IMPACT OF ATMOSPHERIC DESIGN ON CONSUMER PURCHASING BEHAVIOR AT SELF- SERVING CONVENIENCE STORE

M. S. Ishar Ali[1], K.M. Mubarak[2]

[1]Department of Management, Sri Lanka Institute of Advanced Technological Education, Ampara

[2]Faculty of Management & Commerce, South Eastern University of Sri Lanka

Corresponding author: ishar.ali@gmail.com

Abstract

The main aim of this study was to investigate the impact of atmospheric design on consumer purchasing behavior at self-serving convenience stores in Ampara District, Sri Lanka. Today, retail industry became highly competitive with the increasing number of convenience and other types of retail stores in the area. Hence, the retailers need to be more customer focused and have to differentiate from their competitors by making their atmospheric design more attractive to consumers and to encourage them to spend more time, money, purchase more merchandises and to stimulate their repeat purchase intention. A survey research was employed to collect primary information from 292 customers from convenience stores in Ampara District. Atmospheric design factors such as, product assortment, crowd density, and store floor space were used to identify the impact of atmospheric design on consumer purchasing behavior. Convenience sampling was employed for data collection using a questionnaire with a five-point Likert scale. SPSS 20.0 was used to analyze the data. Product assortment, crowd density and store floor space have significant impact on consumer purchasing behavior at self-serving convenience stores in Ampara District.

Keywords: Atmospheric design, Convenience stores, Consumer behavior

1. Introduction

In retail industry, business firms face high level of competition. Therefore, the success of a firm in this industry is influenced by its quick response to customers and its ability to understand consumer behaviors. Retail business ventures must focus on its customer preferences and factors influence their purchase decisions (Priyanka et al., 2014).

Store Atmosphere Store atmospheres are designed environment that create or reinforce the buyers' learning towards buying a product (Kotler et al., 2013). Consumer purchasing behavior is the behavior that consumer display in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs. (Kotler et al., 2013). Convenience Store is usually a food oriented-retailer that is well located, is open long hours, and carries a moderate number of items. This type of retailer is small (only a fraction of the size of the conventional super market), has average to above average prices and average atmosphere and customer service (Berman & Evans, 2005). It is very important for business practitioners to understand the effect of store atmosphere on consumer purchasing behavior in crafting business strategies.

2. Literature Review

Significant store atmospheric attributes that predicted shopping enjoyment in the store included design (Kim et al., 2015). Design factors have the most significant effect among all atmospheric factors (Han et al., 2011). In view of fashion retailing, store design particularly is an important factor in determining the personality of fashion stores (Malaika, 2009). Design factors are the most important elements for store atmosphere (Feng et al., 2008). Retailers are known to design store environments in a way that will enhance positive feelings of

customers about the store and merchandise, assuming the design would lead to desired consumer behavior such as higher willingness to purchase or longer stays in the store (Mano, 1999).

Design factors have significant effect on customer approach behaviors. The design factor of a store is the biggest store environment factor among the other factors that impacts customer approach behaviors, its power of influence and interpretation are significantly higher than other atmospheric factors. Customers pay special attention to the design of the store, including whether the overall structure and layout is reasonable, how attractive is the interior decoration, whether the signs and marks are clear in the store, whether the display of commodities in corridor space, commodity information and classification is complete and convenient when they visit the store (Priyanka et al., 2014).

2.1 Product Assortment

One of the basic features of the retailer is providing an assortment of product and services is (Levy & Weitz, 2008). As a key component of the marketing mix in retailing, product assortment represents a strategic positioning tool for customer attraction and retention (Grewal et al.,2002). In retailing, Assortment planning is one of the most challenging tasks. Especially the dynamics in consumer perceptions and preferences, retailer constraints and changing environmental factor contribute to the huge difficulty of assortment. From the consumers' perspective, assortment plays a fundamental role in store choice (Ishita & Suhsma, 2015).

Product availability and product assortment showed an equally strong relationship with customer perceptions. Typically importance is given to the product assortment in the store and the availability of the desired goods of the customers. Customers purchasing grocery products emphasize on store attributes like product assortment and product availability (Surabhi & Mishra, 2013).

2.2 Crowd Density

Dion (2004) stated that crowding is not simply a matter of density in a given space. Crowding appears to arise through the juxtaposition of density with certain social and personal circumstances which sensitize the individual to the potential constraints of limited space. While, Tlapana, (2009) argue that to provide high quality services under conditions of crowding, it is important to understand the relationships between crowding and personal control.

