

Behaviour of Customers in Retail Store Environment- An Empirical Study*

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Abstract

This study attempts to evaluate the behaviour of a customer in retail store environment interaction. The methodology adopted in the paper looks for tracking of the time spent and the number of purchases made during shopping, together with several other behavioural measures. The study uncovered an interaction effect in dwell time and number of purchases between the type of shopping trip (fill-in trip vs. major trip) and the consumers' layout preference. Shoppers taking major trips were more prone to shop in a free-form layout, whereas those taking fill-in trips tended to prefer a grid layout. The article discusses implications for research and practice, and finally concluded by identifying areas for future research.

Key words; Consumer, Store environment, Interaction, Layout, Shopping plans.

1.0 INTRODUCTION

Retail management attracts researchers in most part of the world mainly in the area of marketing mix. Several studies look the store environment as a small part of retail management. What the consumer does in the store environment is an area where several studies have been made. However, along with that what the store environment does to consumers are two intertwined questions. Surprisingly,

within the marketing and the retailing literature the two questions have been investigated in isolated streams of research. On the one hand, marketing and retailing researchers have for long studied the effects of the store environment on consumer behaviour. Environmental psychology's Pleasure-Arousal-Dominance model and the underlying Stimulus-Organism-Response paradigm have greatly influenced the development of store

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atmospherics research (Mehrabian and Russel, 1974; Turley and Milliman, 2000). These studies answer the first question, that is, what the environment does to consumers. On the other hand, in-store decision-making models investigate consumer choice, assuming that the context where the choice takes place (namely, the store environment) does not interfere with consumers' actual decisions (Inman and Winer, 1998). These studies looked for an answer to the second question, that is, what consumers do in a store environment.

The two streams of research are much more entangled than it appears. It is in fact true that the store environment, in and of itself, influences consumer behaviour. But it is also true that consumers are presented with alternatives and, even if under various environmental influences, take decisions and make choices on their own. In this article, an attempt has been made to bring evidence that understanding consumer choices in a store environment involves a dynamic interaction between choice and environment.

2.0 THEORETICAL BACKGROUND

Recent theoretical frameworks (Turley and Milliman, 2000; Ng, 2003), however, emphasize the need to expand the research to other

supposedly relevant moderators in the consumer-environment relationship, such as shopping plans or motives. More specifically, many studies suggest that motives and plans are antecedents to what consumers experience while shopping, including their emotional states (Dawson *et al.*, 1990; Machleit and Eroglu, 2000), perceptions (Eroglu and Machleit, 1990) and choices (Wirtz *et al.*, 2000).

To understand the effect of environmental variable/s (for example, the effect of scented vs. unscented environments) on psychological or behavioural responses (for example, overall time spent), most previous studies have used experimental designs dictated by the Stimulus-Organism-Response (SOR) approach (Spangenberg *et al.*, 1996). The model's assumption that the consumer's responses to the store environment (that is, approach vs. avoidance) are moderated by emotional states (namely, pleasure and arousal), has been valuable in isolating the effects of single environmental variables (Baker *et al.*, 2002).

Although several environmental influences occurring throughout the process of shopping have been studied, the focus of previous research has been confined to the effect of certain environmental variables, given certain inputs (for example, knowledge of the retail environment, shopping plans,

etc.) and their effect on certain outcomes (for example, purchases, time spent, etc.). The difficulty in manipulating consumer antecedents, while at the same time monitoring or manipulating the store environment, has tended to produce the two different streams of research, obscuring the interaction between the consumer and the store environment.

Field and laboratory experiments have been widely applied as a methodology to investigate the causal relationship between the store environment (independent variable) and shoppers' psychological and behavioural responses (dependent variable) (Turley and Milliman, 2000). In laboratory experiments researchers have used written descriptions (Akhter et al., 1994), pictures (Hui and Bateson, 1991) and videos (Baker et al., 2002) to manipulate the store environment. Although these methods are effective for testing psychological reactions, none of them enables the researcher to track the behavioural response of the subjects in the course of shopping.

