

# EFFECT OF SHELF SPACE OPTIMIZATION ON CONSUMER DECISION MAKING

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**ABSTRACT:** The basic purpose of this paper was to know the effect of shelf space arrangements of products on purchase decisions of customers. A sample of 100 respondents has been selected through convenient sampling technique from Lahore, Pakistan. Analysis was done through structured feedback analysis. Findings of this research showed that different arrangements of products in shelf space have positive impact on in store purchase decisions. This research has practical implications as well. Retail managers of different stores can use the result of this study to make the shelf space arrangement better to attract more shoppers.

**Keywords:** Decision making, Shelf space management, Retail store

## 1. INTRODUCTION

Purchasing is a common practice that we frequently encounter in our daily life. This purchasing ranges from the convenient goods to the specialty goods. More often when we are going to purchase convenient goods then these purchase decisions are depending on the items listed in the mind or on the paper. However, there are some purchases decisions that are not followed by the traditional decisions process rather these decisions are based on some external stimuli which are encountered during the shopping. These external stimuli include different arrangements, but shelf space in store environment is very much important to be studied in this context. Different studies have been conducted to understand the nature of consumer decision making. According to Drèze, Hoch and Purk [1], the major proportions of consumer decision making takes place within store. While with reference to prices of products are also showing influence within the store environment [2]. Product placing has also shared the major contribution in decision making of consumers as if it is properly placed in the shelf, it will have more chances to influence the consumers' attention and attitude and thereby influencing the purchasing decision [1]. So, by using the effective shelf management technique the retailers can enhance the visibility of product and in turn increasing the sales of that particular product [3]. Now a days shelf management technique has become utmost important for the retailers that how they decide strategies for the effective allocations of products in different ways in shelves and inducing the positive emotions in the behavior of consumers to motivate them to purchase [4]. The basic goal behind adopting the strategy of shelf management is that to organize the products in the best way to generate more profits by changing the existing shelf spaces [5]. This is obvious that consumers will select that product which is easily available to them in the store and which have a proper location in front of their eyes. So, the key to using shelf space is to get the customer attention and create an environment which helps them to perform purchase with great ease. Whenever, you are having a chance to visit the mart, you will feel that all the goods are placed in a sequence in the shelf and these shelves are properly installed in every corner of mart. Their locations and placements of products on them create a harmony which helps the consumer to select their choices without difficulty [6]. This also eases the process of buying and may cause to

initiate the process of purchase decision on spot [7]. In the eastern world, especially in Pakistan consumers are confronted by day to day advertisements on different products and brands and this typical consumer when goes to shopping, he or she may gets a chance to involve in decision making within the store when he or she views the particular product in front of his/her eyes. Consumer decision making is under investigation from so many years and a lot of researches have been conducted with reference to different products and services. But a major portion of this work was done in the western culture where people habits are quite different than the people living in the eastern cultures. In these studies work has also been done to know the effect of different marketing communications and in store communication on purchase decision making. In this context major work was done for effect of sales promotion techniques and demographics effect of consumer on buying behavior of consumers. In order to extend the process to understand the consumer behavior inside the store. The main emphasis is given in this paper to investigate the impact of shelf space on consumer decision making in the context of Pakistan and specifically in Lahore.

### 1.1 Problem Statement

How does the shelf space effect the consumer decision making?

## 2. LITERATURE REVIEW

A lot of researches have been done with reference to the shelf space and perhaps the most well known research has been coming from the work of Corstjens and Doyle [8]. They have given a different dimension to the shelf space by given the cross space elasticity instead of price elasticity. Thus, the amount of space allocated to each product determines the demand for all products. The model proposed by them helps the retailer to increase their profits by giving maximum capacity to products in shelf space as consumers prefer those products to purchase which are readily available to them. With the continuation to this the existing shelves studies make focus on the product facing in one dimensional (width) only on shelf except for the model of Zufryden [9]. Another dimension which is given by the Drèze, Hoch, and Purk [1] stated that product demand at the time of purchase depends on the product's facing and aesthetic element of its displays like labeling and color of packaging. So these are the critical variables on deciding the extent of attention these products