Improving customer traffic flow and availability of goods on-shelf have become more important retailing. If the product is not on the shelf when the shoppers arrive to make their selection, the sale (and potentially also the customer) may be lost to the store (Emberson *et al.*, 2006). Social density affects the perceived control consumers feel, or the degree of social power they experience (Rucker et al., 2012). Social density can elicit clear and predictable effects on buyer behavior (Adriana et al., 2014).

2.3 Store Floor Space

According to Cowles, (2002) store floor space shows store designs and in-store communications that make shopping trips easier and more fun for customers. Enough space to move around the store, ease of access from outside the store and clear navigation and displays are the core requirements. Well-designed floor space stimulate customer desire to stay longer, explore the premises, and affiliate with other shoppers and sales associates (Michon *et al.*, 2008).

Store floor space is one of the most important factors driving consumer elaboration and response in retailing. The store floor space has been found to have significant impact on retailers' overall performance through its influence on customers in information processing, stimulating purchase intentions, and attitude towards the retail establishment (Griffith, 2005). Store floor space can influence customers decisions to visit the store and the retail environment can guide their inferences about merchandise, service quality, and enjoyment at the store Turley & Milliman (2000).

3. Statement of Problem

From the previous researches, it is found that atmospheric design of a retail store has significant impact on consumer behavior (Priyanka et al., 2014). Store atmospheric have a positive impact on consumers' cheerfulness degree and good mood, pleasure level, peaceful statement, Pleasure of the consumer inside the store and the influence of it on spending time on the store and number of purchasing articles and the evaluation

of the atmosphere of the store is significant in relation to consumer buying behavior, if the store is considered as attractive and rewarding, the consumer will tend to spend more time inside store, as well as to buy more products from the store (Sabrina, 2014).

However, Hassan (2014) noted that most of the studies only focused on one store atmospheric stimulus instead of examine few stimuli together at one time. Therefore, those literature reviews may not be appropriate for the real stores since successful retailers always have mixed various stimuli to strengthen their distinctiveness. For this research, the researcher try to use all the relevant atmospheric design stimuli to interpret its impact on consumer purchasing behavior. By considering different types of design factors, it would be more accurate to predict purchasing behavior of consumer. Using wrong atmospheric design applications may lead to lower customer purchase intention because most of the purchase decision are made inside the retail store.

Few researches related to this study were done in Sri Lanka's retailing industry and the retailing in Ampara district. In addition, more studies are necessary to examine the impact of atmospheric design on buying behavior within the convenience store outlets. Therefore, this research intended to study in depth on this area based on Ampara district's retail industry specifically convenience stores which sells food related items to consumers to help local retailers understand well about the impact of store design atmosphere on purchasing behavior in the convenience stores in Ampara district, Sri Lanka.

4. Research Objectives

The main aim of the study is to investigate the impact of atmospheric design on consumer purchasing behavior at self-serving convenience stores in Ampara District and to extent the knowledge of the impact of design atmosphere on consumer purchasing behavior.

The objectives set out to explore in this research are: To highlight the impact of product assortment on consumer purchasing behavior at self-serving convenience stores, to examine the impact of crowd density on consumer purchasing behavior at self-serving convenience, to determine the influence of store floor space on consumer purchasing behavior at self-serving convenience stores and to identify which design atmospheric factor that has performed the best based on the customers' evaluation.

5. Research Methodology

5.1 Formulation of Conceptual Model and Hypotheses Development

Based on the extracts of literature review the following conceptual framework was developed. The consumer purchasing behavior as dependent variable, and the product assortment, crowd density, and store floor space as independent variables.

Figure 1.1: Conceptual Framework
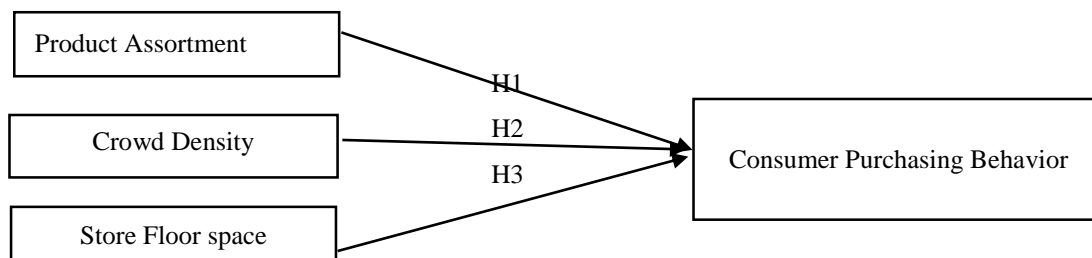
Based on the above literature review and conceptual framework, following hypotheses were developed

H1: Product assortment has a positive impact on consumer behavior.

