

Shoppers' attributes on supermarket store choice behaviour in food & grocery retailing in India-an empirical analysis

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Keywords

Store choice Behaviour, Demographics, Psychographics, Supermarkets, Food & Grocery Retailing, India.

Abstract

The Indian food and grocery retail sector has been evolving from traditional to a modern, organized retail market and the macro environmental factors have significantly affected this process. Store choice behaviour in Indian grocery retailing has now become a complex issue for both retailers and shoppers. Shoppers' attributes such as socio-economic, demographic, geographic and psychographic dynamics have influenced the choice of retail format and store in grocery retailing. The purpose of the paper is twofold: 1) to make a detailed study on the association and predictability of shopper's demographic and geographic attributes with supermarket store choice behaviour and 2) to examine the effect of shopper's demographic, geographic and psychographic attributes on segmenting the food and grocery retail consumers towards supermarket stores. The study is purely based on primary data collected from 1040 retail customers from sixty five supermarkets through mall intercept survey method using structured and non-disguised questionnaire in twin cities of Hyderabad and Secunderabad in Andhrapradesh in India. Both descriptive and inferential statistical tools have been used to test the statistical significance. The findings revealed that shoppers' age, monthly household income, family size, distance travelled to store, gender, education, occupation, lifestyle factors and shopping motives have been the significant predictors of supermarket store choice behaviour. The findings also revealed that shoppers' attributes have significantly affected the segmentation of food and grocery retail consumers into hedonic, utilitarian, autonomous, conventional and socialization.

Introduction

Shopping for food and grocery products has witnessed a paradigm shift in Indian retail market with conspicuous changes in the shopper buying behaviour driven by macro environmental factors such as strong income growth, favourable demographics and changing lifestyles. Most of the food and grocery products reach to consumers through the neighbourhood 'kirana' stores which are unorganised. The remarkable changes in shopper's attributes are driving what was once a traditional and small-scale retail outlet into an organised retail format aimed at catering to the evolving needs and tastes of discerning consumers. The ever changing shopper's psychographic variables like values, activities, interests, opinions, motives and life styles have also contributed immensely to the growth of 'Western' format

typologies such as convenience stores, discount stores, super markets and hypermarkets (Prasad and Aryasri, 2008). Studies on shoppers in India have largely been limited to their time and money spending pattern, demographic profile for a particular format (Sinha, 2003).

Furthermore, the most recent concepts like 'value for money' and 'value for time' have unconditionally altered the consumers' shopping orientations and buying behaviour toward choice of food and grocery store formats such as supermarkets in India. Though most of the previous retail studies have focused on store image and importance of store attributes in understanding the concept of store choice and patronage behaviour (Sinha and Banerjee, 2004, Sinha *et al.*, 2005; Sinha and Uniyal, 2004; Carpenter and Moore, 2006) yet a few research studies have revealed a connection among demographic, psychographic attributes and store format choice suggesting that individual characteristics of the shoppers influence their choice of format and store (Medina and Ward, 2000; Fox *et al.*, 2004; Gorge and Paraskevas, 2007). Moreover, few empirical research studies have been reported in this direction in the context of unexplored organised food and grocery retail market growing at 35 percent compounded annual growth rate (India retail report, 2009) Hence, the purpose of the study is to understand and examine the effect of shopper attributes on super market store choice behaviour. This study also aimed to segment the food and grocery retail customers towards the emergence supermarket stores.

Growth and development of supermarket stores

The recent literature (Reardon *et al.*, 2004; Trail 2006) has drawn attention to the speedy rise of supermarkets in different regions of the developing world and forecast their rapid spread. The diffusion of supermarkets in developing countries may be conceptualized as a system of demand by consumers for supermarket services and the supply of supermarket services (Reardon *et al.*, 2004). These are large, low cost, low margin, high volume, self service operations designed to meet the needs for food, groceries, and other non-food items. The supermarkets offer relatively less assortments but focus on specific product categories. They do not play the game on price rather use convenience and affordability as their salient features. These are the formats at the forefront of the grocery revolution controlling more than 30 percent of the grocery market in many countries. These are located in or near residential high streets contributing 30 percent to organised food and grocery retail sales. Super Markets can further be classified in to mini supermarkets typically 1,000 sq ft to 2,000 sq ft and large supermarkets ranging from of 3,500 sq ft to 5,000 sq ft. with more than 30,000 SKU's and having a strong focus on food & grocery and personal sales.

