

RESEARCH ARTICLE

The Impact of Shelf Position on Impulse Buying Among Millennials

Aina Ross U. Tiu, Ma. Ysabela R. Hilario, Chelsea Micaella I. Ramos, Mario C. Angeles,
College of Commerce and Business Administration, University of Santo Tomas, España Boulevard, Sampaloc, Manila, Philippines

Abstract

One of the most crucial consumer behaviors needed to be well understood by the retailer is impulse buying. Customers at impulse are prone to buying beyond their shopping mission, which, in turn, may lead to an increase in sales of the store. This study presents the effects of shelf position in a supermarket on impulse buying among Filipino Millennials. It focuses on comparing the Filipino consumers' buying behavior based on their demographic characteristics and how relevant these are to impulse buying. The study led to the following outcomes: Horizontal and vertical shelf positions influence impulse buying. In addition, gender, civil status, and income do not have an effect between shelf position and impulse buying. Age, however, positively moderates the effect of horizontal shelf position and negatively moderates the effect of vertical shelf position on impulse buying. Educational attainment also positively moderates the effect of vertical shelf position on impulse buying. Thus, the influence of horizontal and vertical shelf position on impulse buying among Filipino Millennials is moderated to some extent by their demographic characteristics. The study used descriptive and inferential statistics covering the relationship between impulse buying, shelf position, and demographics through snowball sampling. The study has a sample size of 225.

Keywords: retailing, vertical shelf position, horizontal shelf position, impulse buying, Millennials, fast-moving consumer goods, supermarket

1. Introduction

Due to globalization and other trade agreements between markets and countries, many retailers can do business globally. Kantar Worldpanel (2017) reported that in Asia, a significant reduction in available shelf space is a constraint the retailer faces brought about by carrying some of the world's fastest-growing consumer brands. Some retailers have only half of the fast-moving consumer goods (FMCG) categories on their shelves to leverage the competition. At the same time, some offer a full range to drive a greater shopper frequency. These limitations in shelf space force retailers in Asia to think of various approaches to optimize the available shelf space.

Mordor Intelligence (2019) reported that multiple factors contribute to the continuous progression of the retail industry in the Philippines. For instance, retail markets are driven by the emerging middle-class consumers, the young consumer market base, rising income, and population growth. On the other

hand, consumption of FMCG products varies depending on the circumstances a country faces throughout the years. The Philippines is a disaster-prone country where sales performance changes over time. Statista (2021) reported that the FMCG sector experienced significant growth before the pandemic. Aside from products included in this sector being at a low cost and being sold in large quantities, its development is supported by the emerging middle-class consumers. Food has the highest market value, and instant noodles are the leading fast-moving consumer product based on value growth. Multinational companies offer smaller packed items, especially within haircare; the proliferation of this pack size is heightened by the Filipino “tingi” culture or small portioned items, which is common in developing countries like the Philippines (Kantar, 2017).

Knowing the relevance of the FMCG products in the country and seeing that every retailer is competitive in making sales, a product must be given enough shelf space to capture the buyer’s attention. Shelf space management is one of the crucial factors in winning an edge in the changing retail industry. However, as this industry grows more extensive and diversified, shelf-space-allocation and other cues become vital and challenging decisions for retailers (Kim & Moon, 2020). This study aims to explore the influence of shelf position on impulse buying. It intends to compare the views of consumers based on their demographic characteristics and if these affect their impulse buying. Moreover, it intends to determine what they think of shelf space positions and how these affect the way they buy the products.

This study examined the effects of shelf space on impulse buying among Filipino Millennials. It identifies shelf position that affects the consumers’ impulse buying. This study can aid the retailers in how strategically arranging products in their stores. It can also help the retailers minimize inventory levels, build strong customer relationships, and provide a higher customer shopping experience and satisfaction. Manufacturers can gain insights from this study about the best shelf positioning that could potentially maximize their sales growth at some level and secure their spot on the retail shelves. Consumers differ in terms of buying behavior and in making purchase decisions. This study will help brand owners and retailers understand how shelf position influences consumers’ impulse buying.

The study reveals that horizontal and vertical shelf positions have a significant positive effect on impulse buying. It indicates that an increase in the extent of the shelf positions leads to an increase in impulse buying. Additionally, gender, civil status, and income do not have an effect between shelf position and impulse buying. On the other hand, age positively moderates the effect of horizontal shelf position and negatively moderates the effect of vertical shelf position on impulse buying. While educational attainment positively moderates the effect of vertical shelf position on impulse buying.

2. Discussion

2.1. Shelf Position

Various studies have found that shelf position impacts the product’s possibility of being recognized. Shelf position is described in the study of Gidlöf et al. (2017) as the placement of the products on the shelf, which has a strong effect on visual attention. People will notice a product if it is bright and visible. The same has been discussed by Valenzuela and Raghubir (2015). They discovered that products’

position in a retail environment drives shoppers' attention.

Moreover, Düsterhöft et al. (2019) stated that shelf segments differ horizontally and vertically. Some are horizontal within the shelves, such as the beginning, middle, and end of an aisle. Some are vertical, from eye- to knee-levels of the shelves. Consequently, the visibility of the shelf segments to customers varies. These conclusions were also stressed by Drexler and Souček (2017) when they found a significant impact between shelf levels and consumer attention.