H2: Crowd density has a positive impact on consumer behavior.

H3: store floor space has a positive impact on consumer behavior.

1.5.2 Population, Sampling and Data Collection

The population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. It is the group of people, events or things of interest for which the researcher wants to make inference (Sekeran and Bougie, 2013). In this research the total population of the Ampara district was considered as population, but the actual population during the survey period is not known and the population statistics was not available as it was not done.

As the population is not known in the Ampara district, convenience sampling was used because it is easy to collect data. This approach is practiced because everybody is a retail store customer nowadays, because the exact number of customers who buy from self-serving retail stores could not be obtained and everyone in the area has a kind of experience in purchasing at any form of self-serving retail stores. In this case the sample size was 300 respondents as they were considered to provide sufficient input to ascertain findings.

The questionnaire is the most common instrument to collect data. The researcher has chosen a self-administered questionnaire as a tool for the data collection. The questionnaire was in the form of closed-ended (or structured) questions in which respondents were asked to make the choice from a list of possible responses. Close-ended questions are also easy to administer and usually evoke rapid response (Schmidt & Hollensen, 2006). To make the study more effective and efficient, questionnaire consists of closed ended question and five point Likert scale questions.

6. Data Analysis

6.1 Descriptive Statistics for Demographic Factors

The research focused on some background variables of respondents such as gender, age, marital status, employment status, and monthly income to get some insights of the sample in terms of this research. Out of the 295 respondents, almost 61% of the customers were females and 39% of customers were males. Majority of the customers' average age was in between 31-40 years counting of 30.2% of total and 32% of home makers while the remaining 26% from government and 9% working in private sectors. Further, 45% of sample has no income, 13% of the people income falls in between Rs. 25,000 - Rs. 35,000. Out of the 291 respondents 46.9% of the customers used to buy from the self-serving retail convenience stores regularly while 53.1% of the respondents visit occasionally.

6.2 Principal Component Analysis

Principal component analysis is used as a method of reducing data, this technique appropriate when a large sample size is used. Principal component analysis was used here because the sample size was 300 which is good to conduct principal component analysis. KMO and Bartlett's Test used to check 1. Whether it is appropriate to conduct factor analysis, 2. Communalities used to extract the items and 3. The Eigen values used to explain the variables by combining items using the rule of thumb.

Table 1.2: KMO and Bartlett's Test for IVs and DV

Variables	KMO Measure of Sampling Adequacy	Sig
Product assortment	0.752	0.000
Crowd density	0.795	0.000
Store floor space	0.758	0.000
Consumer Purchasing Behavior	0.724	0.000

(Source: Survey Data)

6.2 Regression Analysis

The regression analysis is used to reveal how different store design factors affect the consumer purchasing behavior at self-serving convenience stores. Several independent variables may contain information about the variables that are trying to predict or understand.

Table 1.3: Results of Regression Analysis

Predictors	Beta	P	t	VIF
Product assortment	.314	.019	2.214	1.076
Crowd density	.190	.042	3.659	1.088
Store floor space	.603	.000	4.040	1.017
Dependent Variable: Consumer Purchasing Behavior				

(Source: Survey Data)
Notes: F=22.309, P < 0.05, R^2 = .619, Adjusted R^2 = .591, n = 291
Constant = 1.421, X_1 = .648, X_2 = .494, X_3 = .330,

The overall model explains the fit for the research. R^2 in the table given above shows this aspect. This coefficient is a measure of how well the regression equation fits the data. According to the above table 1.3, the R^2 is 0.61.9 (62 percent), hence, the regression equation apparently have a fit with the data. It can be predicted that 62% of the variance (*R*-square) in dependent variable has been significantly explained by the four independent variables (product assortment, crowd density, and store floor space). Here, $p = 0.000 < 0.05$ and *ANOVA* table shows that the *F* value of 22.309 is significant at the 0.000 level. So the model is significant and model exists.

When the individual variables are focused, at first, considering the product assortment is considered; $p = 0.019 < 0.05$, hence, highly significant and explain a much about the dependent variable. Crowd density values; $p = 0.042 < 0.05$, highly significant to the model. Store floor space values; $p = 0.000 < 0.05$, highly significant to the model.

6.2.1 Multicollinearity
Multicollinearity used to test whether the predictors of one variable are correlated with other predictors. Multicollinearity arise when the multiple factors of the model that are correlated not just to the dependent variable, but also to each independent variables. Multicollinearity increase the standard errors of the coefficients. Increased standard errors in turns means that coefficient for some independent variables may be found not to be significantly different from 0. Without multicollinearity and with lower standard errors, those coefficient might be significant. VIF value is used to explain the multicollinearity in this research.