The entry of supermarkets in the retail arena brought about tremendous changes in the psyche of the Indian consumers. The Indian consumers now have the option to shop at the supermarkets instead of shopping at the neighbourhood kirana stores. Supermarkets with appealing surroundings, hygienic ambience and the availability of a wide variety of brands with better product display enabled consumers towards choice of this format. In India, Food World, Food Bazaar, More, Spencer, Reliance Fresh, Fresh @, Subhiksha, Vishal and Adani are the leading domestic retailers in supermarket stores. The supermarkets have been increased to 36,000 stores accounted for retail sales of Rs 69,330.1 million from 784 stores with retail sales of Rs. 10,100.0 million in 2001 (Euromonitor International retail report, 2007). The phenomenal growth and development of supermarkets from 2001 to 2007 is shown in Table 1.

Table 1. *Supermarket retail stores: Sales value, outlets and selling space from 2001-2007*

	2001	2002	2003	2004	2005	2006	2007
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Sales value in Rs million	10,100.0	14,000.0	18,500.0	22,108.0	28,298.0	39,617.2	69,330.1
Total outlets	784.0	980.0	1200.0	1368.0	1683.0	2380.0	3600.0
Selling space (000 sq.m)	106.0	150.0	200.0	249.0	332.0	448.2	657.5

Source: *Euromonitor International Retail Report, 2007*

Review of Literature

The behaviour of retail shoppers is a subject of study across the world (Sinha and Banerjee, 2004). The behaviour of shoppers differs according to the place where they are shopping and their involvement level with the act of shopping (Berman and Evans, 2005). There is a growing need to evaluate the true drivers of shopping behaviour in the Indian retailing context (Sinha and Banerjee, 2004, p.483). For many years, marketing researchers have considered issues related to consumers' store choice across various purchasing situations (Moore and Carpenter, 2006). From early studies that examine traditional retail format choice (Williams and Dadris, 1972) to recent inquiry into the non-traditional internet format choice (Keen *et al.*, 2004), the marketing literature has identified several factors that are consumer-related and situational factors that impact store choice behaviour (Leszczyc, Sinha, and Timmermans, 2000; Fox *et al.*, 2004; Carpenter and Moore, 2006).

Socio-economic, Demographic and Geographic Factors

Socio-economic class is a group of people who are similar in their behavior based upon their economic position (education, occupation and income) in the market place (Engel *et al.*, 1990). Extensive research indicates that consumers across social strata tend to exhibit characteristically differentiated psychological and behavioural patterns that eventually determine the store choice behaviour (Kohn *et al.*, 1990; Shim and Kotsiopoulos, 1993; Shim and Bickle, 1994; Gupta and Chintagunta, 1994; Morganosky, 1995; East *et al.*, 1995; Bawa and Ghosh, 1999).

Demographic factors such as age, gender, marital status, income, female working status, education, occupation and family size exert enormous influence on choice of store format in grocery retailing (Zeithaml, 1985; Kopp *et al.*, 1989; Sampson and Tigert, 1992; South and Spitze, 1994; Stone 1995; Fox *et al.*, 2004; Carpenter and Moore, 2006).

In general, the closer the consumers are to a store, the greater their likelihood to buy from that store. In contrast, the farther away consumers are from a store, the greater the number of intervening alternatives and thus the lower their likelihood to patronize that store (Loudon and Della Bitta, 1993). The travel time to a store is assumed to measure the effort, both physical and psychological, to reach a retail outlet. However, the effect of travel time varies by product. For some products, consumers are willing to travel very far (Runyon and Stewart, 1987).

Psychographic Dimensions

Psychographics is an approach used to define and measure the lifestyles of consumers using activities, interests and Tam and Tai (1998). Psychographics dimensions are the measurements of the consumer's mind, which pinpoints how he or she thinks, feels, reacts and reflects (Roy and Goswami, 2007). Psychographic dimensions enable us to understand why consumers behave the way they do (Schiffman and Kanuk, 2001). The psychographic description looks at the inner rather than the outward expression of the person in respect of product specific segmentation, buyer behaviour and shopping orientations, retail institutional strategies and consumer behaviour profiles (Edris and Meidan, 1989; Goswami, 2007). Traditional demographic variables cannot identify the complete characteristics of an evolutionary retail market because consumers in the same demographic group have very

different psychographic make-up (Sinha, 2003). Most of the psychographic studies attempt to segment customers in accordance with their values, activities, interests, and opinions (Blackwell and Miniard, 1994; Hawkins *et al.*, 2002). Values are end-states of life, the goals one lives for (Kahle, 1983). Values-widely held beliefs about what is acceptable and/or desirable (Goswami, 2007). Values influence both attitude and behavior (Kahle, 1983; Rokeach, 1973). The Rokeach Values Survey, the Value and Lifestyle Survey (VALS), and List of Values (LOV) are three surveys commonly used in marketing research to analyze consumer behavior (Kahle, Beatty, & Homer, 1986; Homer and Kahle, 1988). Psychographics or life style studies include attitudes or evaluative statements about the people, place, ideas, products, etc. are used to assess consumer buying behaviour (Hawkins *et al.*, 2002; Gonzalez and Bello, 2002; Sheth and Mittal, 2003).