Furthermore, they do not allow any sort of interaction between the environmental stimuli (usually projected on a screen) and the user, who is only passively absorbing the stimuli. On the other hand, field experiments achieve the greatest external validity and allow one to

include behavioural responses among the dependent variables. However, in such a case the environmental settings can be very costly to realize and usually require a close collaboration with the local retailer. While laboratory experiments typically lack the means to manipulate various environmental factors, field experiments require many resources for monitoring the process of shopping and properly manipulating environmental and consumer variables. This research method limitation may thus inhibit treating shopping as 'a process'.

To explain the consumer-environment interaction the present study adopted the view of Everett *et al.* (1994) that the environment has different nested scales through which the individual moves, namely, the macro (for example, natural or built exterior environment), the meso (for example, structural interior environment) and the micro scale (for example, single shelves, tabletops, a computer desk and so forth). Thus, the macro-environment contains many meso-environments, which in turn contain many microenvironments. Figure 1 shows reorganization into three nested scales of the axonomy of environmental factors influencing consumer behaviour:

- The external environment, concerning all the environmental

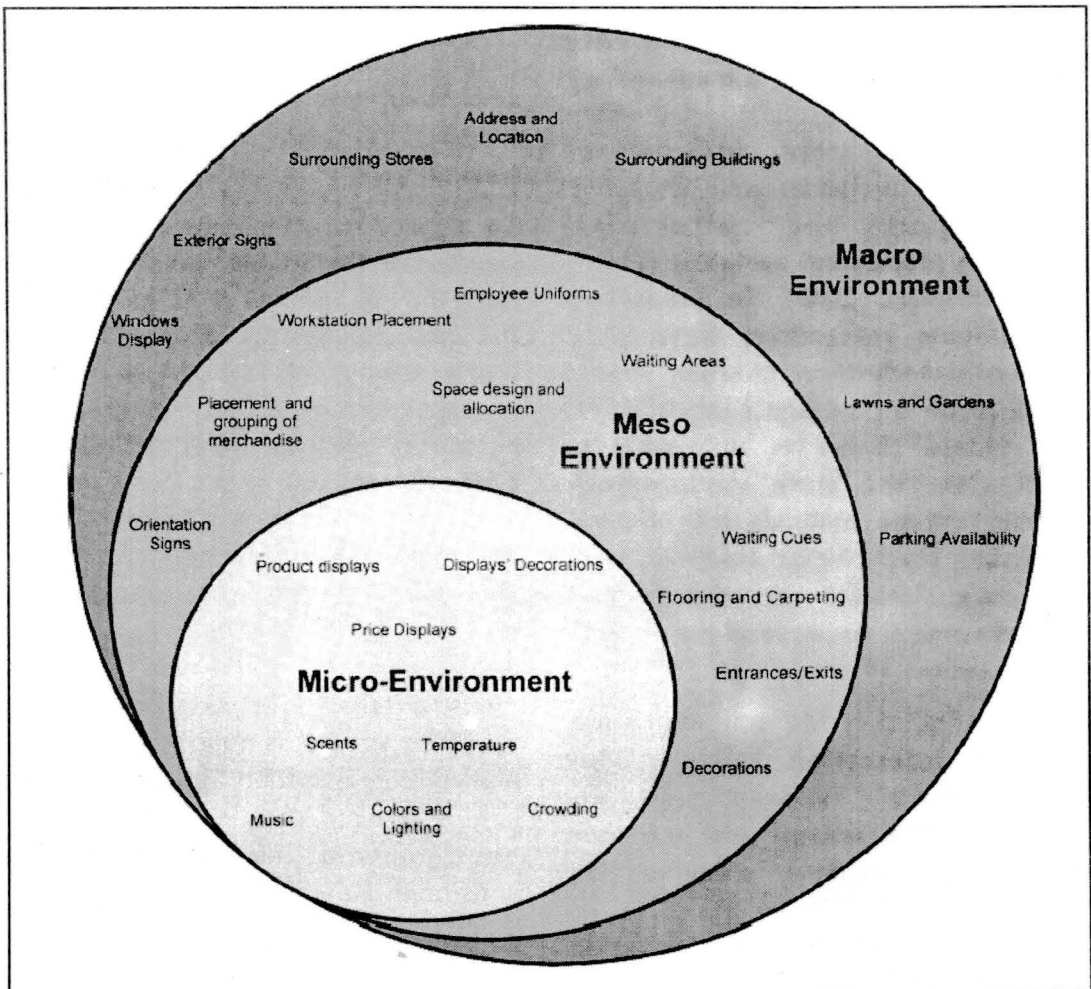
variables that are on the exterior of the store (for example, size and colour of building, surrounding stores, signs and so forth);