If the VIF = 1 there is no multicollinearity among factors, but if the VIF > 1, the predictors may be moderately correlated. The above table shows that the VIF for the independent variables are in between 1.5 − 1.7, which indicates some correlation, but not enough to be overly concerned about. The rule of thumb is, a VIF between 5 and 10 indicates high correlation that may be problematic. And if the VIF > 10, it is assumed that the regression coefficients are poorly estimated due to multicollinearity.

According to above table 1.3: results of Regression Analysis, the VIF < 0.05, it means that there is no significant multicollinearity problem and therefore, the regression coefficients are estimated well.

6.2.2 Coefficient of the variables
The C*oefficients* table indicate the important independent variables that influence most of the variance in consumer purchasing behavior. The *standardised coefficient* shows that the highest number in the beta is 0.648 for product assortment, which is significant at the 0.000 level. This indicates that the consumer purchasing behavior at self-serving convenience stores is influenced by product assortment in great extent.

The coefficient of crowd density in the design atmosphere is a determinant factor of Consumer Purchasing Behavior, a one percent increase in crowd density would rise to a 49.4 percent increase in Consumer Purchasing Behavior (see table 1.4). Conversely, Coefficient of store floor space is a determinant factor of Consumer Purchasing Behavior which would give 33.0 percent increase in Consumer Purchasing Behavior. All these were significant to the model at 0.05 level. Hence, the following Model fit regression equation is derived.

$$Y = 1.421 + 0.648 \, X_1 + 0.494 \, X_2 + 0.330 \, X_3$$

Y = Consumer Behavior, X₁ = Product Assortment, X₂ = Crowd density, X₃ = Store floor space

6.2.3 Hypotheses Testing

After the analysis of the data, hypothesis was tested to make sure the assertion in the light of the data analyzed. The most common policy in statistical hypothesis testing is to establish a significance level, denoted by α, and to reject H_0 when the p – value falls below it. Here, the hypotheses are tested at 5% confidence level ($\alpha = 0.05$).

Table 1.4: Hypotheses Testing

Variables	Hypothesis (Null + Alternative)	P - Value	$\alpha = 5\%$	Null Hypothesis	Alternative Hypothesis
Product Assortment	H_0, H_1	.011	0.05	Reject	Accept
Crowd Density	H_0, H_2	.042	0.05	Reject	Accept
Store Floor Space	H_0, H_3	0.00	0.05	Reject	Accept

7. Conclusion

This study was designed to see the impact of Store design variables of self-serving convenience stores on consumer behavior. The literature search revealed that the design atmospheric factors such as product assortment, crowd density, and store floor space have significant impact on consumer purchasing behavior. Three hypotheses were proposed to investigate the impact of store design on consumer purchasing behavior, and the results of the hypotheses tests supported all hypotheses. These results provided valuable insights for understanding the stimulus of consumer purchasing behavior at self-serving convenience stores.

Based on the analysis, it is found out that product assortment, crowd density and store floor space have significant and positive impact on consumer behavior. As the finding imply, self - serving convenience stores have to find out the best mix of design factors / cues that increases the intention to spend more time and money, purchase more items and the repeat purchase intention.

8. Managerial Implications

This study provides a validated instrument to measure the relationship between design atmosphere and consumer purchasing behavior and its serves as a tool for understanding the impact of various design atmospheric cues. Findings of this study suggest that in an effort to increase the number of foot falls in to the retail store an attempt should be made to explicitly focus on effectively tailoring the atmospheric design factors. With respect to such attributes related to design factors such as product assortment, crowd density, and store floor space, we found out that these factors have a positive effect on shopping behavior.

9. Limitations and Direction for Future Research

From a larger retail industry the self-serving convenience stores type and the location of study is Ampara District area being selected for this research. Further, the customer base of the study limits to the end user consumer of self-serving convenience stores which mainly sell food items not a fashion or the customers of other retail types. Population consist only the customers who shop at self-serving retail convenience stores who are customers of one or many self-serving retail stores in Ampara District and those selected conveniently to administer questionnaires. Furthermore, the customers' responses are not comparatively studied based on different players in the industry. Finally, the variables restricted only to a specific constructs of four independent variables but there are many other motivators are not taken to the study. All these should be considered in the future researches to improve the generalizability of the findings.

10. References

Adriana V. M., Block L. G., & Morrin. M. (2014). The Cool Scent of Power: Effects of Ambient Scent on Consumer Preferences and Choice Behavior. *Journal of Marketing*, American Marketing Association, 1-14.

Baker, J., Parasuraman, A., Grewal, D. & Voss, G.B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing*, **66** (2), 120-122.