Objectives of the Study

1. To study and examine the effect of shopper's socio-economic, demographic and geographic attributes on supermarket store choice behaviour ,
2. To examine the influence of shopper's psychographic attributes on segmenting supermarket consumers, and
3. To derive marketing implications from the information gathered.

Research Questions

The following research questions have therefore been developed to assess the effect of shopper attributes on super market store choice behaviour in food and grocery retailing.

Research question 1: Do shopper's socio-economic, demographic and geographic attributes have any association with supermarket store choice decisions? If yes, what is the effect of those attributes on supermarket store choice decisions?

Research question 2: Do shoppers' demographic and psychographic variables able to segment the supermarket store customers?

Research Methodology

The present study is descriptive in nature (cross-sectional design) based on primary data. The population frame (75 million) was the retail customers of food and grocery supermarket stores in the state of Andhra Pradesh in India. The sampling frame for the present research had been the twin cities of Hyderabad and Secunderabad with population of six million. The sample subjects for the present research were the adult retail customers of supermarket stores.

Data Collection Procedure

The primary data was collected using personal methods preferably mall-intercept personal interviews by administering a structured and non-disguised questionnaire (Sinha and Banerjee, 2004; Malhotra, 2008). The data were collected at forty different supermarket stores randomly selected from yellow pages. The survey team approached every third adult shopper leaving the retail store, asked whether he or she is interested to participate in the retail marketing survey and recorded all refusals.

Measures

The questionnaire used dichotomous, multiple choice and five-point Likert scale type statements. The questionnaire was divided into three parts: part-A, part-B and part-C. The part-A consists of nine questions connected to respondent's socio-economic, demographic, and geographic characteristics. The responses were measured using nominal and interval scales. The

second part-B consists of three questions relating to consumer's psychographic factors covering list of values (nine statements), activities (seventeen statements), interests and opinions (forty five statements) and shopping motives (twenty five statements). All items were measured on five-point likert scale. The third part-C consists of five questions relating to food and grocery shopping and store choice behaviour. For measuring psychographic variables, values related items are adopted from Kahle (1983), interest and opinion statements were adopted from VALS™ Survey, Gonzalez *et al.*, (2002), Wu (2003), Kelly, (2004). Shopping motives related items adopted from Sinha (2003). Store choice related items adopted from Sinha and Banerjee (2004); Carpenter and Moore (2006). All variables were measured using five-point Likert scale.

Validity and Reliability

All the measures used in the questionnaire were pre-tested over two stages with samples of academicians and retail store managers. The internal consistency of the instrument was tested through reliability analysis using Cronbach's Alpha. Reliability estimates for the construct variables are, values (0.71), Lifestyles (0.80), shopping motives (0.78) and Store choice behaviour (0.75) revealing a high degree of reliability. All reliability results are well-exceeded 0.70 lower limit of the acceptability (Hair *et al.*, 2003). The discriminant validity was assessed through principle component analysis using Oblimin rotation, and factor correlation matrix .exploratory factor analysis based on scree plot and eigenvalue greater than 1. Discriminant validity $p < 0.5$ is taken into consideration between dependent and each of the independent variables. Convergent validity was assessed through factor loadings and item-total correlations using confirmatory factor analysis considering the acceptance value 0.3 and above (Gerbing and Anderson, 1988).

Methods of Analysis

Both descriptive statistical tools (percentiles, mean and standard deviation) and inferential statistical tools (Chi-square, regressions and Univariate analysis of variance) were applied to test the formulated hypotheses. To test the research question 1, Chi-square statistical tool was used to test the association, dependence/independence among the variables. To further test the predictability, forward stepwise multiple regression approach (MLRA) was used.

For testing the research question 2, Mitchell's (1994) approach which is the combination of factor analysis, clustering analysis and discriminant analysis was used. Gonzalez *et al.*'s approach was used in factor analyzing the responses from interests and opinions, activities, values and shopping orientations. Discriminant analysis was used to find the variances among the emerged clusters. Finally, chi-square statistic was used to describe the clusters with demographic variables.

