size of the food & grocery consumers.

$H_0$6b: There is no significant difference in the choice of convenience store as retail format and family size of the food & grocery consumers.

$H_0$6c: There is no significant difference in the choice of supermarket as retail format and family size of the food & grocery consumers.

$H_0$6d: There is no significant difference in the choice of hypermarket as retail format and family size of the food & grocery consumers.

$H_0$7a: There is no significant difference in the choice of kiryana store as retail format and the monthly household income of the food & grocery consumers.

$H_0$7b: There is no significant difference in the choice of convenience store as retail format and the monthly household income of the food & grocery consumers.

$H_0$7c: There is no significant difference in the choice of supermarket as retail format and the monthly household income of the food & grocery consumers.

$H_0$7d: There is no significant difference in the choice of hypermarket as retail format and the monthly household income of the food & grocery consumers.

3.3 Research Design

The present study is descriptive and empirical in nature. Wherein, stratified random sampling method has been used to capture a representation of adult food & grocery retail customers in the state of Punjab. For the purpose of the study, the three geographical classified regions of the state of Punjab are considered i.e., Malwa, Majha and Doaba. Out of these regions, the Malwa which remains the regions with maximum number of districts in the state is the largest and key market of Punjab. Further, only those cities having all four retail formats (kiryana store, convenience store, supermarket and hypermarket) in these three regions are covered. One city from each region having the presence of all retail formats is considered. However, from the Malwa region two cities are considered because it represents the region having the maximum numbers of districts and larger area cover under its preview. The present study also covers Chandigarh (Union Territory), the capital of Punjab and Haryana and its satellite town in Punjab– Mohali. Although, these two cities do not fall under any of the region but are still covered.

Thus, the following strata were identified:

- Majha region - Amritsar
- Doaba region - Jalandhar
- Malwa region - Ludhiana & Patiala
- Chandigarh & Mohali representing the capital of Punjab and its satellite town, respectively.

Initially, a pilot study was done in Chandigarh. The interviews with the retailers in the city of Chandigarh were scheduled and the shoppers at different retail formats were interviewed as per convenience to explore the attributes affecting the consumers' choice of the retail formats for shopping of food & grocery items for the purpose of framing the questionnaire. The interview schedules and review of literature acted as a platform for framing of initial draft of the questionnaire. Subsequently, an exercise to pre-test the questionnaire was undertaken before the same could be administered in full for collection of the data. During this phase, based on the feedback and suggestions received from the retailers and shoppers, the statements were reframed for better understanding of the respondents.

3.4 Data Collection

Primary data was collected through structured questionnaire. A total of 900 responses were collected, out of which, only 825 questionnaires were usable while remaining 75 were not considered due to incomplete nature of the data provided by the respondents. Responses from 150 shoppers visiting the different food & grocery retail formats i.e. kiryana store, convenience store, supermarket and hypermarket were collected in each city. Finally, 138 questionnaires from Amritsar, 143 from Jalandhar, 127 from Mohali, 143 from Ludhiana, 132 from Patiala and 142 from Chandigarh were finally considered as usable data for further analysis.

4 Data Analysis

The data have been analysed using SPSS. A combination of descriptive and inferential statistics has been used. The confidence level of 0.05 is assumed for the study. Bivariate statistical techniques like t– test and ANOVA has been applied for multi-level comparisons.

4.1 Demographic profile of the respondents

The demographic profile of 825 respondents (food and grocery retail customers) is summarized in the Table 1. All the respondents are adult male and female. Of the total of 825 respondents, 478 are male (57.94 percent) and 347 are female (42.06 percent) food and grocery shoppers. The different age brackets to which the shoppers belongedare30-40 years (37.58 percent) followed by 20-30 years (31.76 percent),40-50 years (17.33 percent), 50-60 years (7.64 percent) and 60 years & above (5.70 percent). Most of the retail customers are married

640 (77.58 percent) while 185 (22.42 percent) are unmarried. The respondents largely are from service class 439(53.21 percent) charted by housewife 130 (15.76 percent) and business class 104 (12.61 percent). 44.48 percent of respondents (367 in number) were graduates followed by 334 (40.48 percent) as postgraduates and 124 diploma holders/SSC (15.03 percent). 347 respondents have a family size of 4 members which represents 42 percent of the total sample size while 28 percent have a family size of 5 & above, whereas singles are only 2.18 percent of the total sample. Further, across the sample income level distribution have indicated that 31 percent of respondents have monthly household income (MHI)between Rs.20,000/- – 40,000/-, 28 percent have indicated Rs.60,000 & above, equal percent indicated MHI between Rs.40,000/- – 60,000/- and 13 percent indicated between Rs.10,000/- – 20,000/-.

