Effect of Situational Factors on Store Format Choice Behaviour in Food and Grocery Retailing in India - Multiple Discriminant Analysis

Cherukuri JAYASANKARAPRASAD

Abstract

A shopping situation is a particular act of buying behaviour occurring at a specific point in space and time. The purpose of this paper is to examine the impact of situational factors such as task definition, perceived risk, physical surroundings, social surroundings and temporal aspects on retail format choice decisions relating to kirana stores, convenience stores supermarkets and hypermarkets in the fast growing food and grocery retailing in India. The study is purely based on primary data collected from 1040 retail customers through mall intercept method using structured and non-disguised questionnaire from sixty different food and grocery stores from twin cities of Secunderabad and Hyderabad in Andhra Pradesh in India. The multiple discriminant analysis reveals that physical surroundings (ambience, store design and visual merchandising), task definition (regular purchase, purchase in large quantities and getting ideas/knowing new products), perceived risk (time, financial, and physical), temporal aspects (time spent and convenient timing hours), and social interactions and experiences have significant affect on supermarket and hypermarket store format choice decisions. Whereas, task definition (regular purchase and urgent purchase), perceived risk (performance, financial, psychological and physical) and convenient timing hours have significant effect on kirana store and convenience store formats. The findings would help the retailers to better understand the effect of situational variables on consumers retail format choice behaviour in food and grocery and, as a consequence, to undertake more effective retail marketing strategies for competitive advantage. Given the absence of published academic literature and empirical findings relating to store format choice behaviour in grocery retailing in India, this study is relevant to retail marketers in terms of format development and reorientation of marketing strategies.

Keywords: *Consumer Behaviour, Task Definition, Perceived Risk; Physical Surroundings; Temporal Aspects; Social Surroundings; Grocery Retailing; India*

Cherukuri Jayasankaraprasad *is an assistant professor of department of Business Management at Krishna University, Machilipatnam, India.*
jayasankaraprasad@gmail.com

Introduction

Food and Grocery retail is by far the most promising area for the corporate majors to get into organised retail businesses. The Food and grocery is also the second-largest segment of the retail trade constitutes 53 percent of total private consumption expenditure (USD 154 billion) and 60 percent of total retail sales (India Retail Report, 2009). Most of the food and grocery products reach the consumers through traditional markets which are unorganized (Bajaj et al., 2005). Along with the rapid growth, retailing scenario has also been characterised by increasing competition and the emergence of 'Western' format typologies such as convenience stores, discount stores, super markets, specialty stores and hyper markets (Prasad and Aryasri, 2009). In addition to the high growth rate in the organized retail in the recent times, the store format choice becomes an area of concern for a retailer as well as consumer. In fact, both retailers and shoppers are currently in an evaluation phase with no clear verdict as to what may drive the choice of store formats and patronage in the longer term.

Most of the previous retail research studies have focused on store image and importance of store attributes in understanding the concept of store choice and patronage behaviour (Woodside and Trappey, 1992; Medina and Ward, 1999; Outi, 2001; Sinha and Banerjee, 2004, Sinha and Uniyal, 2005; Carpenter and Moore, 2006) but few on the impact of situational factors (Mitchell, 1998; Mitchell and Harris, 2005; Zhuang et al., 2006). It has also been recognized that grocery shopping behaviour is different from mall shopping behaviour and thus food retailers should consider situational factors differently from retailers of other products (Zhuang et al., 2006). Past research suggests that situational factors such as perceived risk (Mitchell and Harris, 2005), task definition (Kenhove, 1999), physical surroundings (Baker et al., 2002; Hyllegard et al., 2006), temporal aspects (Nicholls et al., 1997) and social surroundings (Beardon et al., 1989) have a demonstrable and systematic effect on consumer store format choice behaviour, and can change consumer decisions once they are inside the store (Roslow et al., 2000). Studies on shopper behaviour in India have largely been limited to their time and money spending pattern, demographic profile, and preferences for a particular format (Sinha, 2003). Few empirical studies have been conducted to understand the store format

choice behaviour in the context of fast growing Indian retailing in general and food and grocery retailing in particular. Moreover, earlier studies suggested that Indian retail consumers have cross shopping behaviour in nature for various reasons (Sinha and Banerjee, 2004).

It is also observed that grocery retail consumers have adopted various task definition and risk reduction strategies in evaluating the choice of store format. Hence, the present study assumed significance and felt a need to examine that how far these situational factors like task definition, perceived risk, physical surroundings, temporal aspects and social surroundings affecting retail format choice behaviour in relation to neighbourhood kirana stores, convenience stores, supermarkets and hypermarkets in Indian food and grocery retailing. The multiple discriminant analysis statistical technique is used to find the significant predictors and their discriminating effect on retail format choice behaviour.

Literature Review

Store choice behaviour has been widely studied across the world (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, store image and situational factors that impact store choice behaviour. During the last few decades, there has been a significant increase in one-stop shopping strategies, due to an increase in assortment at supermarkets (Messinger and Narasimhan,1997). One reason for this change in consumer grocery shopping behaviour is the increased need for shoppers to optimise their time spent for shopping, since demands of every day professional and personal life have increased for most shoppers. Shoppers economise on the amount of time spent shopping, by making multipurpose trips, combining purchases for different product categories and reducing the number of trips at a particular time period, or by purchasing a large amount of goods, for example, groceries, while making a single-purpose shopping trip, reducing travel costs by combining trip over time (Peter et al., 2004). Hence, grocery retailers are very interested in how

shoppers make their purchase decisions, as well as when, why and what motivate shoppers' buying decisions. This study has considered a few situational factors that have far reaching implications on store format choice behavior.

Situational variables

The situational effects are widely recognised to understand and predict the consumer behaviour in retailing (Foxall, 1999). A shopping situation is a particular act of buying behaviour occurring at a specific point in space and time. A situation serves as an interface between the person and the stimulus - object and all those factors defining that interface constituting situational variables (Bajaj et al., 2005, p.239). Situational variables refer to all those factors particular a time and place of observation which do not follow from knowledge of personal (intra-individual) and stimulus (choice alternative) attributes (Belk, 1975). Situational variables include task definition, perceived risk, physical surroundings, temporal aspects, and social surroundings.