Statistical Results & Analysis

A total of 1625 retail customers were surveyed taking twenty five samples from sixty five supermarket store from twin cities of Secunderabad and Hyderabad in Andhra Pradesh. Only 1085 customers were responded and returned the survey instrument. This is a sixty six percent response rate. Out of this, only 1040 were usable as 45 were rendered unusable because of incomplete data.

Respondents' profile

All respondents were adult male and female food & grocery retail customers consisted of 590 female (56.7 percent) and 450 male (43.3 percent) with an average age of 32 years (range

20-62), modal age group 30-40 years and median age was 35 years. The majority of the respondents (85 percent) were married and rest 15.6 percent were un-married. The major chunk of the respondents (58.5 percent) had graduation as their educational qualification and least 18.9 percent had SSC as their minimum qualification and the rest 22.6 had PG as their academic qualification. The aggregated mean monthly household income was Rs 18,000 with 50.2 percent respondents had paid employment as their occupation. The average family size of the respondents was 5.2. A major chunk (94 percent) of the respondents lived within 4 km from different retail store formats and about 64 percent had travelled up to 3 km for shopping food and grocery products. The results of respondent's demographic, socio-economic and geographic variables were summarised in Table 2.

Table 2: Respondents' demographic, socio-economic and geographic characteristics

Variable	Description	Frequency	Percent	Mean	S.D
Gender	Male	450	43.3	-	-
	Female	590	56.7		
Age	20-30 years	338	32.5	32	8.56
	30-40	424	40.8		
	40-50	223	21.4		
	50 & above	55	5.3		
Marital Status	Married	884	85.0	-	-
	Un-married	156	15.0		
Education	SSC/Diploma	197	18.9	-	-
	Degree	608	58.5		
	PG & above	235	22.6		
Occupation	House wife	286	27.5	-	-
	Employment	522	50.2		
	Business	151	14.5		
	Others	81	7.8		
Monthly Household Income	Rs 10000-15000	137	13.2	Rs 18000	Rs 5000
	Rs 15000-20000	367	35.2		
	Rs 20000-25000	294	28.3		
	Rs 25000 & above	242	23.3		
Family size	1-3	264	25.4	5.2	0.752
	3-5	402	38.6		
	5 & more	373	36.0		
Distance Travelled to Store	1-2 Km	323	31.1	2.8	0.864
	2-3 Km	334	32.1		
	3-4 Km	236	22.7		
	4-5 Km	95	9.1		
	>5 Km	52	5.0		

Source: Primary data

The information on the respondents' behaviour towards supermarket formats revealed that that 23 percent have been with the retail outlets for less than one year, 34 percent have been with the retail outlets for two years and 33 percent have been with the retail outlets for more than two years. This shows that respondents have positive attitude towards supermarket stores. Approximately 36 percent of the respondents visited food and grocery supermarkets stores twice in a given month, 42 percent visited at least once in a given month and 22 percent

frequently visited. About 48.5 percent of the respondents revealed that supermarket format would be their preferred format when they go for shopping food and grocery products. 36.7 percent respondents expressed cross shopping behaviour (i.e. considering other formats for purchasing products). 68 percent respondents revealed that they would recommend supermarket store for shopping food and grocery products to their friends/neighbours/relatives. These results proved that respondents have a significant level of preference and repurchase behavior towards supermarket stores in food and grocery retailing.

Empirical results

For testing research question 1, Chi-square test was used. The findings reveal that Chi-square (χ^2) values are significant between supermarket store choice decisions and respondents' demographics in respect of age ($\chi^2=50.091$, df 12, $p=0.000$), gender ($\chi^2=25.210$, df 4, $p=0.000$), occupation ($\chi^2=80.388$, df 12, $p=0.000$), education ($\chi^2=18.942$, df 8, $p=0.015$), income ($\chi^2=81.886$, df 12, $p=0.000$), family size ($\chi^2=20.125$, df 8, $p=0.010$), distance travelled to store ($\chi^2=25.869$, df 12, $p=0.011$). Whereas, marital status ($\chi^2=8.88$, df 4, $p=0.064$) was proved to be insignificant for supermarket store choice decisions. Hence, it is resulted that all demographic variables except marital status have significant association with supermarket store choice decisions. It is implicit from the findings that supermarket store choice decisions are dependent on shopper's attributes.

Forward stepwise multiple linear regression approach (MLRA) was used to test the effect of shopper attributes on supermarket store choice decisions. The resulting regressing models for dependent variable was shown in Table 3 and their significance including distinct predictors at varying ' α ' levels presented in the following paragraphs.