Berman, B. & Evans, J. (2005). *Retail management: A Strategic Approach,* (8th Edition ed.), Pearson Education.

Cowles, S. (2002). Creating the ultimate baby and toddler-friendly environment. *Young Consumers: Insight and Ideas for Responsible Marketers,* 3 (3), 41– 48

Dion, D. (2004). Personal control and coping with retail crowding. *International Journal of Service Industry Management,* 15 (3), 250-263.

El-Bachir Sabrina. (2014). The Influence of the Store Atmosphere on the Consumer Behavior. *Mediterranean Journal of Social Sciences*, 5(8), 229-235.

Emberson, C., Storey, J., Godsell, J. & Harrison, A. (2006). Managing the supply chain using in-store supplier employed merchandisers. *International Journal of Retail & Distribution Management,* 34 (6), 467-481.

Feng-Chuan Pan., Suh-Jean Su.,& Che-Chao Chiang. (2008). Dual attractiveness of winery: atmospheric cues on purchasing. *International Journal of Wine Business Research,* 20(2), 95-110.

Geetha Mohan., Bharadhwaj Sivakumaran., & Piyush Sharma.(2013). Impact of store environment on impulse buying behavior. *European Journal of Marketing*, 47(10), 1711 – 1732.

Griffith, D. A. (2005). An examination of the influences of store layout in online retailing. *Journal of Business Research,* 58 (10), 1391-1396.

Han-Shen Chen., & Tsuifang Hsieh. (2011). The effect of atmosphere on customer perceptions and customer behavior responses in chain store supermarkets. *African Journal of Business Management,* 5(24), 10054-10066.

Hassan A. (2015). Key Drivers Influencing Shopping Behavior In Retail Stores. *Journal of Inspiration Economy*, 2(1), 7-33.

Ishita Sachdeva & Suhsma Goel. (2015). Retail store environment and customer experience: a paradigm. *Journal of Fashion Marketing and Management*, 19 (3), 290-298.

Kim K. P., Johnson., Hye-Young Kim., Jung Mee Mun., & Ji Young Lee. (2015). Keeping customers shopping in stores: interrelationships among store attributes, shopping enjoyment, and place attachment. *The International Review of Retail, Distribution and Consumer Research*, 25(1), 20–34

Kotler, P., Armstrong, G., Agnihotri, P. Y., & Haq, I. (2013). Marketing Management 14th Edition, Pearson Education

Levy Park, M & Weitz, B. A. (2009). Retailing Management, 7th Edition, McGraw-Hill International Edition.

Lovelock, C., & Wirtz, J. (2011). Services Marketing. People, Technology, Strategy. 7th Edition, Pearson.

Malaika Brengman., & Malaika Brengman. (2009). Determinants of fashion store personality: a consumer perspective. *Journal of Product & Brand Management*, 18(5), 346–355.

Mano, H. (1999), The influence of pre-existing negative affect on store purchase intentions, *Journal of Retailing*, 75 (2), 149-172.

McGoldrick, P. (2002), *Retail Marketing*. 2nd Edition, McGraw-Hill, London.

Priyanka Singh, Neha Katiyar & Gaurav Verma (2014). Retail Shoppability: The Impact Of Store Atmospherics & Store Layout On Consumer Buying Patterns. *International Journal Of Scientific & Technology Research,* 3(8), 15-23.

Rucker, Derek D, Galinsky & David Dubois. (2012), Power and Consumer Behavior: How Power Shapes Who and What Consumers Value, *Journal of Consumer Psychology*, 22 (3), 352–68.

Salomão Alencar de Farias, Edvan Cruz Aguiar & Francisco Vicente Sales Melo. (2014). Store Atmospherics and Experiential Marketing: A Conceptual Framework and Research Propositions for An Extraordinary Customer Experience. *International Business Research*, 7(2), 87-99

Schmidt, M.J. & Hollensen, S. (2006). *Marketing Research an International Approach*.London: Prentice Hall

Sekaran, U., and Roger. B (2013). *Research Methods for Business* (5th edn). New York: John Wiley & Sons, Inc.

Surabhi Koul & Hari Govind Mishra. (2013). Customer perceptions for store attributes: a study of traditional retail stores in india. *Journal of Business & Economics,*5(1), 79-103.

Tlapana, (2009). Store layout and its impact on consumer purchasing behaviour at convenience stores in kwa mashu. Durban University of Technology

Turley, L. W., & Milliman, R. E. (2000). Atmospherics effects on shopping behavior: a review of the experimental evidence. *Journal of Business Research*, *49*(2), 193–211.