achieved within store, thus giving the more weightage of shelf display decisions on the part of retailers. They argued that demand of a product is driven not only by the facing area but also the number of facing it has on shelf. Surveys of super markets showed that only one third of the shoppers coming to visit the store have planned shopping lists before coming to store [10]. FMCG products specifically food & beverage industry have low involvement and low risk level [11]. According to Urban and Timothy [12], 41% of brands selected out of store while 59% of the brands selected in store. The majorities of shoppers about 77% enter into the store without detailed shopping lists and most have rough mental lists. In food & beverages 72% do not make detail lists. Another interesting figure is that in food & beverages sector 29% of buyers purchase different products from the lists they have [12]. Retailers can also increase their sales through better shelf management by focusing on store specific merchandising plans, instead of having universal merchandising plans for all channels [13]. According to Borin *et al* [13] FMCG products are limited problem solving products and in such products buyers are not ready to search each and every alternative. So availability of the product at right place and in right space along with integrated messaging to trigger customer for purchase decision. As most of the purchase decisions take place during the shopping within store environment so the different issues like store displays, exposure to different stimuli inside the store and different arrangements taken by the store management to satisfying the needs of buyers should be considered [14] and this process is done within a short span of time [11]. So retailers are actively doing inputs in creating their store environment more attractive and soothing along with attractive product display in shelves in order to enhance the triggering to the impulses of buyers to purchase things on spot [15]. Thus marketers are using different techniques to enhance the power of unplanned purchase and creating the basis of huge profit for the retailers over time. So if the shelf spacing is attractive, catchy and enjoyable then it influences the purchasing decisions of buyers and gives them push to buy things without prior intentions and planning [16]. Thus we can now understand the importance of in store factors on purchase decisions. In all other factors impacting on purchase in store the most critical decision for a manufacturer is to invest money to hire/rental a shelf place and space. As it is also a critical factor for a retailer to rent out prime shelves to such products which are align with optimum use of space and shopper's perspective. So this research will be helpful both for manufacturer and retailers point of view. As FMCG products are low involvement products, so these products are more likely to be prone to selection as compared to other high involvement products [17]. In our effort to investigate the relationship of this variable on purchasing intention we have used observation, interview and shopper shadowing on selective super marts of Johar town, Hyper star and one Makro store.

### 2.1 Why Shelf Space matters?

Shelf space is one of the important ingredients in retail marketing. Its importance is increasing day by day on the account of shifting of consumer purchases from nominal street stores to Megastores. Now why there is a need to

address the issue of shelf space? Answer is quite simple by seeing the latest trends in the retailing industry. Today different products are competing with each other with respect to shelf space in order to create the visibility to the customers [18]. In turn customers are also selecting those products which are placed in front of their eyes and easily accessible [4]. Shelf space management technique is widely used by the retailer to increase their margin by giving different ways to consumer to indulge in on spot purchasing [4]. Recent studies show that consumer attention is the major element in the store that is useful in determining the purchase behavior [5]. This consumer attention is mainly due to the three aspects of shopping behavior. Cox [19] stated the first characteristic of consumer decision making. They argued that consumer information processing started when he viewed the product from down to top in front of shelf instead of viewing it from top to down. Dagnoli [10] argued, according to the different marketing surveys regarding the shopping behavior of shoppers, that 2/3 of purchases are planned inside the stores. Thomas and Schmidt [20] demonstrated the second characteristic. They argued that consumers made their decisions inside the store depending on the involvement with the product. They showed low involvement and minimal search with reference to in store decision making and also involved in comparing the prices of different products. These two researches show that by better displaying the products on the shelves, retailers can increase the selection percentage of their products. Third, Waller *et al* [21] argued that the number of visits to a particular store in a month or a week also makes a contribution in their decision making. It is because a typical consumer selects the store on the basis of environment of store, pricing of products and display of different products. Thus the basic goal for the retailer is to increase the chances of purchasing on every visit by giving them a better environment and good display of products. For instance, Mullin and Tracy [22] found the effect of background music and its relation with the pace of shopping inside the store. He showed that when there is a decrease in the tempo of background music; buyers are more likely to prolong their stay in the stores and in turn purchase more. Therefore retailers can increase the likelihood of purchase by slowing the tempo of background music. Apart from all the above aspects, retailers can increase the likelihood of purchase by giving the temporary and permanent well managed display of products. This is obvious in temporary arrangements that clear product displays with a novel setting attract the consumers and enhance the chances of more transactions. Instead of using temporary arrangements retailers can use permanent arrangements to increase attention by using prime location for product within shelf with unique facing and giving aesthetically good signage and color.