Table 3. Summary regression models for effect of demographic variables on supermarket store choice decisions

Model	R	R ² Square	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ²	F	df1	df2	Sig.
1	0.337 ^a	0.114	0.108	1.163	0.057	53.346	1	1038	0.000
2	0.348 ^b	0.121	0.116	1.119	0.072	84.973	2	1037	0.000
3	0.359 ^c	0.129	0.124	1.114	0.008	9.734	3	1036	0.002
4	0.367 ^d	0.135	0.129	1.111	0.007	7.634	4	1035	0.008

a. Predictors: (Constant), MHI; b. Predictors: (Constant), MHI, Age; c. Predictors: (Constant), MHI, Age, DTS; d. Predictors: (constant), MHI, Age, DTS, Family size

The resulted regression models contributed significantly and predicted 11.4 percent variation by Monthly Household Income, 12.1 percent variation by MHI & Age, 12.9 percent variation by MHI, Age & Distance Travelled to Store and 13.5 percent variation by MHI, Age, DTS & Family Size in supermarket store choice decisions. The four evolved regression models shown in Table 4 for supermarket store choice decisions yielded a significant statistic ($F=53.346$, $p=0.000$; $F=71.317$, $p=0.000$; $F=51.190$, $p=0.000$ and $F=48.511$, $p=0.000$). It is implicit that predictors are accounted for significant variation in dependent variable.

Table 4. ANOVA values of regression models for effect of demographic variables on supermarket choice decisions

Model	Sum of Squares	df	Mean Square	F-value	Sig.

1	Regression Residual Total	72.255 1405.929 1478.184	1 1038 1039	72.255 1.354	53.346	0.000 ^a
2	Regression Residual Total	88.665 1173.557 1262.222	2 1037 1039	89.367 1.253	71.317	0.000 ^b
3	Regression Residual Total	100.322 1161.900 1262.222	3 1036 1039	63.610 1.243	51.190	0.000 ^c
4	Regression Residual Total	118.231 1149.852 1268.083	4 1035 1039	58.765 1.118	48.511	0.000 ^d

a. Predictors: (Constant), MHI; b. Predictors: (Constant), MHI, Age; c. Predictors: (Constant), MHI, Age, DTS; d. Predictors: (constant), MHI, Age, DTS, Family size

The predictor effects and beta coefficients for demographic variables on supermarket store choice decisions shown in Table 5 are significant for all four regression models. It indicated that independent variables such as MHI, Age, DTS & Family size, were related to dependent variable i.e., supermarket store choice decisions.

Table 5. Predictor effects and beta estimates for demographic variables (continuous) on supermarket format choice

Model		Unstandardised Coefficients		Standardized Coefficients	t-value	Sig.
		Beta(β)	S.E	Beta (β)		
1	(Constant)	2.738	0.103	----	26.667	0.000
	MHI	0.268	0.037	0.221	7.304	0.000**
2	(Constant)	3.179	0.110	---	28.970	0.000
	MHI	0.405	0.038	0.334	10.572	0.000**
	Age	-0.401	0.043	-0.291	-9.218	0.000**
3	(Constant)	2.912	0.139	----	20.984	0.000
	MHI	0.413	0.038	0.340	10.796	0.000**
	Age	-0.397	0.043	-0.289	-9.179	0.000**
	DTS	0.112	0.036	0.091	3.120	0.003*
4	(Constant)	3.452	0.146	----	23.453	0.000
	MHI	0.456	0.039	0.387	12.349	0.000**
	Age	-0.365	0.045	-0.027	-8.934	0.001*
	DTS	0.122	0.038	0.096	3.654	0.005*
	Family Size	0.119	0.039	0.098	3.456	0.002*

a Dependent Variable: Choice of Supermarket Format, Note: * $a < 0.01$, ** $a < 0.001$; Source: Primary Data

Univariate Analysis of Variance with specific custom model (sum of squares, type-3) was used to investigate the main effects of fixed demographic variables like gender, marital status, education and occupational status on the supermarket store choice decisions. The results shown in Table 6 revealed that there was significant effect of gender ($F=4.935$, $p=0.027$), occupation ($F=5.852$, $p=0.001$), education ($F=4.438$, $p=0.012$) and marital status ($F=4.120$, $p=0.043$) on supermarket store choice decisions.