Customer decision-making is also influenced by shelf position, or the levels at which products are placed on the shelf, according to Abbas et al. (2015). Their study revealed that varied product arrangements on shelf space positively impact in-store purchase decisions. The same can be said about customer buying behavior (Behera & Mishra, 2017). Moreover, it is influenced by shelf position or, as described by Md. Faruqui and Hride (2019), the location on the shelf where the product is displayed. One possible reason for this is that consumers form conclusions about a brand based on how it is being placed on the shelf (Gidlöf et al., 2017).

According to Bialkova et al. (2019), shelf positioning is a crucial variable in the in-store environment, as it affects not just attention but also consumer choice. Valenzuela and Raghubir (2015) also stressed that consumers often use shelf positions to make inferences that influence their choice of products. Thus, they consider shelf positions as an information source. And while customers are said to derive meaning from shelf positions (horizontal and vertical), this previous study highlighted that brand managers should pay a premium for shelf space. At the same time, retailers should charge premiums for specific shelf positions.

H1. The horizontal shelf position of the product influences the impulse buying of the consumers.

2.1.1. Horizontal Shelf Position

A horizontal display refers to similar products placed horizontally on one shelf (Abbas et al., 2015). Deng et al. (2016) argued that consumers prefer this display type. It makes it easier for them to process the whole assortment since the binocular vision field matches the dominant direction of eye movements needed for processing this type of display. It enables consumers to scan the information more efficiently, which at the same time gives them the perception that this display carries a much wider variety. Hence, horizontal assortment displays are recommended to be used by retailers for product categories where variety is their strategic aspect. They can also use this display to make the variety stand out more to increase customers' purchased quantities.

Gidlöf et al. (2017), on the other hand, found that horizontal position has no consistent impact on visual attention. Its influence on visual attention varies depending on different shelves. Moreover, visual attention may differ when shelves carry the same product and various products (Ladeira et al., 2019). However, Drexler and Souček (2016) confirmed that placing products at the center of the shelf is essential, especially for men who pay the greatest attention to this part.

The study of Valenzuela and Raghubir (2015) revealed that horizontal shelf position affects

consumer choice. Among left, center, and right positions, the center was preferred. They also found this position to be informative, from which the consumers conclude price and quality. They discovered that lower-priced brands are on the left-side shelves while higher-priced brands are on the right-side shelves. Moreover, items on the left side are perceived as lower quality than the right-side shelves.

Furthermore, according to Nielsen (2020), shoppers look to the left first, then to the right for alternatives. Consequently, the small to large packs should be placed on the shelves from left to right. It also revealed that this approach could influence shoppers' perceptions of the products' affordability, leading them to consider purchasing a larger pack size.

H2. The vertical shelf position of the product influences the impulse buying of the consumers.

2.1.2. Vertical Shelf Position

Abbas et al. (2015) argued that when optimizing space, it is necessary to decide which product should be placed at what height. They divided the shelf into three different vertical levels to make this concept clearer. These are above the eye level (above five ft.), the arms or eye level (3–5 ft.), and below the waist level (below three ft.). And among these, they found out that consumers are likely to choose the products placed on the shelves at the arms or eye level. The common reason for this is that the eye level is easier to view and reach (Young et al., 2020).

Likewise, Drexler and Souček (2017) showed that vertical shelf levels also impact consumer attention. They proved that the eye level (4–5 ft.) shelf and the touch level (3–4 ft.) shelf receive the most attention from consumers. The stoop level (below three ft.), on the other hand, gets slightly less attention than the stretch level (above six ft.). It is essential to increase the attention from the bottom shelf in most categories.

Unlike the horizontal position, Gidlöf et al. (2017) discovered that the vertical position strongly influences the consumers' visual attention. Products were more likely to be looked at when placed on the middle shelf than at the lower and upper levels. Aside from its effect on consumers' sight, vertical shelf position also predicted consumer choice. The same study concluded that products of any given popularity and quality tend to be acquired if placed at the lower and upper levels than on the middle shelves.

Vertical shelf positions may also affect consumers' assessment of product characteristics, like price and quality. Lower-priced and low-quality brands are assumed to be placed on the bottom shelves. In contrast, the higher-priced brands and high quality are placed on top shelves (Valenzuela & Raghubir, 2015). This notion was also supported by Otterbring et al. (2019). They claimed that consumers tend to move their gaze on the shelves upwards no matter what product they are looking for. However, they turn their eyes downwards faster if they are asked to look for cheaper products than expensive ones.

Finally, the bottom shelf has more depth and can carry more units than the rest of the vertical shelf positions. Because of this, small pack size products should be placed on the top shelf, while large pack size products should be placed at the bottom (Nielsen, 2020). Additionally, large and heavy products are

on the lower level, whereas small and light ones are on the upper level (Andrada et al., 2020; Hübner et al., 2021).

2.2. Impulse Buying

The retail industry has been meeting new challenges in the last few decades. According to Bianchi-Aguiar et al. (2020), the in-store factors that positively impact product visibility and awareness highly influence customer demand while shopping. It is crucial to understand consumer behavior due to its complexity. Many attempts have been made to understand the various consumer behaviors further. One of which is the study of Husnain et al. (2019), where they stressed that impulse buying is a crucial factor in increasing sales in retail.

Impulse buying is defined by Hussain and Siddiqui (2019) as a concept of unplanned purchase without considering its consequences. And this spontaneous purchase is found to be affected by different factors. Husnain et al. (2019) argued these factors include store environment, sales promotions, time availability, friendly employees, and family influence. Tirtayasa et al. (2020) also found that impulse buying is significantly influenced by hedonic shopping motivation. This was also proven by Saad and Metawie (2015). They stressed that consumers exhibiting excitement were likely to show a positive hedonic attitude, and a positive attitude would stimulate impulse buying behavior. Hussain et al. (2021) also argued that impulse buying improves the state of our minds. They suggested that in uplifting them from bad moods, people sometimes value themselves by giving themselves a gift that they deserve. They even stressed that people give in to impulse buying if they believe it would make them feel better.