Table-1: Respondents' demographic characteristics

Variables	Level	Frequency	Percentage
Gender	Male	478	57.94
	Female	347	42.06
	Total	**825**	**100.00**
Age	20-30 years	262	31.76
	30-40 years	310	37.58
	40-50 years	143	17.33
	50-60 years	63	7.64
	60 years and above	47	5.70
	Total	**825**	**100.00**
Marital Status	Married	640	77.58
	Unmarried	185	22.42
	Total	**825**	**100.00**
Occupation	Service	439	53.21
	Self- Employed	62	7.52
	Business	104	12.61
	Housewife	130	15.76
	Retired	34	4.12
	Student	56	6.79
	Total	**825**	**100.00**
Education	SSC/Diploma	124	15.03
	Graduate	367	44.48
	Postgraduate	334	40.48
	Total	**825**	**100.00**
Family Size	1 member	18	2.18
	2 members	69	8.36
	3 members	161	19.52
	4 members	347	42.06
	5 & above members	230	27.88
	Total	**825**	**100.00**
Monthly Household Income	Rs.10k-20k	110	13.33
	Rs.20k-40k	254	30.79
	Rs.40k-60k	230	27.88
	Rs.60k & above	231	28.00
	Total	**825**	**100.00**

(Results of primary survey)

4.2 Respondents' choice of food and grocery retail formats

The respondents which have been interviewed during the survey are found to be involved in cross-buying from the various retail formats for their food & grocery needs. Table-2 illustrates the choice of the food & grocery consumers towards the different retail formats i.e., kiryana store (KS), convenience store (CS), supermarket (SM) and hypermarket (HM). The measures for the choice of retail format are developed onto a five-point interval scale (i.e., never, rarely, occasionally, usually and always) to measure how often consumers shop for food and grocery items at different retail formats. It is observed from the Table-2 that the respondents are having kiryana store (mean score 3.19) as their first choice for purchase of food and grocery products followed by supermarket (mean score 3.14), convenience store (mean score 2.91) and the least preference for hypermarket (mean score 2.62). It is further observed that 50 percent of the respondents have never or rarely been to the hypermarkets for the shopping of food and grocery items.

Table-2: Respondents' choice of food and grocery retail formats

	Respondents' choice of retail format							
Store Formats	**Never**	**Rarely**	**Occasionally**	**Usually**	**Always**	**N**	**Mean**	**SD**
Kiryana Store (KS)	92 (11.15)	162 (19.64)	177 (21.45)	289 (35.03)	105 (12.73)	825	3.19	1.21
Convenience Store (CS)	147 (17.82)	169 (20.48)	184 (22.30)	265 (32.12)	60 (07.27)	825	2.91	1.23
Supermarket (SM)	109 (13.21)	132 (16.00)	221 (26.79)	264 (32.00)	99 (12.00)	825	3.14	1.21
Hypermarket (HM)	210 (25.45)	202 (24.48)	173 (20.97)	171 (20.73)	69 (08.36)	825	2.62	1.29

4.3 Consumers' demographics and retail format choice

A combination of descriptive and inferential statistics is used to analyze the effects of demographic variables on food and grocery retail format choice. For the same, t - Test is applied to examine the effect of gender (male/female) and marital status (married/unmarried) on retail format choice across the five levels of format preferences. O*ne-way analysis of variance (ANOVA)* is used to examine the effect of variables including age, occupation, education, family size and monthly household income on format choice. The descriptive method using mean and rank are applied to determine the significant association between demographic variables and retail format choice.

4.5 Results of Independent Sample t-test (Gender comparison)

The Independent t - test is applied to compare the significant difference between the choice of male and female (independent variables) towards the food and grocery retail formats (dependent variables).

Table-3: The independent t-test for effect of gender on retail format choice

Gender wise format choice	**Male**			**Female**			**t**	**df**	**P value/Sig. (2-tailed)**
	N	**Mean**	**SD**	**N**	**Mean**	**SD**			
Kiryana Store (KS)	478	3.22	1.24	347	3.13	1.17	1.07	823	0.29
Convenience Store (CS)	478	2.85	1.26	347	2.99	1.20	-1.65	823	0.10
Super Market (SM)	478	3.01	1.24	347	3.31	1.16	-3.45	823	**0.00****
Hyper Market (HM)	478	2.58	1.30	347	2.67	1.27	-0.97	823	0.33

Note: **p < 0.001

It is observed from table-3 that the value of t-ratio for the difference between the means of male and female in respect to the kiryana store (KS), convenience store (CS) and hypermarket (HM) as retail format choice is found to be non-significant (t-ratio=1.07; p-value = 0.29 &> 0.05; t-ratio = -1.65; p-value = 0.10 &> 0.05; t-ratio=-0.97; p-value = 0.33 &> 0.05 respectively). Thus, the null hypotheses $H_0$1a,$H_0$1band$H_0$1dare not rejected and it is inferred that the consumers' gender has no significant effect on the choice of retail format in case of kiryana store, convenience store and hypermarket.

Further, it is evident from table-3 that the value of t-ratio for the difference between the means of male and female in respect to the supermarket (SM) as retail format choice is found to be significant (t-ratio = -3.45; p-value = 0.00 &< 0.01). This difference is significant at 0.01 levels. Thus, the null hypothesis H_0 1c is rejected, and it is inferred that the consumers' gender has significant effect on choice of retail format in case of supermarket. The observation of the mean values of both the genders indicates that the mean score of the female consumers is more than the mean score of male consumers at high level of significance. It implies that females have higher preference for the supermarket as compared to males.