Task Definition

Task definition is more individual-specific and encompasses cognitive and motivational indications of the shopping situation, effectively capturing situational influences on the task definition, information search, and valuation stages depicted traditional consumer decision making models (Bajaj et al., 2005, p.241). Every shopping occasion will have tasks associated with it. For a family the situation becomes much more complex as they might approach the same store with a variety of tasks, while the shopping might be a chore for the mother it might be a means of enjoyment for the child. Some task definitions like purely utilitarian purpose and others for hedonic reasons changes store choice behaviour (Arnold and Reynolds, 2003). The task definition comprises the set of goals a consumer forms to resolve needs deriving from a specific situation (Marshall, 1993). It has also been defined as 'the reasons that occasion the need for consumers to buy or consume a product or service' (Belk, 1975, P.157). Task definitions is applicable to both purchase as well as usage situations, while the purchase situation refers to the circumstances of the purchase a usage situation refers to the circumstances of the usage of the product or service (Kenhove et al., 1999).

Perceived Risk

In the process of evaluating which stores to patronise, consumers consider a variety of perceived risk factors, often referred to in the retailing literature as store choice evaluative criteria (Rosenbloom, 1983; Mitchell, 1998; Mitchell and Harris, 2005; Sridhar, 2007). The perceived risk has been conceptualised as a multi-dimensional phenomenon being subdivided into various risks or losses, e.g. physical, financial, psychological, social, convenience and time losses (Mitchell and Harris, 2005, p.823). If the consumer perceives a probability of a mismatch between his/her expectations and the incentives offered by the situation, then he/she perceives a risk of not fulfilling his/her motives at that time (Hawes and Lumpkin, 1986). Performance risk can be treated that the product or store chosen might not perform as desired and thus not deliver the benefits promised (Mitchell, 1998, p173). Performance risk can also be seen as a surrogate for overall risk which results in a combination of other losses. Physical risk refers to the health or appearance of the consumer and to the physical and mental energy expended on shopping and effort saving personality of the products purchased. Dowling and Staelin (1994) refer to this partitioning as "product-category risk" which reflects the person's perception of the risk inherent in purchasing any particular product category and "product specific risk" which is associated with a particular product purchase (Mitchell and Boustani, 1993).

Financial risk refers to the consumer's concerns about how much goods are valued for money as well as concerns about how much money might be wasted or lost if the product does not perform well (Mitchell, 1998, p.174). It also includes any accidental costs accrued from the stopping experience, e.g. travelling costs, paying more than necessary. Psychological risk results from the social embarrassment and loss of social esteem resulting from friends or family comparing the store's image with the image they have of you, as well as the internal psychological disappointment at oneself for shopping at a store which is not consistent with one's self-image (Mitchell and Harris, 2005, p.824; Sridhar, 2007). Time and convenience risk refers to the amount of time required to find the store and purchase a product and/or the time which can be needed to rectify a product failure (Sridhar, 2007, p.53; Mitchell and Harris, 2005, p.824). Therefore, perceived risk theory mandates that the retailer who can offer

the lowest- risk products will have a significant competitive advantage.

Physical Surroundings

Physical surroundings refer to geographical and institutional location (Babin and Babin, 2001), decor, sounds, aromas, lighting, weather and visible configurations of merchandise (Bruner, 1990; Lee, 1998) or other material surrounding the stimulus object (Zhuang, 2006, p.19). The assortment of merchandise (Stassen et al., 1999), a neat and spacious store atmospherics of a shopping environment (Baker et al., 2002; Hyllegard et al., 2006) have been found to play a significant role in store choice behaviour (Bone and Ellen, 1999). The shopping experience, as created by the store environment, has been found to play an important role in building store patronage (Sinha and Banerjee, 2004, p.485). In addition, store environment and atmosphere appear to be influential in consumers' format choice decisions (Baker et al., 1994; Donovan et al., 1994). The role of ambience in store format choice has also been found significant (Sinha et al., 2005; Carpenter and Moore, 2006, p.437).

Social Surroundings

Social Surroundings describes the presence or absence of others, together with social roles, role attributes, and opportunities for interactions (Bajaj, 2005, p.240; Zhuang et al., 2006, p.19). Social surroundings also includes the presence of people in the interaction between consumer and stimulus, has been conceptualised to include factors such as crowds, who the consumer is shopping with, and the actions of sales people (Nicholls et al., 1994). It is also found that shoppers prefer store formats which create social experience outside their home (Beardon et al., 1989).

Temporal Aspects

Temporal perspective is a dimension of situations that may be specified in units ranging from time of the day to season of year. Consumers' who face shortage of time may reduce both planned and unplanned purchases, and frequent customers who are more familiar with a store's layout, make fewer unplanned purchases (Park et al., 1989). Temporal aspects include that how much time consumer spending for shopping grocery products in a particular store. Time of day and constraints

upon time available for shopping are the variables that have obvious effects on buyer behaviour.

Research Questions

Keeping the research motivation in consideration, the following research questions have been identified.

1. Do shopping trip pattern and shopping volume have any association with store format choice decisions?

2. Are the situational factors able to predict store format choice decisions?

Research Methodology

The present study is descriptive in nature (cross-sectional design). The population frame (75 million) would be the retail customers of food and grocery in the state of Andhra Pradesh in India. The sampling frame for the present research would be comprised of adult retail customers of food and grocery store formats in the twin cities of Hyderabad and Secunderabad (5.6 million population). Considering the complexity of the survey, time and funding budget, a mall intercept survey method was finally adopted (Dabholkar et al., 1996; Sinha and Banerjee, 2004) for the purpose of data collection from 1040 respondents. The data was collected at sixty different food and grocery retail stores covering 15 neighbourhood kirana stores, 10 convenience stores (such as Spencers' Daily, KBs Fair price, True Mart, Spinach, In & Out, DHL service point, Subhiksha, Fresh @ and 24/7), 25 supermarkets (such as Foodworld, Food Bazaar, Reliance Fresh, Fresh @, Subhiksha, Spencer, More, Usha and Vijetha) and 10 hypermarkets (Big Bazaar, Hypercity, Magna, Vijetha Hyper, and Choupal Sagar) by administering a structured non-disguised questionnaire with the list of questions in a prearranged order.

Survey Instrument & Measurement of Key Variables

The self-administered questionnaire was developed using scales from previous studies. The questionnaire used dichotomous, multiple choice and five-point Likert scale type statements. The questionnaire was divided into two parts: part-A and part-B. The part-A consists of eight questions connected to respondent's socio-economic and demographic characteristics. The responses were measured using nominal and interval

scales. The second part-B consists of eleven questions relating to food and grocery shopping behaviour and situational factors.

All the measurement items were adapted from the existing scales to measure the constructs proposed in the model. Meanwhile, some items were created based on the literature related to situational factors in food and grocery retailing. Five-point scales were employed because previous research has suggested that a five-point scale is readily comprehensible to respondents and enable them to express their views. The six questions relating to store choice and purchase behaviour were adopted from Yavas (2003), Sinha and Banerjee (2004) and Carpenter and Moore (2006).