Table 6. *Univariate analysis for demographic variables (fixed) on supermarket format choice*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	43.381(a)	7	6.197	5.601	0.000	0.037
Intercept	4888.204	1	4888.204	4418.095	0.000	0.811
Gender	5.461	1	5.461	4.935	0.027	0.005
Occupation	19.423	3	6.474	5.852	0.001	0.017
Education	9.820	2	4.910	4.438	0.012	0.009
Marital status	4.558	1	4.558	4.120	0.043	0.004
Error	1141.810	1032	1.106	---	---	---
Total	15445.000	1040	---	---	---	---
Corrected Total	1185.191	1039	---	---	---	---

a. *R Squared* = .037 (*Adjusted R Squared* = .030)

b. *Dependent Variable: supermarket format choice*

The Levene's test for homogeneity of variances was applied on supermarket store choice decisions. The tests for homogeneity of variance were significant ($F=3.438$, $p=0.000$) for supermarket store choice. The post hoc tests using Tamhane's T2 (equal variances not assumed) for examining multiple comparisons revealed that significant major differences occurred between housewife and business (0.4707 , $p=0.000$); employment and business (0.3808 , $p=0.001$) in occupation category. The significant major differences occurred for SSC/Diploma (0.2787 , $p=0.002$) in educational category.

For testing question 2, factor analysis was conducted to the psychographic variables containing nine statements for List of values (LOV), total of 45 statements concerning lifestyle factors such as activities (16 statements), interests (17 statements) and opinions (12 statements) and thirty eight statements relating to shopping orientations/motives. Factor models were selected based on Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy criteria (should be as near 1 as possible) which is a goodness of fit coefficient, Bartlett's test of sphericity (should be as close to 0 as possible) which is a badness of fit test, the Eigen values over one and amount of variance explained by the model. Each model was estimated using principal components analysis as the extraction method. Varimax with Kaiser Normalisation rotation method assisted in interpreting the data for list of value factors, activity factors, interest factors, opinion factors and shopping motive factors. Factors were labelled based on salient loadings. All loadings below 0.5 were dropped, and the factor analysis was recalculated. The Cronbach alpha was used to measure internal reliability by unit weighting items with salient loadings in a factor. Results of the individual loadings, Cronbach's alpha, and variance explained with factor labels for LOV, Lifestyles and Shopping orientations were shown in Table 7, Table 8, and Table 9 as Appendix-1, 2, and 3 respectively.

The resultant factors of three list of values (LOV), four activities, three interests, three opinion and eight shopping orientation were submitted to hierarchical clustering using Ward's method and five clusters were emerged as most acceptable. These were labelled as hedonic, utilitarian, autonomous, conventional and socialization type consumers. The average scores of the items were loaded highly on factors and had acceptable levels of reliability ranging from 0.685 to 0.749 measured by Cronbach's alpha. Later, MANOVA test was used to find out any differences exhibited on the basis of values, activities, interests, opinions and shopping

orientations. The multivariate test using Pillai's Trace and Wilks' Lambda and were conducted on marginal means obtaining values of Pillai's Trace =0.065, $F(20, 2236) = 1.887$, $p=0.012$ and Wilks' Lambda =0.94, $F(20, 1844.99)=2.05$, $p=0.010$ respectively. The clusters were different across the values, AIO's and shopping orientations. At the last stage, the five clusters were used as dependent variables and the averaged LOV, interests, opinions, activities and shopping orientation scores were used as independent metric variables for multiple discriminant analysis. The four canonical discriminant functions accounted for 92 percent of the variance in the dependent variable.

1. Hedonic type (22.1 percent)

These are the sort of respondents who use products or services for the sake of intrinsic enjoyment rather than to solve some problems. These shoppers are low on need-based buying, high on idea shopping, and have high unplanned purchases. Window shopping and storage display is important to them. They do shopping where they get abundant excitement and fun. They are mostly a group of variety seekers and trend setters. This segment has the highest number of respondents (both male and female) belonging to age group 25-40 years having monthly household income ranging from Rs. 30,000-40000. Location of the store is not important criteria for purchase of items.

2. Utilitarian type (26.9 percent)

These kinds of respondents are high on need-based buying, low on idea shopping and never resort to unplanned purchase. This segment consists of more female consumers belonging to working class and house wives. Location of the store and convenience is more important. This segment exhibits family related opinions and price conscious behaviour.

3. Autonomous type (22.5 percent)

This segment of respondents is more likely to take decisions themselves. They are neither sport enthusiasts nor fashionable. They tend to exhibit more self confidence and ability to choose right products and store formats for shopping. They seem to be time conscious and more often showing off leadership interests and intellectual related opinions. This segment has the highest number of respondents belonging to working and business categories. They have tendency to shop where they get accessibility/convenience and time saving from doing shopping.

4. Conventional type (15.4 percent)

This segment of respondents has hardly show interest either in window shopping or socialization at all. They show least interest in product quality and assortment. Location of the store is very important and owes a lot to their community. This segment believes that stores offer better service and good products at reasonable prices. Frequency of purchase is more than two times in a month.