Previous studies discussed other factors that affect impulse buying. Wijaya et al. (2020) revealed that shelf space and display influence consumers' impulse purchases. They can be increased due to the neatness, blocking space, and attractiveness of the display arrangement. However, too much design packaging or promotion is sometimes ignored (Drexler and Souček, 2016). This is the reason why retailers should carefully analyze how to place their products on the shelves. Nishanov and Ahunjonov (2016) also highlighted this when they found out that the height of shelves or the visibility of products can stimulate the impulsive behavior of consumers.

Additionally, hypermarkets design attractive shelf displays since they can change the purchase plan of the consumers (Wijaya et al., 2020). Moreover, Xiao and Yang (2016) discovered that the more space is given to a product whose needs are sensitive to space and type of goods, the more it may attract customers and increase sales. Hence, it is the retailer's advantage to enhance the shelf space to increase the visibility of products that can promote impulse buys (Flamand et al., 2016).

2.3. Demographics

Several studies have identified several elements that influence consumer behavior, and they differ depending on the individual. Gender, sex, age, income, and educational background are all elements that can influence consumer behavior. Various studies have concluded that demographics positively affect consumers' impulse buying. For instance, Ugbonhe and Adomokhai (2021) stated that consumer impulse buying behavior appears to have a significant simultaneous link with demographic factors. Depending on

the demographic factors, impulse buying may alter due to its broad scope (Desai, 2018). Mohiuddin & Iqbal (2018) argued that impulse buying is associated with emotions, making it difficult to resist. When developing strategies, marketers who consider the nature of the relationship between demographic variables (age, gender, income, and education) and impulse buying can significantly increase business sales and profitability.

H3. Age moderates the effect of horizontal shelf position on the impulse buying of Millennials.

H4. Age moderates the effect of vertical shelf position on the impulse buying of Millennials.

2.3.1. Age and Impulse Buying

Various studies discovered a link between age and impulse purchases. Between the ages of 19 and 39, there is an increase in impulse buying, which declines at 50 and over (Akyuz, 2018). On the other hand, Awan and Abbas (2015) stressed that young consumers are more impulsive than older consumers because current trends and lifestyles easily influence young consumers. They are more likely to spend more impulsively. Specifically, Generation Y or Millennials are known to be a “combination of pure and suggest impulsive buying, which indicate a visualized need and desire condition of the generation’s impulsiveness” (Aumentado et al., 2017).

H5. Gender moderates the effect of horizontal shelf position on the impulse buying of Millennials.

H6. Gender moderates the effect of vertical shelf position on the impulse buying of Millennials.

2.3.2. Gender and Impulse Buying

There are various studies surrounding gender and impulse buying. Gender has a remarkable association with impulse buying (Awan & Abbas, 2015). For instance, Mohiuddin and Iqbal (2018) argued that females have considered emotional decision-makers and are reckless when deciding on products in shops. Thus, females are found to be more engaged in impulse buying (Mohiuddin & Iqbal, 2018; Desai, 2018; Akyuz, 2018; Khan et al., 2016). Conversely, Awan and Abbas (2015) argued that males show more impulsive behavior because females are cautious and make most of their buying plans. In comparison, males have money to make unplanned purchase decisions. On the other hand, Chaudhuri et al. (2021) stressed that males and females have similar opinions on impulse buying. Therefore, it is crucial to assess gender in terms of impulse buying as various studies show different results.

H7. Civil status moderates the effect of horizontal shelf position on the impulse buying of Millennials.

H8. Civil status moderates the effect of vertical shelf position on the impulse buying of the Millennials.

2.3.3. Civil Status and Impulse Buying

Civil status has been a contributing factor to impulse buying too. Dash et al. (2019) found that both engaged/married people and singles are impulse purchasers. However, engaged/married people have a significantly higher percentage of impulse purchasers. This notion is also supported by Sangalang et al. (2017), that married people tend to buy more impulsively. Conversely, Geetha and Bharadhwaaj (2016) found that a single person with fewer responsibilities than most married people is more likely to purchase

without reluctance. Those married people have duties and responsibilities as parents, which would restrain their available funds.

H9. Income moderates the effect of horizontal shelf position on the impulse buying of Millennials.

H10. Income moderates the effect of vertical shelf position on the impulse buying of Millennials.

2.3.4. Income and Impulse Buying

The amount of money a buyer has influences whether they will buy impulsively or within their economic level. There are various income levels where consumers' choices differ to each income level and buying pattern (Desai, 2018). Consumers with higher income tend to purchase more impulsively (Awan & Abbas, 2015; Mohiuddin & Iqbal, 2018). Sangalang et al. (2017) argued that Filipino consumers with a net monthly income of P 10,001 to P15,000 tend to act impulsively when purchasing. Moreover, the more money consumers allocate for their shopping, the more they make impulsive purchases (Aumentado et al. 2017).

H11. Educational attainment moderates the effect of horizontal shelf position on the impulse buying of Millennials.

H12. Educational attainment moderates the effect of vertical shelf position on the impulse buying of Millennials.