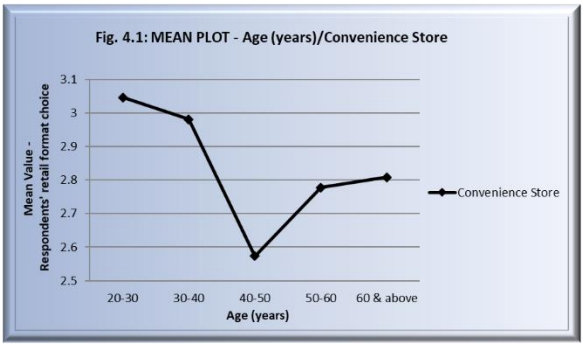
4.6 Results of ANOVA (Age group-wise comparison)

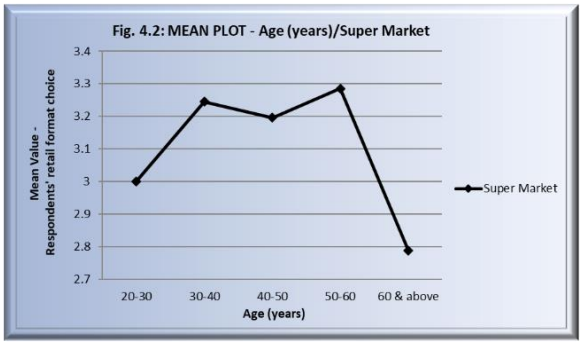
Analysis of variance (ANOVA) has been applied to test the effect of respondents' age on choice of retail format. The results from the table 4 suggest no difference in the retail choice of the kiryana store by the consumers belonging to different age groups. It is observed from table-4 that the value of F-ratio for the difference between the means of age groups in respect to the kiryana store (KS) is found to be non-significant (F-ratio=1.106; p-value = 0.352 &> 0.05) while the p-value in case of convenience store, supermarket and hyper market are less than .05(p equals to 0.003, 0.023, and 0.000 respectively) and found to be significant. Thus, the null hypothesis H_0 2ais not rejected and it is inferred that the consumers' age has no significant effect on kiryana store as a retail format choice. On the other hand, hypotheses $H_0$2b, $H_0$2c and $H_0$2d are rejected inferring that consumers in different age groups differ in their choice towards the convenience stores, supermarket and hypermarket.

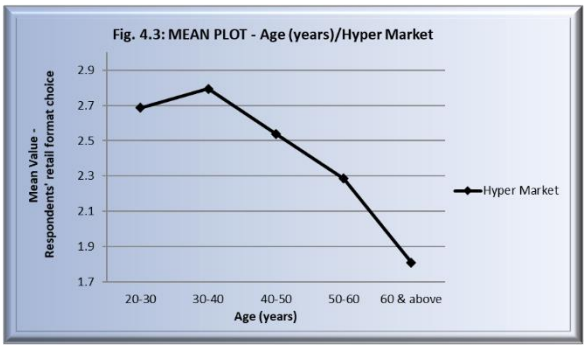
Table-4: Analysis of variance model for effect of age on retail format choice

	ANOVA	Sum of Squares	df	Mean Square	F	P value/Sig.
Kiryana Store (KS)	Between Groups	6.497	4	1.624	1.106	0.352
	Within Groups	1204.129	820	1.468		
	Total	1210.625	824			
Convenience Store (CS)	Between Groups	24.147	4	6.037	4.023	**0.003****
	Within Groups	1230.479	820	1.501		
	Total	1254.625	824			
Supermarket (SM)	Between Groups	16.180	4	4.045	2.772	**0.026***
	Within Groups	1196.615	820	1.459		
	Total	1212.795	824			
Hypermarket (HM)	Between Groups	49.455	4	12.364	7.676	**0.000****
	Within Groups	1320.795	820	1.611		
	Total	1370.250	824			

Notes: *p < 0.05; **p < 0.01







Further, from the observation of the mean scores (Mean Plot, Fig. 4.3), it is evident that the choice of hypermarkets amongst the younger respondents is high as compare to the elderly consumers of food and grocery products i.e., format hypermarket preference decreases with increase in age. For rest of the formats (convenience store and supermarket), no clear trend has been observed.

4.7 Results of Independent Sample t-test (Marital Status comparison)

The independent t - test is applied to compare the significant difference between the choice of married and unmarried individuals (independent variables) towards the food and grocery retail formats (dependent variables).

