"How can I choose when there are all these options?": Effects of variety and assortment size on choice overload

ABSTRACT

In retailing contexts, companies usually offer consumers a wide variety of options so that they can choose the one that fits best their needs. Nevertheless, is this the best strategy? Does it really generate positive outcomes? This article aims to verify how variety of options available in a shopping decision situation affects choice overload. In order to check the main effect, satisfaction, confidence and regret on the choice made were used as outcomes of this process. We also analyzed the role played by assortment size perception in this relation. Two experimental studies demonstrated that offering consumers a bigger perceived variety actually increases satisfaction and confidence with the option made, and decreases feelings of regret. Surprisingly, assortment size effects on this model were not confirmed. Contributions to literature and to retailing companies' strategy, as well as possibilities of further studies are discussed.

Key words: variety, satisfaction, confidence, and regret

1. Introduction

Assortment size is not necessarily related to the number options available (Broniarczyk and Hoyer, 2006), since the amount of shelf space devoted to a category and the level of similarity of all options also play a relevant role in this context. In the same way, consumers might not even notice reduction or increase of assortment, if the dropped or new options are similar to the remaining ones (Desai, & Trivedi, 2014). It's becoming evident that environmental contextual cues such as variety, shelf display and assortment size can influence consumption (Kahn and Wansink, 2004). Marketing research therefore, should follow closely this phenomenon.

Larger assortments usually offer a greater variety of options thus it increases the probability of having a good fit between available choices and consumer's preferences or purchase goals (Chernev and Hamilton, 2009). Additionally, bigger variety might have positive results such as: allowing consumers to maintain flexibility in light of uncertainty of options, accommodate variety-seeking behavior and offer option value (Chernev, Böckenholt and Goodman, 2015).

However, recent research has questioned the assumption that more variety always means benefits consumers. It is important to consider that it may also reduce individual's motivation to make a choice, generate lower levels of satisfaction and influence the "easier" (Dörnyei, Krystallis and Chrysochou, 2017), mainly due to the cognitive load generated by a bigger variety of options (Chernev Böckenholt and Goodman, 2015).

The effect of perceived variety on consumers' choice is still uncertain for marketing researchers, and for that reason it should be further investigated. Choice overload is a current topic among marketing literature and research since it changes consumer's internal states, leading to lower levels of satisfaction (Dorn, Messner and Wänke, 2016; Chernev et al., 2015), higher levels of post decision regret (Chernev et al., 2015), lower levels of decision confidence (Chernev et al., 2015), decreased preference for larger assortments (Chernev 2006, Iyengar and Lepper, 2000), greater preference for easily justifiable options (Chernev et al., 2015; Sela et al. 2009) and reduces the processing of product attributes in order to make the choice easier (Dörnyei et al., 2017).

Considering that choice overload is related to the mental state of the decision maker, it cannot be observed directly. As mentioned earlier, it results in decision-making process outcomes, or proxies, such as satisfaction, regret, confidence, choice deferral and switching likelihood. These measures are all equally powerful and therefore can be used interchangeably to measure choice overload (Chernev et al., 2015).

Albeit literature has failed to come together into a cohesive understanding about when large assortments can benefit choice and when they can be detrimental to choice. Additionally, studies on assortment size outcomes did not accounted variety as an influence to the results, even though marketing research has demonstrated that assortment size and variety are mixed concepts (Chernev et al., 2015). Thus, this particular research aimed to answer to a straightforward question: "Does variety impact consumer in the same way quantity and assortment size (e.g. number of options available) does?" In other words, this study demonstrated that not only the size of the assortment (e.g. quantity) generates less satisfaction, more regret and less confidence, but also consumers' variety perception.

Companies offer consumers a wide variety of products or services, such as options in the menu, options of colours, sizes and shapes. Therefore, it is important to further understand how perceived variety can influence consumer choices (Choi, Mattila and Upneja, 2017) and also how it affects responses after choosing, such as satisfaction, regret and confidence. Two different online experiments were conducted to understand the outcomes of perceived variety. Through the experiments, we concluded that variety affects positively choice, increasing satisfaction, confidence, and diminishing regret. However, no significant moderation was found between variety and assortment size.