2.3.5. Education Attainment and Impulse Buying

Various studies discovered a strong link between education and impulse purchase behavior. Consumers with high qualifications are more inclined to have high impulsive behavior than those with low qualifications (Akyuz, 2018; Awan & Abbas, 2015). Ekeng et al. (2012) even stressed that higher educated customers are more exposed and positioned in a higher social class. As a result, they are more persuaded by fancy things due to their purchasing power than those with lesser or no qualifications and lower salary grades. Conversely, Mohiuddin & Iqbal (2018) argued that less educated people show more impulsive buying behavior. Desai (2018) even stressed that educated people who know the importance of frugality only buy products according to their needs.

2.4. Research Method

The study used descriptive correlational analysis to determine the moderating effect of the demographic characteristics of the respondents between the shelf space position and impulse buying and to understand the influence of horizontal and vertical shelf space position on the consumers' impulse buying. The survey results have sought to describe the characteristics and behaviors of the respondents' impulse buying due to shelf position. A descriptive correlational analysis was used where researchers asked a set of questions to the respondents, analyzed how one variable impacts the other and what changes are eventually observed.

2.5. Subjects and Study Site

The study has a total sample size of 225 respondents composed of Millennials, ages 25 to 40, who visit a supermarket frequently. All respondents are from the National Capital Region (NCR), Philippines. The cities include Quezon City, Manila, Caloocan, Makati, Parañaque, Valenzuela, Pasig, Las Piñas, Pasay, Muntinlupa, Mandaluyong, Taguig, Marikina, Malabon, Navotas, and San Juan. NCR is not only the most populous; it is the center of the culture and economy of the Philippines. It is also composed of thriving cities known as its prime business and commercial centers.

2.6. Research Instrument

Survey questionnaires for 225 Millennial respondents were utilized in gathering the data. The instrument was divided into two sections. The first section consists of the screening questions regarding the respondents' age, where they currently reside, and whether they regularly shop in a supermarket. The second part of the survey is the main questionnaire consisting of demographic profiles such as age, gender, civil status, income, and educational attainment and a 6-point Likert scale crafted item pertaining to shelf position (horizontal and vertical position) and impulse buying. The researchers consulted field experts and an academician for the content and validity evaluation of the questionnaire. The instrument was also checked with the use of Cronbach's Alpha to measure the consistency of the future results. A pilot survey was then conducted on 25 respondents.

2.7. Data Gathering Procedures

The study utilized a descriptive-correlational approach to describe the effect of shelf space position on the impulse buying of Millennials. The causal relationship aims to explain how each independent variable influences Millennials' impulse buying. The researchers were guided scientifically to verify the stated hypotheses. A snowball sampling was used in this study to gather the required number of respondents with a sample size of 225 respondents. The respondents must meet the inclusion criteria of this study: First, they must be Millennials, whose ages are between 25 and 40. Millennials are the target demographic because they are the group that goes to the grocery store most often and spends the most money (FMI, 2020). Second, they must be household consumers who often shop/go to a supermarket. Actual shoppers were not included to avoid a decided shopper perspective. Lastly, the respondents must be from the National Capital Region (NCR) as the last criterion. Furthermore, because the instrument was created by the researchers, it was subjected to face and content validity tests. There were one academician and four field experts for the validity test who examined and evaluated the survey questionnaire. After being validated, a pilot test was done for the reliability of the instrument with a total of 25 participants.

2.8. Data Analysis

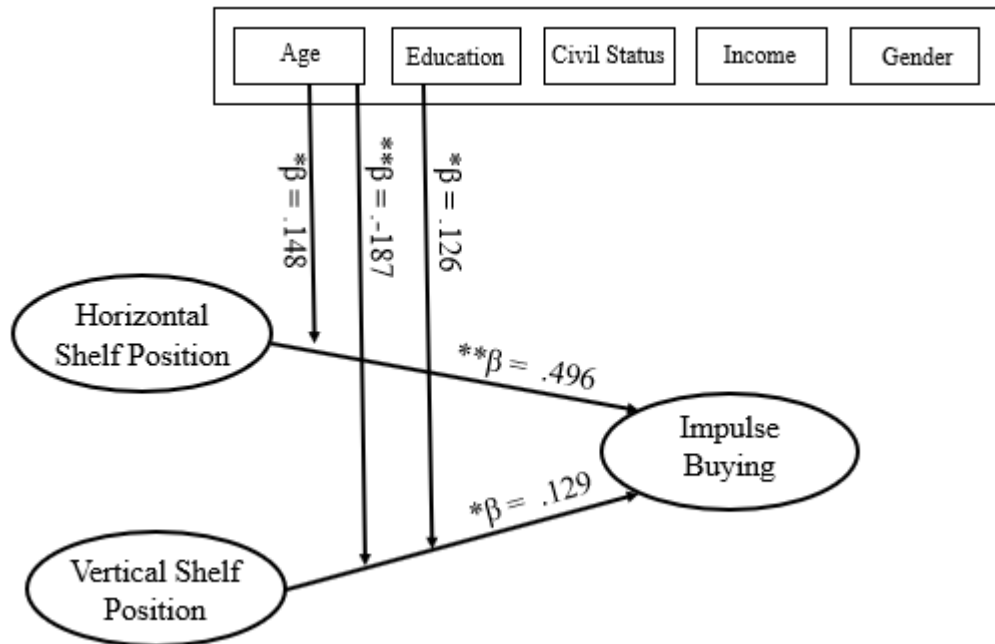
In analyzing the data, descriptive and inferential statistics were utilized, and in analyzing the demographic profile of the respondents', frequency and percentage count were used. On the other hand, the researchers also used the mean and standard deviation in examining the level of agreement of the respondents pertaining to Shelf Position, Demographics, and Impulse Buying. The statistical tool used to test the hypotheses is the Partial Least Square-Structural Equation Modelling (PLS-SEM). Specifically,

PLS-SEM was utilized to examine whether shelf position significantly affects impulse buying. Moreover, it is found that PLS-SEM is particularly useful for modeling structural equations used in studies with an inadequate number of respondents (Wong, 2013). Moreover, PLS-SEM has become a common method for analyzing complex path models with latent variables (Sarstedt et, al. 2017).