Table-5: The independent t-test for effect of marital status on retail format choice

Marital Status wise format choice	Married			Unmarried			t	df	P value/Sig. (2-tailed)
	N	Mean	SD	N	Mean	SD			
Kiryana Store(KS)	640	3.203	1.214	185	3.124	1.207	0.779	823	0.436
Convenience Store (CS)	64	2.852	1.255	185	3.092	1.141	-2.340	823	**0.020***
Supermarket (SM)	640	3.181	1.229	185	2.978	1.147	2.007	823	**0.045***
Hypermarket (HM)	640	2.642	1.329	185	2.546	1.142	0.894	823	0.372

Notes: *p < 0.05

It is noted from table-5 that the value of t-ratio for the difference between the means of married and unmarried consumers in respect to the kiryana store (KS: t-ratio=0.779; p-value = 0.436 &> 0.05) and hypermarket (HM: t-ratio=0.894; p-value = 0.372 &> 0.05) as retail format choice are found to be non-significant. Thus, the null hypotheses $H_0 3a \; and \; H_0 3d$ are not rejected and it is inferred that the consumers' marital status has no significant effect on kiryana store and hyper market as a choice of retail format**.**

On further investigation, it is evident from table-5 that the value of t-ratio for the difference between the means of married and unmarried individuals in respect to the convenience store (CS: t-ratio= -2.340; p-value = 0.020 &< 0.05) and supermarket (SM: t-ratio= 2.007; p-value = 0.045 &< 0.05) as retail format choice is found to be significant. This difference is significant at 0.05 levels. Thus, the null hypotheses H_0 3b and H_0 3care rejected, and it is inferred that the consumers' marital status has significant effect on retail format choice when it comes to convenience store and supermarket. The observation of the mean values of the marital status indicates that the mean score of the unmarried consumers is more than the mean score of married consumers at a high level of significance for the convenience store and vice-versa for the supermarket. It implies that unmarried have preference for convenience store while the married are likely to shop at supermarket.

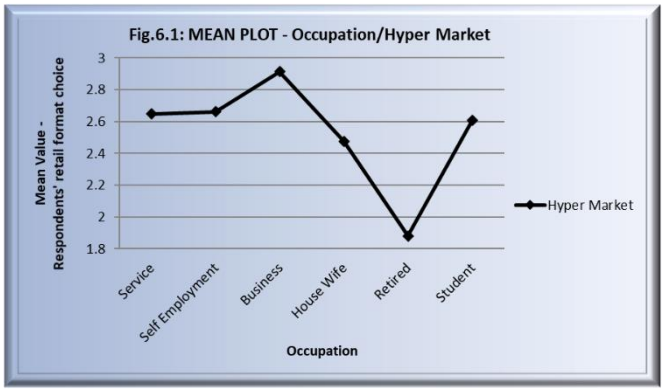
4.8 Results of ANOVA (Occupation-wise comparison)

Table-6: Analysis of variance model for effect of occupation on retail format choice

	ANOVA	Sum of Squares	df	Mean Square	F	P value/Sig.
Kiryana Store (KS)	Between Groups	14.698	5	2.940	2.013	0.075
	Within Groups	1195.927	819	1.460		
	Total	1210.625	824			
Convenience Store (CS)	Between Groups	16.311	5	3.262	2.158	0.057
	Within Groups	1238.314	819	1.512		
	Total	1254.625	824			
Supermarket (SM)	Between Groups	12.303	5	2.461	1.679	0.137
	Within Groups	1200.492	819	1.466		
	Total	1212.795	824			
Hypermarket (HM)	Between Groups	30.551	5	6.110	3.735	**0.002****
	Within Groups	1339.699	819	1.636		
	Total	1370.250	824			

Notes: **p < 0.01

Table 6 presents the results for ANOVA for the occupation wise comparison. The results show no difference in the choice of retail format among the consumers having different occupation (service, self-employed, business, housewife, retired and student) in case of kiryana store, convenience store and supermarket (p-value is more than 0.05). Therefore, the null hypotheses $H_0$4a, $H_0$4b and $H_0$4care not rejected. The difference between the means of occupations in respect to hypermarket (HM) as retail format choice is found to be significant (F-ratio=3.735; p-value = 0.002 &< 0.01). Thus, the null hypothesis$H_0$4d is rejected and it is inferred that there is significant difference in the choice of hypermarket as a retail format for the food & grocery consumers having different occupations.



Further, from the observation of the mean scores (Mean Plot, Fig. 6.1), it is evident that the preference of hypermarkets is highest amongst the people having occupation as business followed by self – employed individuals and is least preferred by elderly people, who are retired from the service.