Dependent variable (criterion): Choice of Retail Format is non-metric measured on nominal scale categorising into kirana store, convenience store, supermarket and hypermarket store formats.

Independent Variables (Discriminating): These are used to discriminate or predict the criterion variables. The five questions containing eighteen variables relating to five situational factors adopted and modified from various sources. All variables are metric (continuous) measured on five-point Likert scale.

(1).*Task Definition (TD)*: The following four variables under task definition are adopted from Kenhove, Wule, and Waterschoot (1999):

TD1- I need something urgent to purchase,

TD2- This is a routine job for me (Regular purchase),

TD3- I am about to Purchase products in large quantities, and

TD4- I want to get new ideas or know new products in the market.

(2). *Perceived Risk (PR)*: The following five variables under perceived risk adopted from Atkinson (1964), Bettman (1973), Dowling and Staelin (1994):

PR1- I perceive financial risk when I have to pay more than necessary,

PR2- I perceive psychological risk when chosen store provides unpleasant shopping experience and low social status,

PR3- I perceive performance risk when chosen store not delivered

the expected benefits,

PR4- I perceive physical risk when chosen store delivers unsafe products and unsafe shopping experience, and

PR5- I perceive time and convenience risk when it takes more time to find and purchase a product

(3). *Physical Surroundings (PS)*: The four variables under physical surrounding adopted from Sinha and Banerjee (2004), Sinha et al. (2005), Hyllegard et al. (2006).

PS1- Ambience/atmospherics of the store format influences format choice decisions,

PS2- Convenient store location influences format choice decisions,

PS3- Store design& Layout of the store influences format choice decisions, and

PS4- Visual merchandising of the store is influences format choice decisions.

(4).*Temporal Aspects (TA)*: The three variables under temporal aspects adopted from Belk (1975), Nicholls et al. (1997) are:

TA1- Time spent in store for shopping food and grocery products,

TA2- Convenient opening hour's influences store format choice decisions, and

TA3- Shopping frequency/pattern influences store format choice decisions.

(5). *Social Surroundings (SS)*: The two variables under social surrounding adopted from Belk (1975) and Zhuang et al. (2006) are:

SS1- It provides opportunity for interaction with friends and sales personnel, and

SS2- It provides social experiences outside home.

Validity and Reliability

The questionnaire used in the present study has been adapted and modified from the previous published research work. All these measures were pre-tested over two stages with samples of academicians and retail

store managers. Four academicians checked the scale indicators for face validity and content validity. Interviews with fifteen retail store managers engaged in food and grocery retail store operations gave useful insights to revise the questionnaire. The internal consistency of the instrument was tested through reliability analysis using Cronbach's Alpha. Reliability estimates for the construct variables are: store choice behaviour (0.759), task definition (0.825), perceived risk (0.768), physical surroundings (0.714), social surroundings (0.728), and temporal aspects (0.723) revealing a high degree of reliability. All reliability results are well-exceeded 0.70 lower limit of the acceptability (Hair et al., 1998). The discriminant validity was examined using 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.

Methods of Analysis

For investigating research question 1, Chi-square was applied to assess the association between (1a) shopping trip pattern and store format choice (1b) basket size and store format choice decisions.

For investigating research question 2, Multiple Discriminant Analysis (MDA) was used to classify the dependent variable (store format choice) among four categories. The MDA model shall find out (a) the percentage of food and grocery retail customers that it is able to classify correctly, (b) statistical significance of the discriminant function, (c) which of the independent variables (i.e. situational) are relatively better in discriminating among choice of store formats (kirana, convenience, supermarket, hypermarket) and finally (d) how to classify a new grocery retail customer into one of those four groups. Hence, the application of MDA is vindicated for the present study to predict or discriminate the criterion variable under the assumption of multiple linear regressions, linear relationships, and homoscedastic relationships. The Wilks' lambda is used to test whether or not the discriminant model is significant as a whole. If the model is significant, the F test is used to test whether or not the individual variables (predictors) means differ from the group mean function. Eigen values are used to explain the variance caused by each discriminant function. The discriminant formula is applied to classify the

group category. The Unstandardised discriminant coefficients are used to predict the discriminant score.

Data Analysis

A total 1500 retail customers were surveyed taking twenty five samples from each store format of randomly selected 60 retail stores. 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.

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 (85.0 percent) were married and remaining 15.0 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 remaining 22.6 percent 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 majority of the respondents (53.8 percent) had owned two wheeler vehicles and 18.7 percent had owned four wheeler vehicles. The majority of the respondents (72.0 percent) had used their own vehicle (two wheeler/four wheeler) for shopping food and grocery products. The results of respondent's demographic, socio-economic and geographic variables were summarised in Table 1.

Table 1. Respondents' demographic, socio-economic and geographic profile

Variable	Description	Frequency	Percent	Mean	S.D
Gender	Male	450	43.3	-	-
	Female	590	56.7		
Age	20-30 years	338	32.5		
	30-40	424	40.8	32	8.56
	40-50	223	21.4		
	50 & above	55	5.3		
Marital Status	Married	884	85.0	-	-
	Un-married	156	15.0		

continue of Table 1:

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 15000-20000	367	35.2	Rs 18000	Rs 4350
	Rs 20000-25000	294	28.3		
	Rs 25000 & above	242	23.3		
Family size	1-3	264	25.4		
	3-5	402	38.6	5.2	0.752
	5 & more	373	36.0		
Distance Travelled to Store	1-2 Km	323	31.1		
	2-3 Km	334	32.1	2.8	0.864
	3-4 Km	236	22.7		
	4-5 Km	95	9.1		
	>5 Km	52	5.0		
Mode of Transport Used	Two wheeler	560	53.8	-	-
	Four wheeler	195	18.7		
	Public/Private transport	115	11.2		
	None	170	16.3		

Source: Primary data

Respondents shopping behaviour

Most of the respondents (61.53 percent) revealed that they had always shopped food and grocery products from various retail formats for their household consumption. 26.93 percent revealed that they had frequently shopped and the rest of 11.54 percent occasionally shopped food and grocery products from different retail formats. The findings implied that respondents have preferred retail stores for shopping food and grocery products. The respondents shopping behaviour for food and grocery products were presented in the Table 2.

Table 2. Respondents shopping behaviour

Shopping behaviour	Frequency	Percent	Cumulative percent
Always	640	61.53	61.53
Frequently	280	26.93	88.46
Occasionally	120	11.54	100.00
Total	1040	100.00	--

Source: Primary data

Respondents Store format Choice Behaviour

Majority of the respondents (more than 75 percent) exhibited cross-shopping behaviour in nature for purchase of food and grocery products at different retail formats for various reasons. When respondents are forced to choose their prime retail store format, the 31.25 percent of respondents has preferred supermarket type store formats for purchase of food and grocery products. Some 26.92 percent respondents have preferred kirana store formats followed by hypermarkets (21.16 percent) and convenience store formats (20.67). The results of store choice behaviour at different food & grocery retail formats were presented in Table 3.