This research is structured as follows: first, a brief theory review on variety, satisfaction, regret and confidence is presented, followed by research method and data analysis. We also present in the final parts of this research a discussion of results, theoretical implications, and possibilities for future research.

2. Theoretical Background

In this section, theory involved in this research will be further discussed. More specifically, perceived variety's theoretical backgrounds, as well as satisfaction, regret and confidence will be analyzed.

2.1 Variety

Iyengar and Lepper (2000) identified that people are more likely to make a fast decision when they face a smaller variety of options, if compared to situations with more extensive and exhausting variety which is actually and conversely more attractive to consumers. One of the reasons for that is that when perceiving a bigger variety of products the decision about which option to choose becomes more difficult (Berger et al., 2007).

Conversely, literature suggested that bigger variety is mostly connected to better choice outcomes, as satisfaction (Broniarczyk, Hoyer and McAlister, 1998; Morales et al., 2005), information processing (Morales et al., 2005) and reducing uncertainty (Etkin, & Ratner, 2011), meaning confidence with choice made.

People seek variety and novelty to counter the satiation effect perceived when they engage in consumption process that are repeated through time (Spassova and Isen, 2013). Even when not looking for a particular good, consumers like to explore suitable options. When they do not perceive the full range of options offered by the marketer, they may be less likely to return for another shopping trip (Morales, Kahn, McAlister and Broniarczyk, 2005)

Besides variety (Broniarczyk et al., 1998; Morales et al., 2005), other characteristics of the assortment can be beneficial to choice. Categories, for example, improve satisfaction when consumers are choosing an unfamiliar product or service. The reason is that grouping the options into categories increases the perception of variety among available options (Mogilner, Rudkick and Iyengar, 2008). Therefore, it is possible to link variety to greater satisfaction and a better and more fluid choice process.

Perceived variety of an assortment can also influence consumption in spite of the actual number of products available. Moreover, greater perceived variety should positively impact the quantity consumers end up buying (Kahn and Wansink, 2004). Similarly, perceived variety affects positively brand image even when the set size remains unchanged. Consumers tend to see brands that offer a greater variety of products as better quality brands and enhance their purchase likelihood (Berger, Draganska, & Simonson, 2007).

It is important to highlight that assortment size and variety are sometimes mixed concepts to marketers. For this reason, it is important to clarify that variety is usually addressed as the number of alternatives available, however it has been already demonstrated that consumer perceptions of variety depends on more than just the actual number of items in the assortment (Morales et al., 2005; Redden, & Hoch, 2009) and could be classified as the number of distinct options or number of distinct subcategories (Kahn and Wansink, 2004).

This paper does not aim to discuss the full meaning and understanding of perceived variety and its distinct perspective from differentiation, quantity and assortment size. Instead, the goal of this research is to understand whether the outcomes of perceived variety (e.g distinction between options) are the same of assortment size perception (e.g. satisfaction, confidence and regret). In this context, assortment size will be treated as a variable that might play a relevant moderation role in those relations. The concept of satisfaction, regret and confidence are discussed in the subsections below.

2.1.1 Choice Satisfaction

Mogilner, Rudnick and Iyengar (2008) identified effects of choice making on satisfaction with the option chosen. Their study was specifically focused on categories, and the fact that when an individual who is not familiar with the product can categorize the possible options, it affects positively satisfaction levels. The idea behind this result is that by separating the large assortment of options into a smaller one, consumers can infer differences and perceive major variety through categories, impacting self-determination, which leads to satisfaction.

Larger assortments offer a greater variety of options, which increases the likelihood of matching consumer's purchase goals and the possibilities of products available (Chernev and Hamilton, 2009), meaning that a bigger variety of options might result in a more satisfied consumer. The feeling of being able to change the choice made in the future, considering the uncertainty related to it, may be the cause of this satisfaction (Chernev et al., 2015).

Another perspective is that consumers might feel less satisfied or frustrated with the decision made when exposed to a larger assortment of options *versus* a smaller assortment, yet, their perception of the decision making process may be more enjoyable. The reason is that the available number of options affected the selection, evaluation and integration of information (Iyengar and Lepper, 2000). However, the role of variety perception on this relation is still not clear.