## 3. RESEARCH METHODOLOGY

### 3.1 Instrument, Sample and Data Collection

This was a qualitative type of research and structured feedback analysis used through cross tabulation technique for data analysis. Data was collected from 100 respondents in the form of interview. Convenient sampling was used to target the respondents. These respondents were approached at the

**Table 3.1 Ages of respondents**

Age	Frequency	Percent	Cumulative percent
<20	12	12	12
20-30	43	43	55
30-40	37	37	92
>40	8	8	100
Total	100	100	

**Table 3.2 Income distribution of respondents**

Monthly Income	Frequency	Percent	Cumulative percent
<15000	27	27	27
15000-30000	38	38	65
30000-45000	28	28	93
>45000	7	7	100
Total	100	100	

been divided into four groups containing 25 respondents each time when they completed their purchase so that authenticity of information should be received. These respondents have through quota sampling. The demographic details of respondents are reported below: Below table shows that there were 12 % respondents fall in the teen age’s category, while 43 % were in the category of 20-30 years.

37 % of the respondents were having age range of 30-40 years, while only 8% were more than 40 years old. Hence, we have almost 80 % of respondents fall in the age of 21-40 year .Above data show that 27% of respondents were having an income below 15,000 rupees, while 38% having income in the range of 15,000-30,000 rupees. 28% of respondent having income in the range of 30,000 rupees to 45,000 rupees and 7% were having more than 45,000 rupees. It means that our most respondents have monthly income in the range of 15,000-45,000 PKR. After making demographic analysis we used the observation technique to sort out the different attributes with shelf space and got the different dimensions related to shelf space in retail stores after visiting Hyper Star, Matero, Fresh Suburben, Rainbow, Duke and Duke, HKB. Following are the different dimensions related to shelf space have been observed:

1. Number of facing of products in shelf spaces
2. Vertical and horizontal display of products in shelf
3. The depth of product display in shelf
4. Product placement at eye or arm level

By keeping these dimensions in mind we have developed 4 open ended questions to know the influence of shelf space on buying behavior. We have reported data by asking these 4 questions:

- The greater number of products facing at shelf forces me to buy that product particular impulsively
- Vertical blocks displays of products are more attractive and catchy than horizontal displays.

- The depth of the display (more number of product placed afterwards front facing) create more impact than having only or two packs behind front facing
- Products placed at eye level have more chances to attract me than product placed above my head or below waist level

All the respondents were encouraged to give detail descriptions and answer to these questions. Approximately 5-6 lines were given to answer each question so that in depth content analysis would be conducted.

**4. DATA ANALYSIS**

The content analysis technique is used to analyze the written statements of the respondents. Four dimensions that have been collected through observation were also analyzed by using the technique of category reliability. The management staff of different retail stores has been used for this purpose and their comments were recorded against each dimension and gave proper wording to them after revision. These dimensions were also pretested on the sub sample of 25 respondents and after this these dimensions were further refined.

**4.1 Experiencing the Buying Intentions**

After getting the preliminary information, the respondents were asked to read the questions and remind the buying experience they have got a short while ago and gave the answers in detail. Although each question did not carry the detail descriptions, however we got the plenty of experiences that respondents had shared. On the basis of these responses every dimension has been analyzed with the age and sex of respondents in parenthesis as follows:

**4.2 Number of Product Facing**

Here number of product facing means that how many products of same type have placed on the shelf with same facing like brand name, logo or anything. Almost 31% percent of respondents agree that they feel urge to buy the products with 3 or more than 3 facing on shelf.

I saw the apple juice with apple facing in a line and I immediately go for it (male, 19)

I was in the grocery range and saw toothpaste placing with more than one facing and I came over it instantly (female, 29)

Most of the respondents said that they felt urge to buy the product when they come in contact with the visuals of products in a shelf. This type of urge usually came from the FMCG products that have low involvement while purchasing.