3. Results

Figure 1

The Emerging Model



This study was intended to test the hypothesized model that shows the moderating role of age, gender, civil status, income, and educational attainment on the causal relationship of horizontal and vertical shelf position on impulse buying, as shown in Figure 1. Structural equation analysis of the hypothesized model resulted in the rejection of the moderating role of gender, civil status, and income as revealed by the p-values of the path, which are greater than 0.05. It indicates that gender, civil status, and income do not have an interacting effect on the relationship between shelf position and impulse buying of respondents. However, age positively moderates the effect of a horizontal shelf position ($\beta = .148$, $p = 0.012$) on impulse buying (H3). It indicates that the impact of horizontal shelf position on the impulse buying of older customers is stronger than that of younger customers. Similarly, age was significantly moderating the effect of a vertical shelf position ($\beta = -0.187$, $p = 0.002$) on the impulse buying of respondents (H4) but in a negative manner. It implies that the effect of vertical shelf position on the impulse buying of older customers is weaker than that of younger customers. Furthermore, the emerging model revealed that educational attainment was positively moderating the effect of a vertical shelf position ($\beta = .126$, $p = 0.027$) on impulse buying (H12). It indicates that the impact of vertical shelf position on the impulse buying of highly educated customers is stronger than the customers with lower educational attainment. Thus, the emerging model supported the role of the study's 2 out of 5 moderating variables.

Table 1**Result of Hypotheses Test**

Hypothesis	Exogenous Variable	Endogenous Variable	Moderating Variable	Path Coefficients (β)	P - values	Effect Sizes (f^2)	Effect Size Interpretation (Cohen, 1988)**	Description	Decision
H1:	Horizontal Shelf Position	→ Impulse Buying		0.496	< 0.001	0.290	Medium	Significant	Accept H1
H2:	Vertical Shelf Position	→ Impulse Buying		0.129	0.025	0.060	Small	Significant	Accept H2
H3:	Horizontal Shelf Position	→ Impulse Buying	Age	0.148	0.012	0.290	Medium	Significant	Accept H3
H4:	Vertical Shelf Position	→ Impulse Buying	Age	-0.187	0.002	0.065	Small	Significant	Accept H4
H5:	Horizontal Shelf Position	→ Impulse Buying	Gender	-0.036	0.295	0.013	NA	Not Significant	Reject H5
H6:	Vertical Shelf Position	→ Impulse Buying	Gender	0.010	0.443	0.003	NA	Not Significant	Reject H6
H7:	Horizontal Shelf Position	→ Impulse Buying	Civil Status	-0.015	0.410	0.003	NA	Not Significant	Reject H7
H8:	Vertical Shelf Position	→ Impulse Buying	Civil Status	-0.050	0.227	0.011	NA	Not Significant	Reject H8
H9:	Horizontal Shelf Position	→ Impulse Buying	Income	-0.036	0.293	0.003	NA	Not Significant	Reject H9
H10:	Vertical Shelf Position	→ Impulse Buying	Income	0.086	0.094	0.008	NA	Not Significant	Reject H10
H11:	Horizontal Shelf Position	→ Impulse Buying	Educational Attain	0.069	0.149	0.006	NA	Not Significant	Reject H11
H12:	Vertical Shelf Position	→ Impulse Buying	Educational Attain	0.126	0.027	0.020	Small	Significant	Accept H12

Note: **0.02 – small, 0.15 – medium, 0.36 – large

The given result of the Table 1 study stated that horizontal shelf position has a significant positive effect on impulse buying. As argued by Deng et al. (2016), horizontal shelf position is a display type that is preferred by consumers for an easier assortment process. The result also showed that the center of the shelf is more favored than the left and right sides. Relatively, consumer choice can be affected by horizontal shelf position and found that the preferred and essential position is at the center as this position allows consumers to quickly identify information in terms of concluding the price and quality of a product (Valenzuela & Raghurir, 2015; Drexler & Souček, 2016; Deng et al., 2016). Therefore, the center of the shelf is considered to be beneficial and ideal for brands in inducing impulse buying.

Since vertical shelf position has a significant positive effect on impulse buying, the more consumers see it, the more they tend to make an impulse buy. Congruent to this was Faruqui and Hride's study (2019), when they proved that vertical shelf position contributes to purchase behavior by 34%. But this study discovered a 6% influence, particularly on impulse buying. Consumers also believe that they are more inclined to glance at, pay more attention to, and choose items on the eye level of the shelf, which is consistent with previous studies (Abbas et al., 2015; Drexler & Souček, 2017; Gidlöf et al., 2017). In line with this, products should be placed at the eye-level shelf to encourage them to buy on impulse.

The findings of this study suggest that age positively moderates the effect of horizontal shelf position on impulse buying. This indicates that older consumers are more inclined to buy impulsively in this type of shelf position. The result contradicts the study of Akyuz (2018), which revealed that younger consumers aged below 39 are inclined to impulse purchases. This is due to Generation Y or Millennials, considered a combination of suggestion and pure impulse buyers since their impulsiveness is conditioned by desire and visualized need (Aumentado, 2017). On the other hand, the result also suggests that age significantly moderates vertical shelf position negatively. Older consumers are not inclined to impulse

buy in a vertical shelf position. This is similar to the study of Awan and Abbas (2015), that young consumers buy on impulse due to trends or fads regardless of shelf position.