Table 3. Respondents Store Format Choice Behaviour

Choice of Retail Format	Frequency	Percent	Cumulative Percent
Kirana store	280	26.92	26.92
Convenience store	215	20.67	47.59
Supermarket	325	31.25	78.84
Hypermarket	220	21.16	100.0
Total	1040	100.0	-

Source: Primary Data

Research question 1a: Assessing influence of Purchase pattern on store format choice

About 75 percent of the respondents visited different retail store formats more than once a month for purchasing food and grocery products, out of which about 32.5 percent each for fortnightly and once in week. Some 25 percent respondent's purchased once in month. 35.4 percent of the respondents likely to purchase once in a week from kirana store followed by 27.2 percent from supermarkets. 33.68 percent of respondents are likely to purchase once in fortnight from supermarket followed by 27.5 percent from hypermarket. The chi-square statistic results (x^2 =73.462, df 9, p<0.000) also revealed that there was a significant association between purchase pattern and choice of retail format. It was implicit from the findings shown in Table 4 that store format choice decisions were dependent on purchase pattern.

Table 4. Respondents' Purchase pattern at different food & grocery store formats

Purchase Pattern	Super-market	Kirana store	Hyper-market	Convenience store	Total
Twice in week	48	30	20	20	118
once in week	104	134	48	94	380
once in fort night	130	64	104	75	373
once in month	43	52	48	26	169
Total	325	280	220	215	1040

Source: Primary Data

Research question 1b: Assessing influence of Purchase volume on store format choice

With an average spending of Rs 4,360 per month on food and grocery products, majority (30.57 percent) of the shoppers were in the category of Rs 4,000-5,000 followed by 26.63 percent in the category of Rs.3, 000-4,000 and 25 percent in the category of less than Rs. 3,000. Some 62.26 percent respondents preferred modern retail formats like supermarkets and hypermarkets for shopping grocery products in the category of Rs. 4,000-5,000. Majority of the respondents (65.0 percent) preferred to buy grocery products from organised retail formats like supermarkets and hypermarkets in the category of more than Rs.5, 000. Some 64.13 percent of respondents preferred kirana and convenience store formats for purchase of grocery products in the category of less than Rs.3, 000. The chi-square statistic results (x^2 =95.457, df 9, p<0.000) also revealed that there is a significant association between purchase volume and choice of retail format. It was implicit from the findings that store format choice decisions were dependent on purchase volume i.e. amount of money spent for shopping food and grocery products. The results of purchase volume of food and grocery products per month are presented in Table 5.

Table 5. Respondents' Purchase volume at different food & grocery store formats

Purchase volume	Kirana Store	Convenience store	Super-market	Hyper-market	Total
< Rs 3,000	64	102	58	35	259
Rs 3,000- 4,000	92	53	80	52	277
Rs 4,000-5000	84	35	121	78	318
Rs 5,000 & More	40	25	66	55	186
Total	280	215	325	220	1040

Source: Primary Data

Research question 2: Are the situational factors able to predict store format choice decisions?

The following subsections will analyse and discuss the outcome of the multiple discriminant analysis for investigating the research question.

Tests of Equality of Group Means

The findings from the Table 6 revealed that the group differences are significant. The Wilks' lambda value for all variables is less than one (Wilks' lambda ranges from 0-1.0). The smaller the Wilks' lambda, the more significant the independent variables to the discriminant function. Smaller values indicate strong group differences. The Wilks' lambda is significant by the F test for all variables. Though all variables are significant yet a few variables such as TD1 (Wilk's Lambda = 0.310, F [3, 1036] =769.251, p=0.000); TD2 (Wilk's Lambda = 0.601, F [3, 1036] =229.561, p=0.000); TD4 (Wilk's Lambda = 0.454, F [3, 1036] =426.022, p=0.000); PS1(Wilk's Lambda = 0.490, F [3, 1036] =359.857, p=0.000); PS3(Wilk's Lambda = 0.434, F [3, 1036] =450.363, p=0.000); TA2 (Wilk's Lambda = 0.856, F [3, 1036] =58.115, p=0.000); SS1 (Wilk's Lambda = 0.778, F [3, 1036] =98.443, p=0.000) are highly significant to the discriminant function.

Table 6. Tests of Equality of Group Means

Predictor Variables	Wilks' Lambda	F	df1	df2	Sig.
TD1	0.310	769.251	3	1036	0.000
TD2	0.601	229.561	3	1036	0.000
TD3	0.782	96.228	3	1036	0.000
TD4	0.454	416.022	3	1036	0.000
PR1	0.734	125.347	3	1036	0.000
PR2	0.681	161.700	3	1036	0.000
PR3	0.819	76.350	3	1036	0.000
PR4	0.971	10.240	3	1036	0.000
PR5	0.984	5.720	3	1036	0.001
PS1	0.490	359.857	3	1036	0.000
PS2	0.624	208.330	3	1036	0.000
PS3	0.434	450.363	3	1036	0.000
PS4	0.897	39.465	3	1036	0.000

table 6 continues on next page

continue of Table 6:

TA1	0.924	28.573	3	1036	0.000
TA2	0.856	58.115	3	1036	0.000
TA3	0.935	23.895	3	1036	0.000
SS1	0.778	98.443	3	1036	0.000
SS2	0.824	82.554	3	1036	0.000

Source: Primary data.

How good is the model?

The findings from the classification matrix in Table 7 reveal that the discriminant function, obtained, is able to classify 83.6 percent of the 1040 retail customers correctly. Specifically it says that out of 259 cases predicted to be in kirana store group, 236 were observed to be in the same kirana group, 21 in the convenience group and 2 in the supermarket group. Likewise, out of 205 cases predicted to be in convenience group, 184 were found to be in the same group, 16 in kirana store, 4 in supermarket, 1 in hypermarket. Similarly out of 292 cases predicted to be in supermarket group, only 220 were observed to be in supermarket group, 55 in hypermarket, 13 in kirana and 4 in convenience store group. Similarly out of 284 cases predicted to be in that group, only 229 were observed to be in that group, 44 in supermarket, and 11 in convenience store group. Thus, on the whole, only 170 cases out of 1040 were misclassified in the discriminant model, giving the classification (prediction) accuracy level of (1040-170)/1040 or 83.6 percent. The obtained level of accuracy may not hold good for all future classifications of new food and grocery retail customers. But it is still a pointer towards the model being a good one, presuming the input data was relevant and scientifically collected.