#### 4.3 Vertical and Horizontal Blocks Display of Products

Vertical display means the same brand is placed vertically from top to bottom in the shelves. While, horizontal display of products means that same product is placed horizontally in one shelf. This dimension is very critical as in major super stores the manufacturers have bought the shelf space to make the insertion of their products more prominent. Almost 24 percent of respondents agree that vertical displays have more impact than horizontal displays of products in shelves. This was tough for few of the respondents to answer this. Some of the respondents were of the view that:

I saw it and grasp it by noticing the beautiful display of product down ward (Female- 20years-describing the Jam)

I could not stop myself to purchase the product when I saw the whole shelf is occupied by it (male-20years-describing the after shave lotion)

When I saw it I couldn't go away without buying it. It compels me to buy it instantly. (Male, 25 years)

#### 4.4 Depth of Product Placement at Shelf

Above discussion shows the importance of product's front facing and how critical it is for FMCG products. This is like that, if we have 05 packs (Bottles, Cans, biscuits,) with brand name and logo facing towards customers stand alone in shelf. Now imagine if different products are placed in such a way that products are not stand alone at shelf but have same packs and brand in huge quantity behind front facings. This is what the depth of product displays. This is also important to ensure certain amount of products at shelf to avoid out of stocks. However this has a great impact in increasing product pick up ratio. 18 percent of our respondents are of the view that products in-depth display creates an impact over shopping. It has great impact when product has placed at eye or arm level. All these super markets used to calculate reasonable stocks for shelf to make in depth displays. However few of the respondent's views are reported below:

Such displays create great impact on us while looking at shelf (male, 32)

Increased number of products in displays always looked good (female, 27)

If only few bottles of shampoo placed on shelf it felt me like this product has not sold in good quantity daily (female, 19)

I will choose product, I have nothing to do with huge quantity of products (male, 26)

By observing the viewpoints of above mentioned respondents and other respondents it is quite clear that people are not very much bothered about the depth of product display in the shelf.

#### 4.5 Product Placed at Arm's Level

In supermarkets we have shelves, racks and gondolas for displaying of products usually they rarely placed product on the floor particularly in food and beverages sector. A shelf, rack, gondola can have the height ranges from 5feet to 8feet

with 10 inches to 36 inches depth or stacking place for products. Now efficient use of space is one of the key questions for retailers. In developed markets retailer calculate the space productivity and measure per meter space earnings. So they ensure the optimize use of their space. This optimization of space includes the decisions like which product should place at what height. For clear understanding of this concept we can divide rack/ shelf into three different heights.

- 1- Above 5 feet level, we call it above eye level considering the average height of people in Pakistan.
- 2- 3 to 5 feet, arms or eye level.
- 3- Below 3 feet, below waist level.

Now there are hundred SKU's for even one MNC like Nestle, Coke, and Unilever and even one brand has different pack sizes and there are many brands in one category. Retailers have to choose the most profitable pack or product which aligns with their strategy to place at best place or attractive place. Our respondent told the best place at which the pick the product. 27% of our respondents consider that arms level /eye level is most viewed and reach able shelf for them. 15% people were of the view that they search out the entire shelf thoroughly. However 3% of respondents were unable to understand this phenomenon. They were off the view, if we would in need of some product we will find it anywhere, so this concept is not valid. Surprisingly few of our respondents were even unable to recall the products placed below waist level, just after they passed through a certain shelf. Few of respondents said,

It is easier to buy from the shelf in front of my eyes (male, 22)

It does not matter to me; I like to see things in little detail and spend more time at shelf because I used to come once in 15 day for shopping (female, 39)

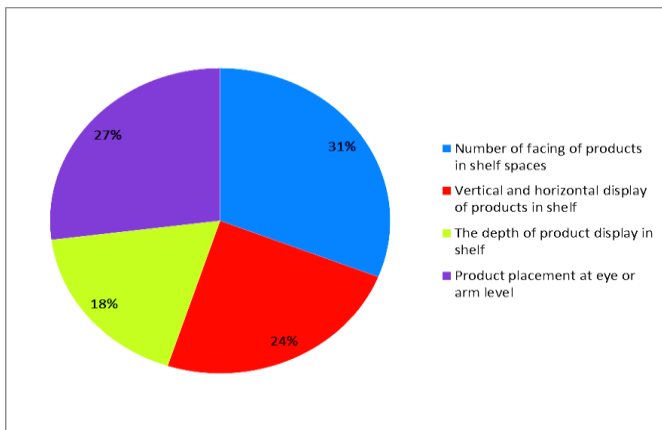
I don't want to waste my time so I notice the product at shelf which is in front of my eye and choose it (male, 20)