5. Socialization type consumers (13.1 percent)

This segment of respondents like to socialize with their near and dears. They are high in window-shopping. They are moderately need based and not much of idea-shoppers. Location of the outlet is somehow important for them. They do not indulge in much unplanned purchase. The frequency of purchase is at least once in a month. Propensity to purchase is more in male consumers than female. They like to share shopping experiences with friends hoping that stores would provide social experiences outside home.

The results show that 88.3 percent of the cases correctly classified. Executing leave-one-out cross-validation option, where the discriminant model is re-estimated and found that a hit-ratio of 84.6 percent, giving a robustness of the estimate verifying with each respondent as a hold-out.

Discussions and Conclusions

The results of the study indicate that the supermarket store choice behaviour is affected by monthly household income, age of the consumer, distance travelled to store, family size, gender, occupation, and education. The size of the partial regression coefficients of MHI and DTS imply that young consumers mostly prefer supermarket store formats and willing to travel longer distance to purchase products. The results further reveal that most of the married female retail customers belong to house wife and employment category have preferred supermarket store formats. It is also observed that supermarket format choice behaviour varied among the different educational categories. Graduates and Post graduate consumers have mostly preferred supermarket stores to purchase food and grocery products. The shoppers' psychographic attributes are significant in segmenting food and grocery retail consumers towards supermarket store formats. The emerged five psychographic segments have exhibited different shopping orientations.

The research findings in general reveal that proposed store choice behaviour is tenable in the context of Indian food & grocery retailing that has received scant attention within the academic literature. It has contributed to the retail marketing literature by being the distinctive one providing empirical considerations when using shopper's ever changing demographics and psychographic variables towards supermarket store choice decisions. Given the absence of published academic literature relating to store format choice behaviour in grocery retailing, this study may serve as a departure point for future studies in this area of concern. The findings from Chi-square, multiple regression and univariate analysis of variance that shoppers' attributes are the significant predictors of supermarket store choice behaviour. It can be inferred that it is also possible to affect the orientations of the shoppers by offering modern formats. The findings also established an association between the behaviour and attitude of the shoppers. The five psychographic segments significantly differed in terms of values, lifestyles and shopping orientations. These findings would enable retailers to develop an effective marketing strategy to optimise the use of marketing and promotional resources in meeting the needs of discerning target customers. With the heightened level of competition in today's food and grocery retailing market, an increasing number of stores are currently facing difficulties in operating profitability. This study enables marketers to adjust market communications and repositioning themselves to retain the existing and attracting potential customers. It is suggested that retailers may take note of developed food and grocery retail segments while formulating retail format strategies.

Research limitations and directions for further research

The present research is a starting point for a new direction in studying the effect of shopper attributes on store choice behaviour in an unexplored food and grocery retailing in India. It has encountered a few limitations to be addressed by future study. Firstly, study is limited to supermarket store formats in food and grocery retailing in twin cities of Hyderabad & Secunderabad only. The results may not be generalised to other store formats in the same sector. This limitation offers an opportunity for further research in two directions: one is format-

specific research in other store formats like convenience store, discount stores, hypermarkets etc. The second one is comprehensive study for determining store format choice behaviour in food and grocery retailing taking all food and grocery retail store formats as dependent variables. 2). the study is limited to shopper attributes like demographics and psychographics only. Moreover, Lifestyles and LOV items are based on international studies. Hence, they might not be reflective of Indian psychographic dimensions. This creates a need and opportunity for development of India -specific AIO inventory. 3). it is observed that without inclusion of store format attributes, situational factors and information sources, predicting store format choice behaviour in retailing is not comprehensive. Hence, it may serve as direction for further research in this aspect. 4). longitudinal research is appropriate rather cross sectional for unequivocal understanding of the consumer behaviour for wider generalisation of research findings in food and grocery retailing. 5). More importantly, increased sample size and multi-city sampling can be considered for future research for better generalisations of the findings. Lastly, the present study can be replicated in other retail sectors including consumer durables, luxury goods and apparel and fashionable.