Table7. Classification Matrix

Observed Classifications (Choice of retail format)		Predicted Classifications				Total
		Kirana store	Convenience store	Super-market	Hyper-market	
Original	Kirana store	236	21	2	0	259
	Convenience	16	184	4	1	205
	Supermarket	13	4	220	55	292
	Hypermarket	0	11	44	229	284
Count (%)	Kirana store	91.1	8.1	0.8	0.0	100.0
	Convenience	7.8	89.8	2.0	0.5	100.0
	Supermarket	4.5	1.4	75.3	18.8	100.0
	Hypermarket	0.0	3.9	15.5	80.6	100.0

a 83.6% of original grouped cases correctly classified.

Statistical Significance of Discriminant Model

The findings from the Table 8 of 'Chi-square Tests with Successive Roots Removed' revealed that the three emerged discriminant functions were statistically significant. The first Wilks Lambda (1 through 3) testing the null hypothesis that in the population the groups do not differ from one another on mean D for any of the discriminant functions. The Wilks' lambda for the first function was found to be 0.072 with 2=2700.467, df 54, p=0.000. Since this value id closer to '0' it indicates better discriminating power of the model. The probability value for the Chi-square test indicates that the discriminating power between two groups is highly significant as its P-value is 0.000. Similarly the Wilks' lambda for the second function (2 through 3) was also found to be 0.434 with 2=857.907, df 34, p=0.000. and the third function (3) was found to be 0.872 with 2= 140.585, df 16, p=0.000. Both these functions were also highly significant as their p-values are 0.000.

Table 8. Chi-square Tests with Successive Roots Removed

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.072	2700.467	54	.000
2 through 3	.434	857.907	34	.000
3	.872	140.585	16	.000

Source: Primary Data

The Eigenvalue for the first model was found to be 5.004 with 81.2 percent variance explained followed by 16.4 percent variance explained in second model and 2.4 percent variance explained in third model. The eigenvalues show how much of the variance in the dependent, choice of retail format, is accounted for by each of the functions. This shows that first two models are highly significant as their eigenvalue greater than 1 as shown in Table 9.

Table 9. Eigenvalue for Statistical Significance

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	5.004(a)	81.2	81.2	.913
2	1.009(a)	16.4	97.6	.709
3	.147(a)	2.4	100.0	.358

a First 3 canonical discriminant functions were used in the analysis

Significant Predictors

The findings from Table 10 for standardised canonical discriminant function coefficients revealed that the independent variables have unique contribution to the discriminant functions. The absolute value of the standardised coefficient of each independent variable indicates its relative importance. It is observed for the model-1 that the TD4 is the significant predictor with a coefficient of 0.365, followed by PS4 (0.320), PS2 (0.273), PS1 (0.208), PS3 (0.172), SS1 (0.148), SS2 (0.128), TD3 (0.115), TD1 (-0.587), PR2 (-0.150), and TD2 (-0.112).

For model-2, TD1 is the significant predictor with a coefficient of 0.757, followed by TD4 (0.373), TD3 (0.347), TD1 (0.242), TA2 (0.115), and PS4 (0.100). For model-3, PR1 is the significant predictor with a coefficient of 0.417, followed by TD2 (0.391), PS1 (0.350), SS1 (0.262), PR2 (0.257), TA1 (0.249), PR4 (0.137) and TD4 (-0.551). The coefficients of these canonical variables are used to compute a canonical variable score for each case.

Table 10. Standardized Canonical Discriminant Function Coefficients

Predictor Variables	Function		
	1	2	3
TD1	-.587	.242	-.068
TD2	-.112	.757	.391
TD3	.115	.347	-.551
TD4	.365	.373	-.059
PR1	-.100	-.088	.417
PR2	-.150	-.016	.257
PR3	-.014	-.029	.080
PR4	.039	-.031	.137
PR5	-.016	.093	-.033

table 10 continues on next page

continue of Table 10

PS1	.208	-.107	.350
PS2	.273	-.036	.078
PS3	.172	-.032	.094
PS4	.320	.100	.019
TA1	.034	.008	.249
TA2	.013	.115	.128
TA3	-.008	-.039	.114
SS1	.148	.033	.262
SS2	.128	.002	.089

Source: Primary Data

Structure Matrix

The structure matrix shown in Table 11 contains within-group correlations of each predictor variable with the canonical function. The correlations serve like factor loadings in factor analysis and enable to assign meaningful labels to the discriminant functions. The strongest correlations for TD1 (-0.662), PS4 (0.508), PS2 (0.456), TD4 (454) PR2 (-0.302) SS1 (0.234), PR3 (0.208), and PS3 (0.151) occur with function 1. The variables TD2 (0.782), TA2 (0.169), PR4 (0.121) and PR5 (0.072) have strongest correlation with group-2. Similarly, the variables TD3 (-0.512), PR1 (0.436), PS1 (0.369), TA1 (0.277), TA3 (0.093) and SS2 (0.069) have strongest correlation with group-3.

Table 11. Structure Matrix of Discriminant Function

Predictor Variables	Function		
	1	2	3
TD1	-.662(*)	.181	-.032
PS4	.508(*)	.105	.108
PS2	.456(*)	-.039	.086
TD4	.454(*)	.415	-.098
PR2	-.302(*)	-.022	.270
SS1	.234(*)	.069	.221
PR3	.208(*)	-.059	-.025
PS3	.151(*)	-.010	.043
TD2	-.075	.782(*)	.365
TA2	-.165	.169(*)	.149

table 11 continues on next page

continue of Table 11:

PR4	-.052	.121(*)	.105
PR5	.047	.072(*)	.009
TD3	.109	.423	-.512(*)
PR1	-.256	-.079	.436(*)
PS1	.335	-.148	.369(*)
TA1	.118	.039	.277(*)
TA3	.026	-.028	.093(*)
SS2	-.013	.008	.069(*)

Note: Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
 Variables ordered by absolute size of correlation within function.
* Largest absolute correlation between each variable and any discriminant function

Classification of New Food and Grocery Retail Customer

The findings from Table 12 of functions at group centroids used to establish the cutting points for classifying cases. The cutting points set ranges of the discriminant score to classify cases as kirana store, convenience store, supermarket and hypermarket store formats. For the first canonical variable, the average discriminant or canonical variable score for kirana store is -2.721, convenience is -2.059, supermarket is 1.386 and hypermarket is 2.542. Similarly, for the second canonical variable, the average discriminant variable score for kirana is 0.960, convenience is -1.665, supermarket is 0.775 and hypermarket is -0.471. And for the third canonical variable, the average discriminant or canonical variable score for kirana store is -0.299, convenience is 0.260, supermarket is 0.480 and hypermarket is -0.409. This average discriminant variable score gives us decision rule for any new customer case in which the grocery customer is belonged.