Moreover, the findings regarding gender indicate that it has no significant effect between two shelf positions: horizontal and vertical shelf position and impulse buying. This is similar to the previous study of Chaudhuri et al. (2021) which indicates that gender does not play a big role in predicting impulse purchases. This is taken into account that females are emotional decision-makers (Mohiuddin & Iqbal, 2018). Conversely, Awan and Abbas (2015) argued that females are more likely to buy impulsively and tend to be cautious buyers. On the other hand, males are found to be more impulse buyers as they are financially capable of doing so.

Civil status does not moderate the effect of horizontal and vertical shelf positions on impulse buying. It shows that consumers, whether single, married, separated, or widowed, are not driven to make an impulse purchase on the products they first see on the shelves. This is contrary to the study of Geetha and Bharadhwaaj (2016) that a single person is more likely to purchase without reluctance than most married as it has fewer responsibilities. The same can be said on income which does not moderate the effect of horizontal and vertical shelf positions on impulse buying. Thus, no matter how high or low consumers' incomes are, they are not likely to buy a product on impulse regardless of shelf position. This finding contradicts the previous studies of Awan and Abbas (2015) and Mohiuddin and Iqbal (2018) that consumers with higher income are more inclined to buy impulsively.

There is no effect in terms of horizontal shelf position on the impulse buying of Millennials in educational attainment. This is contrary to the studies of Desai (2018) and Mohiuddin and Iqbal (2018), who claimed that educated people who understand the value of money buy items they require. While educational attainment positively moderates the effect of vertical shelf position on impulse buying of Millennials. It implies that the effect of vertical shelf position on impulse buying of Millennials with higher education attainment is stronger than those with lower educational attainment. This result is similar to the studies of Drexler and Souček (2017) and Gidlöf et al. (2017), where they described that the vertical position strongly influences the consumers' visual attention. This is also true in the studies of Akyuz (2018), Awan and Abbas (2015), and Ekeng et al. (2012), which shows that customers with higher education are more likely to engage in impulsive behavior because they are exposed to a higher social class getting more purchasing power. As a result, they are more easily convinced to buy more items than individuals with lower or no qualifications and lower-wage classes.

4. Conclusion

This provides insights on how the retailers and marketers should deal with various demographic profiles inside the store and their relevance to the buying behavior. The importance of shelf position is crucial in influencing the consumers to buy. Whether horizontal or vertical, the shelf position can be part of the firm's retail strategy in creating buying on impulse among certain age groups, such as the Millennials. Moreover, another demographic segment must be given importance in the retail strategy, such as educational attainment. Educational attainment affects the level of buying. Since educational attainment increases the level of salary and social status of a person, the higher the education, the higher the

probability of buying more. However, in developing a retail strategy related to shelf position, one must be cautious because such a strategy may not be applicable to all categories inside the store. Moreover, marketers and retailers must also consider other retail store elements affecting consumer buying behavior. The shelf position may somehow help create or intensify impulse buying to some extent in some demographic segments. Nevertheless, there are various factors why they buy on impulse. Considering these factors, together with shelf positioning, may increase some level of impulse buying and, consequently, increase sales.

5. Recommendations

This research study remains valuable as it is the first to contextualize the foreign literature on shelf space and impulse buying behavior in the country. It helps prove whether the theories also apply to the Philippine setting. This study also aids the retailers in coming up with effective shelf management plans to capture the consumers' way of shopping and their personality in front of store shelves. Relationships between manufacturers and retailers are frequently regarded as a key factor in product distribution. Both must create attractive shelf positions that can draw buyers' attention, increasing their likelihood of buying on impulse. Retailers should also constantly coordinate with their manufacturers to monitor real-time inventory and produce and deliver products on time so shoppers can easily find their products inside the store. Retailers could also give manufacturers their preferred shelf position in exchange for promotional activities exclusively for their store. In addition, age and educational attainment moderate the effect of shelf positions on the impulse behavior of consumers. Manufacturers can use these findings to increase their market share by focusing on these demographic aspects and adjusting their strategies accordingly. When manufacturers and retailers have a seamless relationship and shoppers are satisfied with their services, both will benefit each other, increasing their sales volume and profits, respectively.

There are several limitations to the study. Future researchers may include other variables, such as the influence of sales personnel, time of engagement, the atmospherics, promotions, and other retail elements in the store, because this study only focuses on some demographic variables due to broad consumer behavior variables. The researchers also recommend studying other generations because this study is only limited to Millennials. Lastly, this study focuses only on the National Capital Region (NCR). The researchers recommend conducting a study in other regions so that comparisons on the behavior of consumers can be made.