- The internal environment, that is, all the layout and design variables that determine the structure of the interior (for example, space design and

allocation, placement and grouping of merchandise and so forth);

- The micro environmental variables, including all the variables that are, in a geographical sense, within close proximity to the consumer (for example, displays, signs, labels and so forth).

Figure 1. The nested scales of the store environment



In a typical shopping trip the shopper moves from the macro-environment (namely, exterior of the store), to the meso-environment (that is, interior of the store), to micro-environments (namely, shelves). The meso-environment is a known structure; that is, it is possible to know exactly where products are positioned in the store layout. The locations the consumer wants to visit during the shopping trip (namely, the micro-environments) are determined by the match between the position of the products and what the consumer plans to buy. The paper refers to this match as the 'environmental determinism effect', one feature of the interaction between consumer and the store environment. It implies that consumers' path through the layout of the store is somehow determined by a priority, and specifically on the basis of what items customers plan to buy.

Two types of layout of the store environment are distinguished in studies of store atmospherics: grid and free-form (Levy and Weitz, 2004). Each type presumably fills a different consumer need. The grid layout is more suited for planned purchases, whereas the free-form layout is more appropriate for browsing and more leisurely shopping. Supermarkets typically accommodate both layouts for

different categories of items, generally reserving the free-form layout for fresh produce and the grid layout for sealed products.

The literature on in-store consumer decision-making suggests that consumers can use two different kinds of search attitudes or predispositions toward the store environment: active or passive (Titus and Everett, 1996). Active search behaviour is put into practice by overtly controlling the sequence with which products are acquired from the shopping list. A passive search relies on the examination of the immediate environment in order to identify specific products or categories.

Synthetically, the consumer chooses the shopping pattern in the active search, but is driven by the store environment in the passive search. Because free-form areas are more explicit than grid areas, they are more suitable for the browsing and relaxed purchasing behaviour of individuals passively driven by the store environment. On the contrary, searching for the product and exploring the environment characterizes a more active predisposition towards the store environment. Assuming that low pre-purchase planning is put into action through passive search behaviour,

whereas high pre-purchase planning is more geared towards an active search, we thus hypothesize that:

Consumers with a specific goal shop more and spend more time in a grid layout of the store whereas consumers with a loose plan spend more time and money within a free-form layout.

3.0 METHODOLOGY

To test the hypothesis that consumer goals serve as a predictor of preference in the store environment the present study has been conducted with a view of simulating a strict-goal condition (that is, fill-in shopping trip) and a loose-goal condition (namely, major shopping trip) (Köllat and Willet, 1967; Walters and Jamil, 2003). The study monitored objective behavioural measures of time spent and number of different products purchased between two different types of layout (that is, grid and free-form) (Levy and Weitz, 2004). This result in a design with two independent variables, the shopping trip type (major or fill-in), and the layout type (grid or free-form), and two dependent variables, the time spent in the store and the number of products purchased. This methodology has been observed in three big retail shops in Dibrugarh Town where in one store only the Grid layout, second outlet having only Free-Form layout

and the third one having both grid and free-form layout exist. The study lasted about four months during winter 2008 and have covered 2098 customers who have visited these retails during the study period.

4.0 FINDINGS

The manipulation checks have supported the present design. Overall time expenditure was greater for subjects in a major shopping trip (Mm) than those in a fill-in (Mf) shopping trip (Mm=18.3 min.; Mf=9.4 min.; $F(1.84)=22.193$). It was found that the same difference exist for the number of different products purchased (Mm=9.6; Mf=4.7; $F(1.84)=18.510$). To validate the time pressure manipulation it was asked subjects to indicate on a 7-point Likert scale whether they felt time constrained during the act of shopping. Those in the fill-in trip condition felt more time constrained than those in the major shopping trip condition (Mm=3.2; Mf=6.2; $F(1.84)=17.298$). Gender did not have any significant influence on any of the dependent variables.