4.9 Results of ANOVA (Educational attainment comparison)

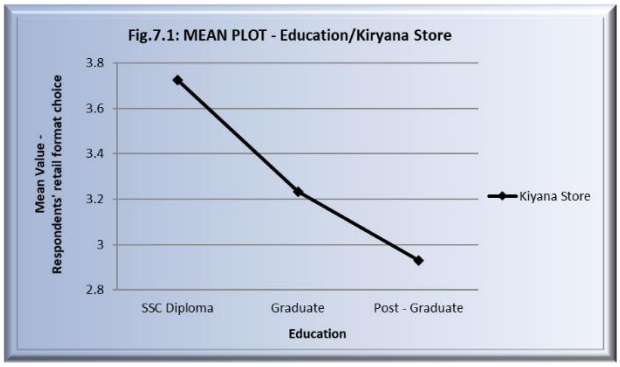
Table-7elucidates the value of F-ratio for the difference between the means of educational level (SSC Diploma, Graduate and Postgraduate) of respondents in respect to the kiryana store (KS), convenience store (CS) supermarket (SM) and hypermarket (HM). The values are found to be significant for KS, CS, SM and HM (F-ratio=20.94; p-value = 0.00 &< 0.01), (F-ratio=4.27; p-value = 0.01 &< 0.01), (F-ratio=7.29; p-value = 0.00 &<0.01) and (F-ratio=6.88; p-value = 0.00 &<0.01) respectively. Thus, all the null hypotheses $H_0$5a, $H_0$5b, $H_0$5c and $H_0$5d are rejected and it is concluded that consumers having different educational attainments differ in their choice towards food and grocery retail formats.

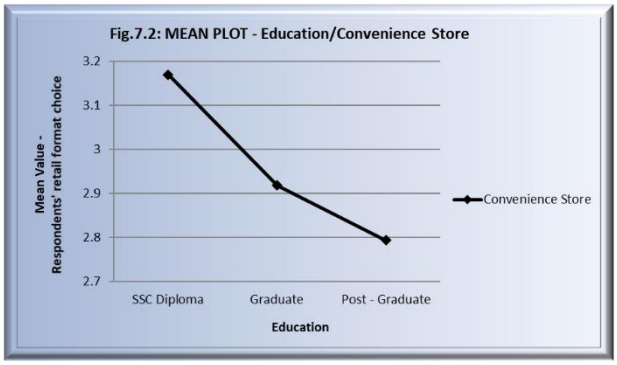
Table-7: Analysis of variance model for effect of educational attainment on retail format choice

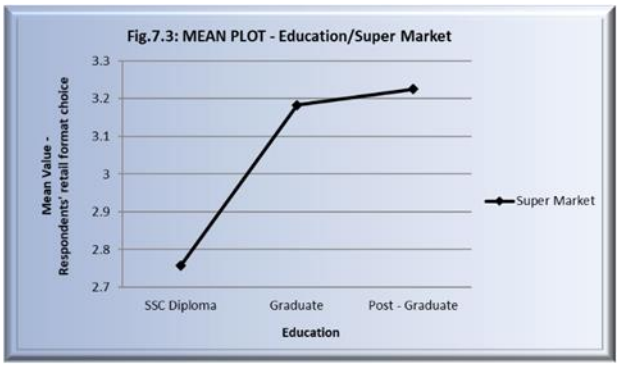
	ANOVA	Sum of Squares	df	Mean Square	F	P value/Sig.
Kiryana Store (KS)	Between Groups	58.68	2	29.34	20.94	**0.00****
	Within Groups	1151.94	822	1.40		
	Total	1210.63	824			
Convenience Store (CS)	Between Groups	12.89	2	6.44	4.27	**0.01****
	Within Groups	1241.74	822	1.51		
	Total	1254.63	824			
Supermarket (SM)	Between Groups	21.13	2	10.56	7.29	**0.00****
	Within Groups	1191.67	822	1.45		
	Total	1212.80	824			
Hypermarket (HM)	Between Groups	22.57	2	11.29	6.88	**0.00****
	Within Groups	1347.68	822	1.64		
	Total	1370.25	824			

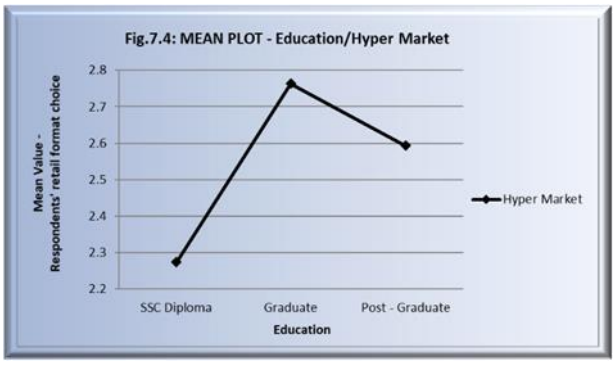
Notes: **p < 0.01

On comparing the means (Mean Plots – Fig. 7.1, 7.2, 7.3, 7.4), it is evident that the preference of kiryana store & convenience store decreases with increase in educational attainment of consumer, whereas it is vice-versa for the super and hypermarket formats. This implies that preference for supermarket increases with the increase in education level of consumer. However, the consumers patronizing hyper markets and having post-graduation as their educational qualification are an exception to this trend.