#### 4.6 Cross Tabulation

Through cross tabulation we have measured the actual contribution of each group regarding the responses against each dimension. We have divided respondents in 4 groups containing 25 respondents each. This is done to have good representation of data. Their responses show the different attitude of people regarding the product placement on shelves. Their responses show that 31% of respondents are of the view that product purchasing would be increased if they see the 2-3 number of facing of product in the shelf. While 24% are of the view that they mostly select product upon seeing the vertical or horizontal display of product on shelf. 18% prefer the product on seeing the large number of same product available on shelf. 27% respondents say that it is easy for them to select the product when they find that product at their arms reach or in front of eye. Among all the dimensions, major respondents in group D contribute more to the number of facing of products in shelf spaces, group B contribute more towards the dimension of horizontal and vertical placing of product in shelves, group C contribute more in dimension related to product depth in shelves and group A contribute more towards the dimension of product placement at arms and eye level.

**Table 4.1 showing Cross Tabulation effect of different dimensions of shelf placing on decision making**

	Group A	Group B	Group C	Group D	Total
Number of facing of products in shelf spaces	8	9	4	10	31
Vertical and horizontal display of products in shelf	6	9	5	4	24
The depth of product display in shelf	4	3	7	4	18
Product placement at eye or arm level	7	4	9	7	27
Total	25	25	25	25	100



**Fig 4.1 Showing graph of all the dimensions**

By seeing the view of these respondents and graph it is clear that number of facing of products in shelf space receive major weightage among all the dimensions and it show that product placement on shelf with front facing will have effect on product purchase.

**5. DISCUSSION AND CONCLUSION**

We conducted this research in super markets environment with the objectives to investigate the consumer decision making with reference to retail shelf in retail store. In food and beverages sector consumer make most of the brand/pack preference decision inside store. Consumers mostly favor those brands which are readily available at shelf. With reference to shelf space we explore different dimensions which are important to convince consumer for purchase decision. However, we have found the following four important dimensions which instigate consumers to pick product within shelf. These are:

1. If product have placed with minimum 3 front facing in shelf
2. Product placed at shelf at arm’s level
3. Vertical blocks displayed product in shelf create more attractive and catchy than horizontal.
4. Depth of product placing in shelf

Our first dimension has also proved by the work of Drèze, Hoch, and Purk [1] in which they argued that product with more than one facing create positive impact on purchase decision and second dimension has also proved by the work of Zufryden [9] in which he argued that people will like to select those products which are available in front of their eyes on shelves. While the third dimension has showed that people will likely to buy those products which are stacked from top to bottom in the shelf. Our fourth dimension depth of product displays in shelf has not shown relatively great impact on product purchase as most of the respondents had not been convinced by this argument that a healthy in-depth display can impact on their buying decisions. However it has significance for retailers to hold proper stocks all the time on shelf. They can make proper merchandising plans and avoid out of stocks in shelf. However we conclude this dimension that it has impacts on consumer decision making through giving a rich and color-full displays in bigger blocks.

Finally shelf space has a bigger impact on product purchase decision especially in food and beverages sector.

**5.1 Limitation and Future Research**

This research has limitations as it is very difficult to know the shelf space productivity i.e. how much return a company can get by investing on a prime shelf in terms of tangible sales and brand mileage. As such data is not provided by the retail management. Secondly, respondents were very reluctant to give data so we have made untiring effort to get the required response and reliable data from them. This study only views the impact of shelf space on decision making. While the other arrangements in the store like in store messaging, in store environment, and shelf placing may also affect the consumer’s decision making. So there is a need to conduct research by taking these variables in the future study. Moreover, this prompt decision making inside the store is one of the aspects of impulse buying. Therefore future research with respect to this concept would be undertaken to know the effect of these variables on impulse buying.

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