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Appendix -1

Table 7: List of values (LOV) factor analysis

Factor label	Statements	Factor Loadings	Cronbach 'α'	Variance explained
Joy seeker	Excitement	0.705	0.721	24.3 %
	Fun & enjoyment	0.648		
Internally focused	Self- respect	0.696	0.718	22.6 %
	Self- fulfilment	0.653		
Dependent on others	Sense of belonging	0.714	0.703	21.4%
	Warm relationships with others	0.689		
	Security	0.638		
	Accomplishment	0.523		

a. Extraction Method: Principle Components Analysis, Rotation Method: Varimax with Kaiser Normalisation, variance explained 68.3 %, p=0.001

Appendix -2

Table 8: Life style factor analysis

Life style variables	Factor label & Statements	Factor Loadings	Cronbach 'α'	Variance explained
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Activities	<u>Entertainment Oriented</u>			
	Go to movies	0.749	0.741	21.8 %
	Reading books	0.715		
	Listening to music	0.523		
	<u>Community Oriented</u>			
	I am involved in social organisation	0.738	0.725	18.6%
	I am involved in community projects	0.721		
	<u>Sports Enthusiast</u>			
	I play sports a lot	0.705	0.717	16.3 %
	I exercise regularly to stay fit	0.685		
	Attend a sporting event	0.635		
	<u>Business Oriented</u>			
	I am involved in a business organization	0.725	0.708	15.8 %
Travel for business reasons	0.658			
Attend a charitable event	0.634			
Interests	<u>Innovative interests</u>			
	I like doing things that are new and different	0.714	0.754	25.7 %
	I like to use new and different things in my life time	0.698		
	I like the challenge of doing something that I have never done before	0.658		
	<u>Leadership interests</u>			
	I like to lead others	0.574	0.705	22.4 %
	I like being in charge of a group	0.709		
	I usually organise people to get things done	0.692		
	<u>Socio-cultural</u>			
	Visit or entertain friend or family regularly	0.662	0.727	17.7 %
	I entertain at home	0.681		
	Give or attend a dinner party	0.649		
	Attend a concert or play	0.610		
Opinions	<u>Family related</u>		0.718	27.6 %
	If it is good enough for my wife, it is good enough for me also	0.763		
	My family is the single most important thing to me	0.662		
	I always take opinion of my family before taking purchase decision	0.650	0.714	24.2 %
	<u>Autonomous related</u>			
	I am more independent than most people	0.635		
	I have more ability than the most people	0.635	0.685	21.8 %
	I think I have more self-confidence than the most people	0.654		
	I feel confident in my ability to shop	0.621		
	<u>Intellectual related</u>			
	I have the ability to choose the right products	0.771	0.685	21.8 %
	What you think of your self is reflected by what you buy	0.720		
	I consider myself an intellectual	0.685		
	0.649			

a.Extraction Method: Principle Components Analysis, Rotation Method: Varimax with Kaiser Normalisation, $p=0.001$

Appendix-3

Table 9. *Shopping motives factor analysis*

Factor label	Statements	Factor Loadings	Cronbach 'α'	Variance explained
Variety Seeking	I do shopping to keep up with trends	0.824	0.751	18.5 %
	I do shopping to see what new products are available	0.782		
	I like to have a lot of variety in my life	0.771		
	I like to try new outlets	0.685		
Recreational (Managing stress)	I go shopping to make me feel better	0.756	0.725	16.3 %
	I feel relaxed after shopping	0.710		
	Shopping is fun	0.683		
	I like to have excitement & fun in doing shopping shopping for pass time	0.586		
Brand Conscious	I prefer to buy national brand-name grocery products	0.689	0.716	14.8 %
	A well known brand means good quality	0.634		
	I try to stick to certain brands and stores	0.610		
Time Conscious	Shopping the stores wastes my time	0.712	0.685	12.5 %
	I would like to finish shopping as soon as possible	0.705		
	I shop where it saves my time	0.692		
	I usually buy from the nearest store	0.690		
	I never seem to have enough time to do things I want to do	0.578		
Local Shopper	I owe it to my community to shop at local stores	0.726	0.731	9.7 %
	Local stores offer me good products at low price	0.696		
	Local store provide better service	0.678		
	Local store take more interest in you	0.651		
Price Conscious	The price of product is good indicator of its quality	0.764	0.784	6.4 %
	higher the price of product, higher is the quality	0.752		
	Lowest price offers attracts me	0.743		
	I buy as much as possible at discount prices	0.715		
	I usually watch the advertisements for sales promotions	0.683		
Information Seeking	I often go shopping to get ideas though no intention of buying	0.693	0.686	5.8 %
	I generally seek help while shopping	0.632		
	I would discuss with others before deciding on the purchase	0.586		
	Check with other shoppers at the store about a new product	0.543		
Experience Seeking	I like to share my shopping experiences with my friends	0.654	0.635	4.1 %
	Shopping would provide me social experiences outside home	0.598		
	I like to go shopping with friends/family	0.531		

a. *Extraction Method: Principle Components Analysis, Rotation Method: Varimax with Kaiser Normalisation, total variance explained 88.1%, p=0.001*