4.10 Results of ANOVA (Family unit size-wise comparison)

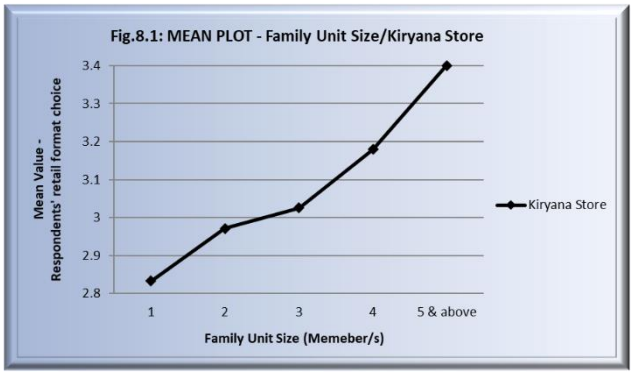
Table 8 demonstrates the value of F-ratio for the difference between the means of family unit size (1 member, 2 members, 3 members, 4 members, 5 & above members) of respondents in respect to KS, CS, SM & HM. The values are found to be significant for KS and SM (F-ratio=3.472; p-value = 0.008 &< 0.01) & (F-ratio=3.407; p-value = 0.009 &< 0.01) respectively, while p-value is more than 0.05 in case of convenience store and hypermarket. Thus, the null hypotheses$H_0$6a and $H_0$6c are rejected, and the null hypotheses H06b and H06d are not rejected. It is inferred that the consumer's family unit size has significant impact on kiryana store, and supermarket as a retail format choice.

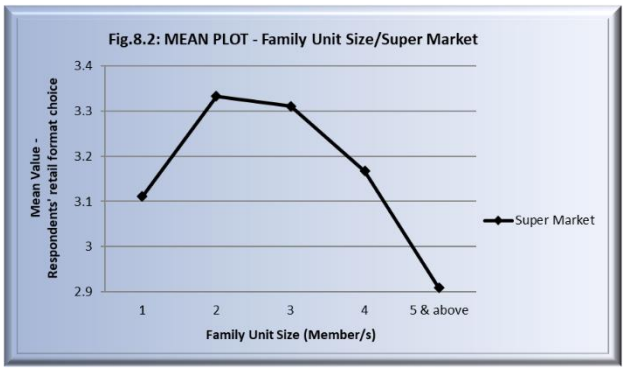
On comparison of the means for kiryana store and supermarket for which the results are highly significant, it is observed (refer figure 8.1) that the preference of kiryana store is low amongst the families having smaller unit size as compared to larger families for food and grocery purchases i.e., kiryana store preference increase with increase in family unit size of the consumer. It is also evident from the mean plot (Fig. 8.2) that the preference of supermarkets decreases with the increase in the family unit size, whereas families with single member are an exception to this trend.

Table-8: Analysis of variance model for effect of family unit size on retail format choice

	ANOVA	Sum of Squares	df	Mean Square	F	P value/Sig.
Kiryana Store (KS)	Between Groups	20.161	4	5.040	3.472	**0.008***
	Within Groups	1190.465	820	1.452		
	Total	1210.625	824			
Convenience Store (CS)	Between Groups	2.440	4	0.610	0.399	0.809
	Within Groups	1252.186	820	1.527		
	Total	1254.625	824			
Supermarket (SM)	Between Groups	19.824	4	4.956	3.407	**0.009***
	Within Groups	1192.971	820	1.455		
	Total	1212.795	824			
Hypermarket (HM)	Between Groups	12.148	4	3.037	1.834	0.120
	Within Groups	1358.102	820	1.656		
	Total	1370.250	824			

Notes: **p < 0.01





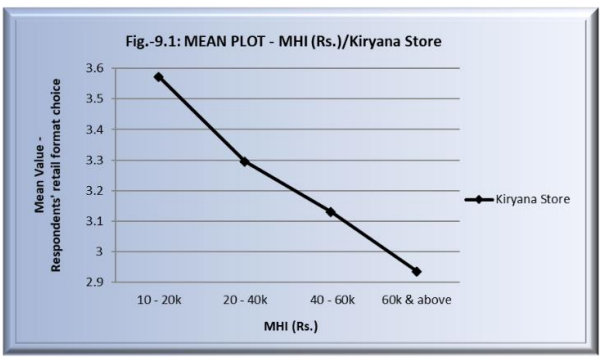
4.11 Results of ANOVA (Monthly Household Income-wise comparison)

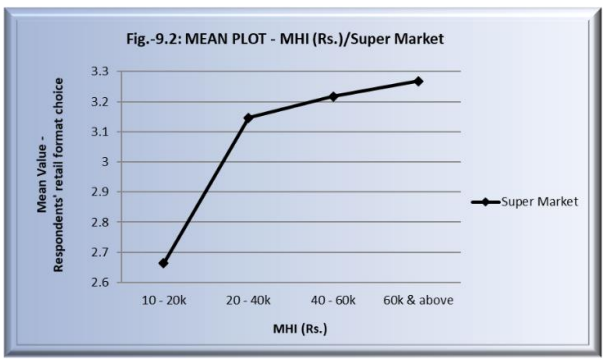
It is observed from table-9 that the value of F-ratio for the difference between the means of monthly household income (10K-20K, 20K-40K, 40K-60K and 60 L & above) of respondents in respect to the kiryana store (KS), supermarket (SM) and hypermarket (HM) are found to be significant (F-ratio=8.09; p-value = 0.00 &< 0.01), (F-ratio=6.97; p-value = 0.00 &< 0.01) & (F-ratio=4.76; p-value = 0.00 &< 0.01) respectively. Thus, the null hypotheses $H_0$7a, $H_0$7c and $H_0$7d are rejected, and it is inferred that consumers having different monthly household income differ in their choice towards food and grocery retail formats in case of kiryana store, supermarket and hyper market. In case of convenience store the p-value is more than 0.05 (p equals 0.99) so the hypothesis $H_0$7b is not rejected.