At the aggregate level, customers spent much more time and made many more purchases in the free-form layout part of the store than in the grid layout. The average time spent by all the

subjects in the free-form layout was 8.8 minutes, whereas in the grid layout it was only 3.0 minutes ($F(1.84)=25.371$). The average number of purchases made in the free form was 5.3 products, whereas an average of 2.3 products were purchased in the grid layout ($F(1.84)=13.110$). This finding is consistent with the hypothesis that grid layouts allow for more efficient shopping and are less appropriate for browsing than free-form layouts (Levy and Weitz, 2004). Thus, as expected, shoppers in the major group generally purchased more items than those in the fill-in condition, but the purchases that they made in the free-form layout were greater than those made in the grid layout. Subjects in the fill-in condition shopped equally in both layouts. These results are consistent with the hypothesis of interaction between store layout and consumer plans.

The number of product/categories on the shopping lists averaged 5.7 products and 6.2 categories, respectively, for subjects in the fill-in and major group. However, products in the grid layout predominated in the shopping lists generated by subjects in the fill-in situation ($Mg=3.3$; $Mf=2.4$), whereas products in the free-form layout predominated in the lists generated by subjects in the major

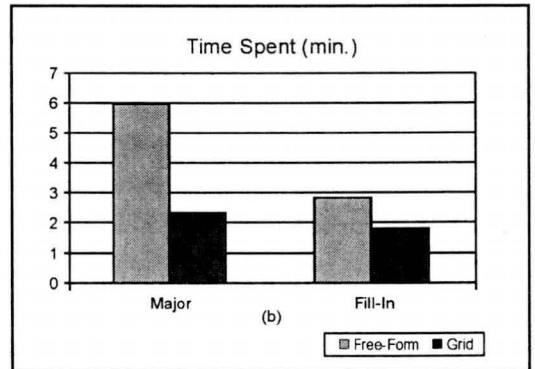
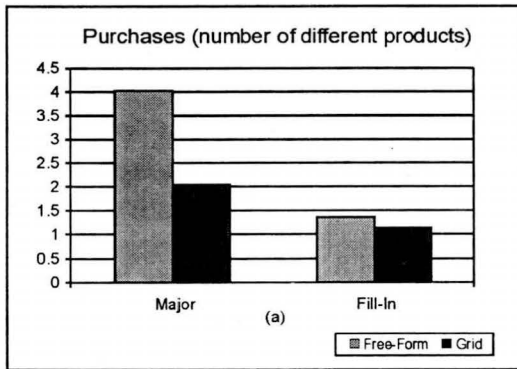
group ($Mg=2.6$ $Mf=3.6$), creating a significant trip-type by layout-type interaction effect ($F(1.82)=10.245$; $p<0.002$). Therefore, subjects who had to satisfy urgent needs thought more of products that would be situated in the grid layout, while the opposite happened for shoppers in the major group, who instead indicated that they wanted to buy products that would be found in the free-form layout. Since none of the subjects knew a priority for the location of products and categories in the store layout this finding firmly supports the hypothesis of interaction.

Two-way ANOVAs (see Table 1 and Figure II) on time and purchases confirmed the hypothesized interaction effects of shopping trip and layout type ($F(1.168)=5.798$; $P<0.017$ - $F(1.168)=4.864$; $P<0.029$). The pattern of correlations indicates a stronger relationship between time and purchases for shoppers in the major group in the free-form layout ($r=0.432$) and for shoppers in the fill-in group in the grid area ($r=0.697$). A lower positive correlation also was found for shoppers in the fill-in condition in the freeform area ($r=0.349$), but the correlation was not significant for shoppers in the major trip condition in the grid area ($r=0.292$). Thus, if more

Table 1 : Two-way Anova on time spent and purchases

	df	F	Sig.
Time			
Shopping trip	1,168	12.130	0.001
Layout	1,168	20.890	0.000
Shopping trip*Layout	1,168	05.798	0.017
Purchases			
Shopping trip	1,168	19.973	0.000
Layout	1,168	07.441	0.007
Shopping trip*Layout	1,168	04.864	0.029