References

- [1] Abbas, A., Imam, A., & Alvi, A. (2015). Effect of shelf space optimization on consumer decision-making. *Sci.Int.(Lahore)*, 27(1), 439-444. <https://ssrn.com/abstract=2937172>
- [2] Akyuz, A. (2018). Determinant factors influencing impulse buying behavior of Turkish customers in supermarket setting. *International Journal of Research in Business and Social Science*, 7(1), 1-10. <https://doi.org/10.20525/ijrbs.v7i1.839>
- [3] Andrada, M.F., Prudenciano, H.L., & Reyes, J. (2020). Layout design model for independent grocery stores in the Philippines. *Proceedings of the International Conference on Industrial*

- Engineering and Operations Management*, 1719–1731.
<http://www.ieomsociety.org/ieom2020/papers/272.pdf>
- [4] Aumentado, F., Siochi, J., & Domingo, L.M. (2017). Factors influencing consumers' impulse buying behavior in the fifth district of Cavite. *De La Salle University Research Congress 2017*. <https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2017/EBM/EBM-II-019.pdf>
- [5] Awan, A. & Abbas, N. (2015). Impact of demographic factors on impulse buying behavior of consumers in Multan-Pakistan. *European Journal of Business and Management*, 7(22). <https://doi.org/10.24018/ejbmr.2020.5.3.355>
- [6] Behera, M. P., & Mishra, V. (2017). Impact of store location and layout on consumer purchase behavior in organized retail. *Anvesha*, 10(1), 10–21. <http://0-search.ebscohost.com.ustlib.ust.edu.ph/login.aspx?direct=true&db=bsu&AN=126213487&site=ehost-live>
- [7] Bialkova, S., Grunert, K., & Trijp, H. (2019). From desktop to supermarket shelf: Eye-tracking exploration on consumer attention and choice. *Food Quality and Preference*, 81, 103839. <https://doi.org/10.1016/j.foodqual.2019.103839>
- [8] Bianchi-Aguiar, T., Hübner, A., Carravilla, M., & Oliveira, J. (2021). Retail shelf space planning problems: A comprehensive review and classification framework. *European Journal of Operational Research*, 289(1), 1-16. ISSN 0377-2217. <https://doi.org/10.1016/j.ejor.2020.06.018>
- [9] Chaudhuri, D., Kumar, A., & Bhardwaj, A. (2021). The Impact of demographics on the impulse buying behaviour with respect to the purchase of grocery products. *International Journal of Electrical Engineering and Technology (IJEET)*, 12(8), 158-166. <https://doi.org/10.34218/IJEET.12.8.2021.014>
- [10] Dash, M., Sharma, K., Bose, A., & Lakhani, A. (2019). Impulse purchase and impulse non-purchase in book & stationery retail outlets in shopping malls. *International Journal of Marketing and Business Communication*, 7(1). <http://www.publishingindia.com/ijmbc/49/impulse-purchase-and-impulse-non-purchase-in-book-and-stationery-retail-outlets-in-shopping-malls/688/4811/>
- [11] Deng, X., Khan, B., Unnava, H.R., & Lee, H. (2016). A “wide” variety: Effects of horizontal versus vertical display on assortment processing, perceived variety, and choice. *Journal of Marketing Research*, 53(5), 682-689. <https://doi.org/10.1509/jmr.13.0151>
- [12] Desai, A. (2018). Impulse buying – demographic aspect. *Journal of Management Research and Analysis*, 5(3), 236-238. <https://doi.org/10.18231/2394-2770.2018.0037>

- [13] Drexler D., & Souček, M. (2016). The influence of sweet positioning on shelves on consumer perception. *Food Packaging and Shelf Life*, 10, 34-45. <https://doi.org/10.1016/j.fpsl.2016.09.001>
- [14] Drexler, D., & Souček, M. (2017). The Level of shelves and space solution as one of the key factors for consumer attention. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 65(5), 1679–1686. <https://doi.org/10.11118/actaun201765051679>
- [15] Düsterhöft T., Hübner, A., & Schaal, K. (2019). A practical approach to the shelf-space allocation and replenishment problem with heterogeneously sized shelves. *European Journal of Operational Research*, 282(1), 252-266. <https://doi.org/10.1016/j.ejor.2019.09.012>
- [16] Ekeng, A.B., Lifu, F.L., & Asinya, F.B. (2012). Effect of demographic characteristics on consumer impulse buying among consumers of Calabar municipality, cross river state. *Academic Research International*, 3(2), 568-574. [http://www.savap.org.pk/journals/ARInt./Vol.3\(2\)/2012\(3.2-71\).pdf](http://www.savap.org.pk/journals/ARInt./Vol.3(2)/2012(3.2-71).pdf)
- [17] Flamand, T., Ghoneim, A., & Maddah, B. (2016). Promoting impulse buying by allocating retail shelf space to grouped product categories. *Journal of the Operational Research Society*, 67(7), 953-969. 10.1057/jors.2015.120
- [18] FMI. (2020). The grocery shopping habits of gen z and millennials. Retrieved from <https://www.fmi.org/forms/store/ProductFormPublic/the-grocery-shopping-habits-of-gen-z-and-millennials>
- [19] Geetha, M. & Bharadhwaaj, S. (2016). Impulse buying behavior in India - An overview. *Asian Journal of Business Research*, 6(1). <http://dx.doi.org/10.14707/ajbr.160021>
- [20] Gidlöf, K., Anikin, A., Lingonblad, M., & Wallin, A. (2017). Looking is buying. How visual attention and choice are affected by consumer preferences and properties of the supermarket shelf. *Appetite*, 116, 29–38. <https://doi.org/10.1016/j.appet.2017.04.020>
- [21] Hübner, A., Düsterhöft, T., & Ostermeier, M. (2021). Shelf space dimensioning and product allocation in retail stores. *European Journal of Operational Research*, 292(1), 155-171. <https://doi.org/10.1016/j.ejor.2020.10.030>
- [22] Husnain, M., Rehman, B., & Syed, F. (2019). Personal and in-store factors influencing impulse buying behavior among generation y consumers of small cities. *Business Perspectives and Research*, 7(1), 92-107. <https://doi.org/10.1177/2278533718800625>
- [24] Hussain, A., Khan, T., & Khan, S. (2021). Effect of store environmental and individual factors on impulse buying behaviour of Pakistani consumers. *Sjesr*, 4(1), 416-430. <https://doi.org/10.36902/sjesr-vol4-iss1-2021>
- [25] Kantar Worldpanel. (2017). Asia brand power. <https://www.kantarworldpanel.com/ph/news/asia-brand-power-2017>