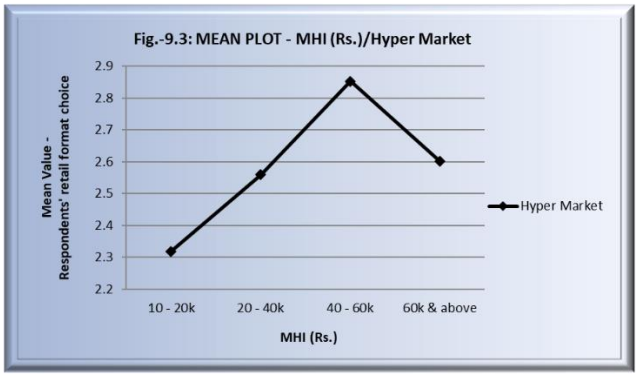
Table-9: Analysis of variance model for effect of monthly household income on retail format choice

	ANOVA	Sum of Squares	df	Mean Square	F	P value/Sig.
Kiryana Store (KS)	**Between Groups**	34.74	3	11.58	8.09	**0.00****
	Within Groups	1175.89	821	1.43		
	Total	1210.63	824			
Convenience Store (CS)	**Between Groups**	0.15	3	0.05	0.03	0.99
	Within Groups	1254.48	821	1.53		
	Total	1254.63	824			
Supermarket (SM)	**Between Groups**	30.14	3	10.05	6.97	**0.00****
	Within Groups	1182.65	821	1.44		
	Total	1212.80	824			
Hypermarket (HM)	**Between Groups**	23.44	3	7.81	4.76	**0.00****
	Within Groups	1346.81	821	1.64		
	Total	1370.25	824			

Notes: **p < 0.01







Looking at the Mean plot Fig.9.1, we can see that the preference of kiryana store is high amongst the families having lower income as compared to high income group families for food and grocery purchases. Whereas Fig.9.2 showcases a reverse trend for supermarket i.e., with the increase in MHI of the respondents, the preference of supermarket also increases. However, from Fig. 9.3, it is evident that the preference of hypermarkets increases with the increase in the monthly household income, whereas families with MHI 60k & above are an exception to this trend. The table 10, extends the bird's eye view of the complete findings of the present study. Based on these findings the retailers may extend the offerings to the prospective customers visiting these formats.

5 Conclusion

The present study is an attempt to profile the food and grocery consumers based on demographics to help the retailers of different formats to segment the market to attract new customers. It is found that the shoppers preferring the kiryana stores for their food & grocery needs are the ones having bigger families, lower monthly household income and are less academically qualified. The consumers patronizing the convenience store shoppers are the young unmarried individuals in the age group of 20-30 years. They are in early stage of their life cycle with limited demands. They are in the age of attaining higher education. The shoppers preferring the supermarket are largely married females, representing the age group of 30-40 years &50-60 years and belonging to smaller or nuclear families. They are educated and aware; thus, seeks less or no assistance from the salesperson while in the store. They belong from affluent class and are well-travelled across the globe and look forward to buying international merchandise back in their native markets. The hyper market shoppers are young individuals in the age group 30-40 years, educated and financially well to do.

Based on findings of the study it is recommended that the kiryana store retailers should capitalize on the advantages at their end. The kiryana store should extend the offerings to meet the needs of the customer group having bigger families and lower income. Due to lower income, these customer demand F&G items in small packing and more frequently rather than buying and storing the same. The proximity of the stores and availability of the informal credit is other advantage that the kiryana stores offers to the consumers. The modern retail formats i.e., supermarkets and hypermarkets remain the choice of middle-aged customers having higher income. They are the people spoilt for choice and looking forward to a variety of assortment in a given category. Therefore, the retailers of modern format should focus on exclusivity and extend a unique shopping experience to its prospective shoppers.