Table 12. Functions at Group Centroids

Choice of Retail Format	Function		
	1	2	3
Kirana store	-2.721	0.960	-0.299
Convenience	-2.059	-1.665	0.260
Supermarket	1.386	0.775	0.480
Hypermarket	2.542	-0.471	-0.409

(Unstandardised canonical discriminant functions evaluated at group means)

The Unstandardised discriminant function coefficients for three models shown in Table 13 are used to compute the discriminant score of any food and grocery retail customer. Therefore, the discriminant score of new customer (Y) from model-1,

Y= -1.351-TD1 (0.722) -TD2 (0.121) + TD3 (0.016) + TD4 (0.421) - PR1 (0.094) -PR2 (0.147) - PR3 (0.012) - PR4 (0.036) - PR5 (0.013) + PS1 (0.110) + PS2 (0.287) + PS3 (0.039) + PS4 (0.382) + TA1 (0.017) +TA2 (0.015) - TA3 (0.008) + SS1 (0.063) + SS2 (0.010)

For model-2, Y= -6.628 + TD1 (0.297) + TD2 (0.817) + TD3 (0.366) + TD4 (0.431) - PR1 (0.083) -PR2 (0.016) - PR3 (0.026) - PR4 (0.029) + PR5 (0.077) - PS1 (0.108) - PS2 (0.038) - PS3 (0.017) + PS4 (0.120) + TA1 (0.004) +TA2 (0.137) - TA3 (0.043) + SS1 (0.014) + SS2 (0.001)

For model-3, Y= - 4.738 - TD1 (0.083) + TD2 (0.421) - TD3 (0.582) - TD4 (0.068) + PR1 (0.393) + PR2 (0.251) + PR3 (0.072) + PR4 (0.125) - PR5 (0.027) + PS1 (0.353) + PS2 (0.081) + PS3 (0.050) + PS4 (0.023) + TA1 (0.122) +TA2 (0.152) + TA3 (0.127) + SS1 (0.111) + SS2 (0.034).

Table 13. Canonical Discriminant Function Coefficients

Predictor Variables	Function		
	1	2	3
TD1	-.722	.297	-.083
TD2	-.121	.817	.421
TD3	.016	.366	-.582
TD4	.421	.431	-.068
PR1	-.094	-.083	.393
PR2	-.147	-.016	.251
PR3	-.012	-.026	.072
PR4	.036	-.029	.125
PR5	-.013	.077	-.027
PS1	.110	-.108	.353
PS2	.287	-.038	.081
PS3	.039	-.017	.050
PS4	.382	.120	.023
TA1	.017	.004	.122
TA2	.015	.137	.152
TA3	-.008	-.043	.127
SS1	.063	.014	.111
SS2	.010	.001	.034
(Constant)	-1.351	-6.628	-4.738

(Unstandardised coefficients)

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

The classification function coefficients shown in Table 14 used to assign or classify cases into groups. Each column contains estimates of the coefficients for a classification function for one group. Thus, for each case of each group, the procedure multiplies each coefficient by the value of the corresponding variable, sums the products, and adds the constant to get a score.

The estimate of the classification function for choice of retail format in kirana store is TD1 (7.812) + TD2 (4.732) + TD3 (3.189) + TD4 (2.784) + PR1 (2.459) + PR2 (4.178) + PR3 (3.585) + PR4 (2.103) + PR5 (2.069) + PS1 (1.385) PS2 (4.340) + PS3 (0.770) + PS4 (2.135) - TA1 (0.070) + TA2 (6.052) + TA3 (3.102) + SS1 (1.215) + SS2 (0.325) - 92.397.

Similarly, the estimate of the classification function for choice of retail format in convenience store is TD1(6.508) + TD2 (2.744) + TD3 (2.914) + TD4 (1.894) + PR1 (2.833) + PR2 (3.264) + PR3 (3.685) + PR4 (2.272) + PR5 (1.844) PS1 (3.939) + PS2 (3.119) + PS3 (0.869) + PS4 (2.085) - TA1 (0.001) + TA2 (5.789) + TA3 (2.956) + SS1 (0.282) + SS2 (0.433) - 77.873.

The estimate of the classification function for choice of retail format in supermarket is TD1(3.727) + TD2 (4.412) + TD3 (4.735) + TD4 (4.379) + PR1 (2.392) + PR2 (2.774) + PR3 (3.595) + PR4 (2.354) + PR5 (1.980) PS1 (4.130) + PS2 (4.033) + PS3 (1.973) + PS4 (3.700) + TA1 (0.092) + TA2 (6.208) + TA3 (2.849) + SS1 (2.557) + SS2 (3.478) - 97.577.

The estimate of the classification function for choice of retail format in hypermarket is TD1(3.597) + TD2 (2.880) + TD3 (4.815) + TD4 (4.389) + PR1 (2.037) + PR2 (2.402) + PR3 (3.550) + PR4 (2.321) + PR5 (1.893) PS1 (4.578) + PS2 (2.784) + PS3 (2.994) + PS4 (3.971) + TA1 (1.102) + TA2 (5.920) + TA3 (2.781) + SS1 (3.513) + SS2 (4.159) - 88.718.

Table 14. Classification of Fisher's linear discriminant functions

Predictors	Choice Retail Format			
	Kirana Store	Convenience Store	Super-market	Hyper-market
TD1	7.812	6.508	3.727	3.597
TD2	4.732	2.744	4.412	2.880
TD3	3.189	2.914	4.735	4.815
TD4	2.784	1.894	4.379	4.389
PR1	2.459	2.833	2.392	2.037
PR2	4.178	3.264	2.774	2.402
PR3	3.585	3.685	3.595	3.550
PR4	2.103	2.272	2.354	2.321
PR5	2.069	1.844	1.980	1.893
PS1	1.385	3.939	4.130	4.578
PS2	4.340	3.119	4.033	2.784
PS3	.770	.869	1.973	2.994
PS4	2.135	2.085	3.700	3.971
TA1	-.070	-.001	.092	1.102
TA2	6.052	5.789	6.208	5.920
TA3	3.102	2.956	2.849	2.781
SS1	1.215	.282	2.557	3.513
SS2	.325	.433	3.478	4.159
(Constant)	-92.397	-77.873	-97.577	-88.718

Discussions and Implications

This study demonstrates that shoppers indicated different store format choice behaviour when reacting to different shopping situations. It is observed from the classification of function coefficients that no store format seems to be prime in the minds of consumers. The discriminant analysis reveals that grocery consumer's store format choice decisions are differed across the chosen formats. Task definitions, perceived risk and social surroundings are proved to be significant for neighbourhood kirana and convenience store formats. The findings are concurred with earlier studies by Kenhove, Wule, and Waterschoot (1999) and Dowling and Staelin (1994). The results imply that format choice decisions are altered when consumers need something urgent to purchase and when they are not willing to face time and convenience risk for purchase of products.