- [26] Khan, N., Hui, L., Chen, T. B., & Hoe, H. Y. (2016). Impulse buying behaviour of generation y in fashion retail. *International Journal of Business and Management*, 11(1). <http://dx.doi.org/10.5539/ijbm.v11n1p144>
- [27] Kim, G & Moon, I. (2020). Integrated planning for product selection, shelf-space allocation, and replenishment decision with elasticity and positioning effects. *Journal of Retailing and Consumer Services*, 58, 102274. <https://doi.org/10.1016/j.jretconser.2020.102274>.
- [28] Ladeira, W., Santini, F.d.O, & Jardim, W.C. (2019). Gaze behaviour in front-of-shelf orientation. *International Journal of Retail & Distribution Management*, 48(2), 186-206. <https://doi.org/10.1108/IJRDM-04-2019-0128>
- [29] Md. Faruqui, F., & Hride, F.S., (2019). Influence of shelf space arrangement on buying behavior. *International Journal of Business and Social Research*, LAR Center Press, 9(3), 52-60. <http://dx.doi.org/10.18533/ijbsr.v9i4.1173>
- [30] Mohiuddin, Z. & Iqbal, H. (2018). Relationship of demographic factors and impulse buying behavior of customers in Pakistan. *Journal of Marketing and Consumer Research*, 46. <https://doi.org/10.24018/ejbmr.2020.5.3.355>
- [31] Mordor Intelligence. (2019). Retail industry in Philippines - Major trends, growth, and opportunities (2020 - 2025). <https://www.mordorintelligence.com/industry-reports/retail-industry-in-philippines>
- [32] Nielsen (2020). The smart shelf: Your pathway to winning in retail. <https://www.nielsen.com/wp-content/uploads/sites/3/2020/01/the-smart-shelf.pdf>
- [33] Nishanov, B., & Ahunjonov, U. (2016). The influence of store characteristics on consumers' impulse buying behaviour. *Journal of international business research and marketing*, 1(3), 20-26. <http://dx.doi.org/10.18775/jibrm.1849-8558.2015.13.3002>
- [34] Otterbring, T., Wästlund, E., & Shams, P. (2019). Spotlighting customers' visual attention at the stock, shelf, and store levels with the 3S model. *Journal of Visualized Experiments : JoVE*, 147. <https://doi.org/10.3791/58846>
- [35] Saad, M., & Metawie, M. (2015). Store environment, personality factors and impulse buying behavior in Egypt: The mediating roles of shop enjoyment and impulse buying tendencies. *Journal of Business and Management Sciences*, 3(2), 69-77. doi.org/10.12691/jbms-3-2-3
- [36] Sangalang, R.A., Siochi, J., & Plaza, M. (2017). Factors influencing consumers' impulse buying behavior in the fifth district of Cavite. *De La Salle University Research Congress 2017*. <https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2017/EBM/EBM-I-005.pdf>
- [37] Sarstedt, M., Ringle, C., & Hair, J. (2017). Partial least squares structural equation modeling. https://doi.org/10.1007/978-3-319-05542-8_15-1

- [38] Statista Research Development. (2021). FMCG market in the Philippines - statistics & facts. Retrieved from <https://www.statista.com/topics/7514/fmcg-market-in-the-philippines/>
- [39] Wijaya, B., Shihab, M., Wijaya, S., & Rudianto, D. (2020). In-store brand communication: When shelf-space and display seduce consumers. *Humanities & Social Sciences Reviews*, 8(4), 984-998. <https://doi.org/10.18510/hssr.2020.8495>
- [40] Tirtayasa, S., Nevianda, M., & Syahrial, H. (2020). The effect of hedonic shopping motivation, shopping lifestyle and fashion involvement with impulse buying. *International Journal of Business Economics (IJBE)*, 2(1), 18-28. <https://doi.org/10.30596/ijbe.v2i1.5715>
- [41] Ugbonmhe, O., & Adomokhai, S. (2021), Effects of demographic factors on impulse buying behaviour of consumers in Auchi, Edo State, Nigeria. *In: Economics and Business Quarterly Reviews*, 4(2), 120-133. <https://ssrn.com/abstract=3851601>
- [42] Valenzuela, A., & Raghubir, P. (2015). Are consumers aware of top-bottom but not of left-right inferences? Implications for shelf space positions. *Journal of Experimental Psychology: Applied*, 21(3), 224–241. <https://doi.org/10.1037/xap0000055>
- [43] Wong, K. (2013). Partial least square structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*. 24(1), 1-32.
- [44] Xiao, Y., & Yang, S. (2016). The retail chain design for perishable food: The case of price strategy and shelf space allocation. *Sustainability*, 9(1), 12. <https://doi.org/10.3390/su9010012>
- [45] Young, L., Rosin, M., Jiang, Y., Grey, J., Vandevijvere, S., Waterlander, W., & Mhurchu, C.L. (2020). The effect of a shelf placement intervention on sales of healthier and less healthy breakfast cereals in supermarkets: A co-designed pilot study. *Social Science & Medicine*, 266, 113337, ISSN 0277-9536, <https://doi.org/10.1016/j.socscimed.2020.113337>