Table-10: Summary of Analysis – CONSUMERS' DEMOGRAPHICS AND RETAIL FORMAT CHOICE

Demographic Variables		N (825)	Kiryana Store (KS)			Convenience Store (CS)			Super Market (SM)			Hyper Market (HM)		
			$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.
GENDER#	Male (M)	478	3.22/(1)	1.24	0.29	2.85/(2)	1.26	0.10	3.01/(2)	1.24	***0.00**** *(F)*	2.58/(2)	1.30	0.33
	Female (F)	347	3.13/(2)	1.17		2.99/(1)	1.20		3.31/(1)	1.16		2.67/(1)	1.27	
AGE^	20-30 years	262	3.0649/(5)	1.2159	0.352	3.0458/(1)	1.1538	***0.003**** (20-30 years)	3.000/(4)	1.1210	***0.026**** *(50-60 years)*	2.687/(2)	1.2198	***0.000**** *(30-40 years)*
	30-40 years	310	3.2387/(2)	1.2126		2.9806/(2)	1.2358		3.245/(2)	1.1924		2.793/(1)	1.3057	
	40-50 years	143	3.2098/(4)	1.2382		2.5734/(5)	1.2643		3.195/(3)	1.2348		2.538/(3)	1.3415	
	50-60 years	63	3.3492/(1)	1.1935		2.7778/(4)	1.2756		3.285/(1)	1.2627		2.285/(4)	1.1699	
	60 years & above	47	3.2128/(3)	1.1216		2.8085/(3)	1.3455		2.787/(5)	1.5734		1.808/(5)	1.1912	
MARITAL STATUS#	Married (MR)	640	3.203/(1)	1.214	0.436	2.852/(2)	1.255	***0.020**** *(UM)*	3.181/(1)	1.229	***0.045**** *(MR)*	2.642/(1)	1.329	0.372
	Unmarried (UM)	185	3.124/(2)	1.207		3.092/(1)	1.141		2.978/(2)	1.147		2.546/(2)	1.142	
OCCUPATION^	Service	439	3.125/(5)	1.190	0.075	2.843/(5)	1.207	0.057	3.173/(2)	1.223	0.137	2.647/(3)	1.275	***0.002**** (Business)
	Self employed	62	3.177/(4)	1.409		3.000/(3)	1.228		2.984/(4)	1.221		2.661/(2)	1.214	
	Business	104	3.260/(3)	1.231		2.865/(4)	1.231		3.144/(3)	1.092		2.913/(1)	1.422	
	Housewife	130	3.408/(1)	1.179		3.015/(2)	1.245		3.277/(1)	1.239		2.477/(5)	1.228	
	Retired	34	3.382/(2)	1.045		2.588/(6)	1.438		2.824/(6)	1.445		1.882/(6)	1.225	
	Student	56	2.893/(6)	1.231		3.304/(1)	1.235		2.857/(5)	1.086		2.607/(4)	1.246	

Notes:
applied t-Test; ^ applied ANOVA; * 5% level of significance; ** 1% level of significance

Demographic Variables		N (825)	Kiryana Store (KS)			Convenience Store (CS)			Super Market (SM)			Hyper Market (HM)		
			$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.	$\bar{X}$/Rank	σ_x	P value/ Sig.
EDUCATION^	SSC/Diploma	124	3.726/(1)	1.157	0.00** (SSC/D)	3.169/(1)	1.167	0.01** (SSC/D)	2.758/(3)	1.157	0.00** (PG)	2.274/(3)	1.225	0.00** (Grad.)
	Graduate	367	3.234/(2)	1.155		2.918/(2)	1.250		3.183/(2)	1.200		2.763/(1)	1.319	
	Postgraduate	334	2.931/(3)	1.225		2.793/(3)	1.229		3.225/(1)	1.226		2.593/(2)	1.258	
FAMILY UNIT SIZE^	1 member	18	2.833/(5)	1.098	0.008** (5 & above members)	3.056/(1)	1.162	0.809	3.111/(4)	1.132	0.009** (2 members)	3.222/(1)	1.114	0.120
	2 members	69	2.971/(4)	1.212		2.754/(5)	1.205		3.333/(1)	1.256		2.464/(5)	1.378	
	3 members	161	3.025/(3)	1.219		2.894/(4)	1.233		3.311/(2)	1.130		2.627/(3)	1.249	
	4 members	347	3.179/(2)	1.152		2.939/(2)	1.219		3.167/(3)	1.229		2.686/(2)	1.311	
	5 & above members	230	3.400/(1)	1.277		2.896/(3)	1.277		2.909/(5)	1.213		2.517/(4)	1.260	
MONTHLY HOUSEHOLD INCOME^	Rs. 10k-20k	110	3.573/(1)	1.274	0.00** (Rs.10-20K)	2.927/(1)	1.239	0.99	2.664/(4)	1.258	0.00** (Rs.60K & above)	2.318/(4)	1.277	0.00** (Rs.40-60K)
	Rs. 20k-40k	254	3.295/(2)	1.150		2.898/(3)	1.263		3.146/(3)	1.199		2.559/(3)	1.280	
	Rs.40k-60k	230	3.130/(3)	1.114		2.891/(4)	1.172		3.217/(2)	1.177		2.852/(1)	1.252	
	Rs. 60k & above	231	2.935/(4)	1.285		2.918/(2)	1.267		3.268/(1)	1.197		2.602/(2)	1.311	

Notes:

applied t-Test; ^ applied ANOVA; * 5% level of significance; ** 1% level of significance

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