Neighbourhood kirana stores and convenience stores also provide consumers an opportunity to interact with friends and neighbours residing in their residential area. Task definition (purchasing products in bulk and knowing ideas and new products in market), physical surroundings (ambience and store design), temporal aspects (time spent and convenient opening hours) and social experiences, and perceived risk factors (financial, psychological, and physical) are highly significant toward supermarket and hypermarket format choice decisions. These findings are also conformed to earlier studies of Wule, and Waterschoot (1999); Dowling and Staelin (1994); Sinha et al. (2005); Hyllegard et al., (2006); Nicholls et al., (1997) and Zhuang et al., (2006).

The research findings in general reveal that impact of situational factors on retail format choice behaviour is tenable in the context of Indian food & grocery retailing. It has contributed to the retail marketing literature by being the distinctive one providing empirical considerations when using situational factors towards retail format choice decisions. Given the absence of published academic literature relating to store format choice behaviour in Indian grocery retailing, this study may add value and expand the body of knowledge. The comprehensive multiple discriminant analysis provides invaluable information to retailers in understanding how consumer's retail format choices vary with situational factors is a key element in developing successful retail marketing strategies. The findings reveal that consumers' purchase pattern and amount of money spent at different retail format choices reiterate the need for reorientation of retail format strategies.

The Unstandardised coefficients of five situational factors for three discriminant functions have far reaching implications for retail format managers to evaluate the retail format choice criteria in grocery retailing. The findings enable modern retail format managers to focus on risk reduction strategies, enhancing the value of physical surroundings and social surroundings to increase the customer traffic and sales volume. The findings from task definitions and temporal aspects have wide ramifications for kirana store and convenience store formats to upgrade their store formats for addressing different task definitions, and increasing the shopping frequency. The findings underline the importance of augmenting shopping experiences and reducing the time and convenience

risk.

Above all, with the heightened level of competition in today's food and grocery retail market, an increasing number of store formats are currently facing difficulties in operating profitability. This study enables marketers to understand shopper store choice behaviour under different shopping situations. Though they have ephemeral impact yet quintessential for devising food and grocery retail formats. This information may help the Indian food and grocery retail companies to reduce uncertainty when making marketing or retailing strategies targeted to grocery shoppers.

Conclusions

The present findings contribute to the understanding of consumer store choice behavior in food and grocery retailing in India, an area that has received scant attention within the academic literature. The overall results of this study show that Indian food and grocery consumers have cross shopping behaviour in nature. No single retail format seems to be prime in meeting consumer needs/wants. Consumers first choose a store format, and then move in to a particular store within the format where they can save time, money and effort. This study examines and highlights the predictability of eighteen situational factors under task definition, perceived risk, physical surroundings, temporal aspects and social surroundings for retail format choice behaviour in food and grocery retailing. Among the given situational factors, urgent purchase, regular purchase, less financial risk, less time and convenience risk, location, convenient timing hours, shopping frequency and social interactions are the significant predictors for the choice of kirana store format. The choice of convenience store format is significantly influenced by urgent purchase, less psychological risk, less performance risk, ambience, location, convenient timing hours, shopping frequency. Regular purchase, bulk purchase, getting information about new products, less performance risk, less psychological risk, ambience, location, visual merchandising, convenient timing hours, social interactions, and social experiences are the significant predictors for choice of supermarket store format. When shoppers facing the situation of purchasing grocery products in bulk, getting information about new products, less psychological risk, less financial risk, ambience, store design, visual merchandising, staying time,

convenient timing hours, social interactions and social experiences significantly influences the preference for hypermarket store format.

Limitations & Directions for Further Study

Because the present research is a starting point for a new direction in studying the effect of situational factors on retail format choice behaviour in Indian food and grocery, it has encountered a few limitations: This study is limited to neighbourhood kirana store formats, convenience store formats, supermarkets and hypermarkets in food and grocery retailing in twin cities of Hyderabad and Secunderabad only. The present study has not considered antecedent states such as momentary moods or conditions of buying like anxiety, pleasantness, hostility, fatigue, illness, cash in hand, possession of motor vehicle for predicting the retail format choice behaviour. This limitation may serve as future direction. It is also observed that without inclusion of store format attributes, predicting store format choice behaviour in retailing is not comprehensive. Hence, it may serve as direction for further research in this aspect. It is also observed that shoppers' attributes impacts situational factors in turn retail format choice behaviour. Hence, there is an opportunity to work in that direction. Longitudinal research is appropriate rather cross sectional for unequivocal understanding of the situational factors for wider generalisation of research findings in food and grocery retailing. More importantly, increased sample size and multi-city sampling can be considered for future research for better generalisations of the findings.

References

Arnold, M. J. and Reynolds, K. E. (2003), "Hedonic shopping motivations," Journal of Retailing, 79 (1), pp.77-95.

Babin, B.J. and Babin, L. (2001), "Seeking something different? A model of Schema typicality, consumer affect, purchase intentions and perceived shopping value," Journal of Business Research, 54 (2), pp.89-96.

Bajaj, Chetan., Rajnish, Tuli., Srivastava, N.V (2005), "Retail Management," Oxford University press, p.201.

Baker, J., Parasuraman, A., Grewal, D. and Levy. (2002), "The influence of multiple store environment cues on perceived merchandise value and patronage intentions," Journal of Marketing, 65, pp.120-141.

Beardon, W.O., Netemeyer, R.G. and Teel, J.E. (1989), "Measurement of consumer susceptibility to interpersonal influence," Journal of Consumer Research, 15 (March),

pp.473-481.

Belk, R.W. (1975), "Situational variables and consumer behaviour," Journal of Consumer Research, 2 (December), pp.157-164.

Bone, P.F. and Ellen, P.S. (1999), "Scents in the market place: explaining a fraction of olfaction," Journal of Retiling, 75 (2), pp. 243-162.

Burner, G.C. II (1990), "Music, mood, and marketing," Journal of Marketing, 54 (4), pp.94-104.

Carpenter, J. and Moore, M. (2006), "Consumer demographics, store attributes, and retail format choice in the US grocery market," International Journal of Retail & Distribution Management, 34 (6), pp. 434-452.

Churchill, G. A., and Iacobucci, S. (2002), "Marketing Research: Methodological Foundations," 8th ed., South-western, pp.755-756.