Figure II. The main effects of layout and shopping trip type on the number of purchases (a) and dwell time (b)



time spent in the free-form area means a greater number of purchases for those in major shopping trips, this does not hold for shoppers in the fill-in condition. For consumers in major shopping trips there seems to be a preference to spend more time and make more purchases in the free-form layout of the store. Although

fill-in shoppers spend more time in the free-form layout, they shop more efficiently in the grid part as the time elapsed between purchases is shorter in the grid than in the free-form layout.

5.0 DISCUSSIONS

The consumer’s different pre-purchase

plans explain the pattern of preference for the two different types of layout. In major shopping trips customers are led to spend more time and make more purchases in the free-form areas of the store than in the grid areas. While shopping, grid areas allow for much more efficient scanning of products because the environment allows customers to move only to and fro. Thus, the grid layout seems to be more suitable for task-oriented shoppers in fill-in trips because once a straightforward signage is set customers can easily orient themselves and find the items needed. On the other hand, free-form areas emphasize the uninterrupted space surrounding the customer and mostly eliminate environmental determinism. Much more information and alternatives are presented to the shopper in this situation, increasing uncertainty in the decision process and requiring greater cognitive effort. Thus, customers taking fill-in trips find free-form layouts inefficient for their purposes. Overall, these results suggest that the hypothesis of interaction between goals and the store environment should not be rejected.

It is important to note here that the other relevant theories in environmental psychology can also be applied to the branch of retail research investigating the relationship between consumer and

store environment. In particular it can be referred to the core hypothesis of the interactionist framework which holds that individuals not only experience environmental conditions by reacting to the environment (as the Mehrabian and Russel's PAD framework assumes), but that they also use the environment to achieve their goals, thereby acting on it (Titus and Everett, 1996; Bonnes et al., 2003). Thus, consumers neither passively accept the environmental structure, nor strive to change the environment to fulfil their needs, but adapt to environmental conditions to achieving their goals. In a retail context, this suggests that the goals and motives underlying the shopping trip play a moderating role in the relationship between the consumer and the store environment. We found evidence that the behavioural outcomes of the shopping experience (for example, time spent and number of purchases), which emerge from this adaptation depends on the fit between the consumer's goals (namely, what the consumer wants to do in a store environment) and the environmental setting (that is, environmental layout constraints).

Given the results of this study, a managerial implication is that retailers should be careful about how consumers value the time they spent in the store. Retailers try to increase the time spend by the customer in the store assuming

that the more they stay there, the more they will buy. However, the results of this study suggest the counterintuitive insight that this could not always be the case. After all, if it were, there would not be a market for businesses like convenience stores or fast-foods.

6.0 LIMITATION AND FUTURE RESEARCH WORK

It is true that biases such as larger shopping due to the absence of budgetary and physical limits, less variance in brand switches and increased sensitivity to promotions due to the absence of information, still affect consumer responses. Although these differences were present equally in both conditions, thereby preserving the internal validity of the study, external validity might have been hindered by these biases. For example, the absence of a budgetary limit or the tendency to be more conservative could have generated more/less purchases than would have occurred in a real setting. On the other hand, the results that have been obtained are consistent with the current hypotheses about store layout functionality (Levy and Weitz, 2004; Vrechopoulos et al., 2004), supporting the external validity of the study. Although technically possible, one could not manage to set a budget limit for resource limitations. However, future studies could surely address this point.

Further than method itself, the time spent as mentioned in the study is an estimated time frame observed by the data collector, which may contain some bias. A different research design could strictly control for the purchase plans by fixing a list of products, or alternatively it could control for both the shopping list and the position of the product in the store layout. Although weaker on external validity, these designs are more robust than the one we tested and could further corroborate the findings.

Finally, an attempt has been made to explore one very particular relationship, which is that between shopping plans and the preference for a specific part of the layout of the store. Although the study obtained significant results, the consumer-environment interaction is a far more multifaceted phenomenon and as such deserves a broader investigation.

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