Dabholkar, P., Thorpe, D., and Rentz, J. (1996), "A measurement of service quality for retail stores: scale development and validation", Journal of the Academy of Marketing Science, 24 (1), pp.3-16.

Donovan, R. J., Rossiter, J. R., Marcoolyn, G., Nesdale, A. (1994), "Store atmosphere and purchasing behaviour," Journal of Retailing, 70, pp.283-94.

Dowling, R.G. and Staelin, R. (1994), "A model of perceived risk and intended risk-handling activity," Journal of Consumer Research, 21 (1), pp.119-25.

Foxall, G. R. (1999), 'The Behavioural Perspective Model: Commonsense and Consensuality," European Journal of Marketing, 33 (5/6): 570-596.

Jayasankaraprasad, Ch. and Ramachandra Aryasri, A. (2008), "Study of customer relationship practices in organised retailing in food and grocery sector in India: An empirical analysis," Vision-The Journal of Business Perspective, 12 (4), pp. 34-43.

Hair, J.F. Jr. , Anderson, R. E., Tatham, R. L., and Black, W. C. (1998), Multivariate Data Analysis, (5th Edition). Upper Saddle River, NJ: Prentice Hall.

Hawes, Jon M. and James R. Lumpkin. (1996), "Perceived risk and the selection of a retail patronage mode," Journal of Academy of Marketing Science, 14 (4), pp.37-42.

Hyllegard. Karen H., Jennifer Paff Ogle., and Brian H. Dunbar. (2006), "The Influence of Consumer Identity on Perceptions of Store Atmospherics and Store Patronage at a Spectacular and Sustainable Retail Site," Clothing and Textiles Research Journal, 24 (4), pp.316-334.

India Retail Report. (2009), "Food and grocery retail," India Retail Forum and Images Multimedia, pp.74-77.

Keen, C., Wetzels, M., de Ruyter, K. and Feinberg, R. (2004), "E-tailers vs retailers: which factors determine consumer preferences?," Journal of Business Research, 57 (7), pp. 685-695.

Kenhove, P.V., De Wulf, K. and Waterscoot, W. V. (1999), "The impact of task definition

on store attribute salience and store choice," Journal of Retailing, 75 (1), pp.125-137.

Lee, J.E. (1998), "Consumer expectation for service at apparel retail outlets," Journal of Family and Consumer Sciences, 89, pp.26-30.

Medina, S., R.W. Ward. (1999), "A Model of Retail Outlet Selection for Beef," International Food and Agribusiness Management Review, 2 (2), pp. 195-219.

Messinger, P.R., and Narasimhan, C. (1997), "A model of retail formats based on consumer's economising on shopping time," Marketing Science, 16 (1), pp.1-23.

Mitchell, V-W. (1998), "A role of consumer risk perceptions in grocery retailing," British Food Journal, 100 (4), pp.171-183.

Mitchell, V-W. and Greg Harris. (2005), "The importance of consumers' perceived risk in retail strategy," European Journal of Marketing, 39 (7/8), pp.821-837.

Mitchell, V.W. and Boustani, P. (1993), "Market development using new products and new customers: a role for perceived risk," European Journal of Marketing, 27 (2), pp.18-33.

Nargundkar. R. (2007), Marketing Research Text and Cases, 3 ed. Tata McGraw-Hill Publishers, Ned Delhi.

Nicholls, J.A.F., Roslow. S. and Comer, L.B. (1994), "An Anglo mall and Hispanic patronage," in Vasquez-Parraga, A.Z. (Eds), Business association of Latin American Studies Proceedings, 10th ed., pp.383.

Nicholls, J.A.F., Roslow, S. and Dublish, S. (1997), "Time and companionship: key factors in Hispanic shopping behaviour," Journal of Consumer Marketing, 14 (3), pp.194-205.

Outi Uusitalo. (2001), "Consumer perceptions of grocery retail formats and brands," International Journal of Retail and Distribution Management, 29 (5), pp.214-225.

Park, W.C., Iyer, E.S. and Smith, D.C. (1989), "The effects of situational factors on instore grocery shopping behaviour: the role of store environment and time available for shopping," Journal of Consumer Research, 15 (4), pp. 154-168.

Peter, T.L. Popkowski Leszczyc; Ashish Sinha., Anna Sahagal, (2004), "The effect of multipurpose shopping on pricing and location strategy for grocery retailing," Journal of Retailing, 80 (2), pp. 85-99.

Rosenbloom, B. (1983), "Store image development and the question of congruency," in Darden, W.R and Lusch, R.F. (Eds), Patronage behaviour and retail management, Elsevier Science, Amsterdam, pp. 141-149.

Sinha Piyush Kumar. (2003), "Shopping Orientation in the Evolving Indian Market," Vikalpa, 28 (2), pp. 13 - 22.

Sinha, P. K. and Arindam Banerjee. (2004), "Store choice behaviour in an evolving market", International Journal of Retail and Distribution management, 32 (10), pp.482-494.

Sinha, P. K. and Uniyal, D.P. (2005), "Using observational research for behavioural

segmentation of shoppers," Journal of Retailing and Consumer Services, 6 (5), pp.161-173.

Sinha, P. K., Mathew, E. and Kansal, A. (2005), "Format choice of food and grocery retailer," working paper No. 2005-07-04, IIMA.

Sridhar, G. (2007), "Consumer involvement in product choice: role of perceived risk," Decision, 34 (2), pp.51-66.

Stassen, R.E., Mittelstaedt, J. and Mittelstaedt, R.A. (1999), "Assortment overlap: its effect on shopping patterns in a retail market when the distortions of prices and goods are known," Journal of Retailing, 75 (3), pp. 371-386.

Sydney Roslow., Tiger Li. and Nicholls, J.A.F. (2000), "Impact of situational variables and demographic attributes in two seasons on purchase behaviour," European Journal of Marketing, 34 (9/10), pp.1167-1180.

Williams, J. and Dadris, R. (1972), "Shopping behaviour for soft goods and marketing strategies," Journal of Retailing, 48 (3), pp. 32-42.

Woodside A.G. and Trappey R. J. (1992), "Finding out why customers shop your store and buy your brand," Journal of Advertising Research, 32 (6), pp. 59-78.

Yavas, U. (2003), "A multi-attribute approach to understanding shoppers segments," International Journal of Retail and Distribution Management, 31 (11), pp. 27-42.

Zhuang, G., Alex S.L., Tsang., Nan Zhou., Fuan Li. and Nicholls, J.A.F. (2006), Impact of situational factors on buying decisions in shopping malls," European Journal of Marketing, 40 (1/2), pp.17-43.