What we already know is that consumers are expected to care for variety when choosing any good because of expectation confirmation. Meaning that perceived variety is positively related to the expectation that the right product or service will be found, and the choice will match individuals' needs (Diehl and Poynor, 2010).

Additionally, perceived variety could make consumers believe that the product set has fewer items, in comparison to the product set with less variety (Redden, & Hoch, 2009). Therefore, the size of the assortment that consumers face when making a decision also plays a relevant role in this relation. Kahn and Wansink (2004) study confirmed that assortment size moderated the positive results perceived variety had on purchase quantity.

In order to validate previous theory, this research suggests that variety perception impacts positively on satisfaction and assortment size moderates this relation. Therefore:

H1a: Greater (little) perceived variety leads to more (less) satisfaction.

H1b: Assortment size moderates the relation between perceived variety and satisfaction. Thus, big (small) assortment size perception increases (decreases) satisfaction with variety.

2.1.2 Decision Regret

After choosing from a specific set of items, consumers might experience positive feelings such as satisfaction, but also there is always the possibility of negative feelings. Haynes (2009) in an empirical research, for example, verified that individuals who chose from a large assortment experienced more frustration, however they did not find any significant result for decision regret regarding number of options and variety, leaving regret's relation to assortment size and diversity uncertain.

It is clear that regret is a negative emotion that might be part of purchase's experience with the choice made (Chernev et al., 2015). The impact of assortment size on regret is a function of time pressure that customers experience when having to consider too many options (Inbar, Botti and Hanko 2011). In other words, the potential opportunity of finding the best option in a vast assortment *versus* the inability of considering all options due to time and cognitive constraints results in regret feelings regarding the item chosen (Iyengar and Lepper, 2000).

Sagi and Friedland (2007) found that when consumers have more difficulties to weight advantages and disadvantages of the options, they experience more regret. Similarly, a brand that varies extensively and simultaneously along multiple, non-compensatory dimensions, demanding between-attribute tradeoffs, enlarges both cognitive effort and the potential for regret.

Even though these studies already indicate that regret might be a result of choosing from too many options, none of them tested the specific relation of variety in this context. Thus, further research should be performed in order to understand the role played by regret feelings in the decision making process, specially related to perceived variety. This paper suggests that variety perception influences negatively feelings of regret, and that assortment size moderates the relation, as smaller assortments strengthen this result. Thus:

H2a: Greater (little) perceived variety leads to less (more) regret.

H2b: Assortment size moderates the relation between perceived variety and regret. Thus, big (small) assortment size perception decreases (increases) regret with variety.

2.1.3 Confidence

Uncertainty definitely makes consumers feel less confident with their choice, and this situation is more likely to occur whenever consumers feel overloaded (Heitmann, Lehmann and Herrmann, 2007). In a recent research Wang and Shukla (2013) stated that confidence could be defined as accuracy of a judgment. In this sense, ambiguous information would

cause confusion and choice overload; both of them would reduce choice confidence as consumers show more difficulty to simply differentiate brands and justify their choice.

Confidence is positively related to purchase intention, as it is directly connected to buyer's subjecting feeling of uncertainty and doubt (Laroche, Kim and Zhou, 1996). Thus, in order to increase a consumer's intention to buy something, a marketer must enhance his or her confidence, by providing better product related information, as variety (Laroche et. al., 1996). Additionally, individuals are more confident that the best alternative is selected when choosing from a smaller set of products, if compared to individuals who choose from a larger set of products (Chernev, 2003).

Choice overload literature already stated that consumers feel more overloaded with alternatives when all options seem too similar (Iyengar and Lepper, 2000). Correspondingly, when attribute levels of a certain product set are equally distributed across alternatives (e.g similar alternatives), consumers are less confident with their choice (Lee and Lee, 2004).

Based on marketing literature previously discussed, this research considers that variety is associated to decision confidence in a positive direction. Therefore, we propose the following:

H3a: Greater (little) perceived variety leads to more (less) confidence.

H3b: Assortment size moderates the relation between perceived variety and confidence. Thus, big (small) assortment size perception increases (decreases) confidence with variety.

3. Method and Analysis

The present study was developed using a quantitative approach based on conclusive and causal concepts, aimed to obtain evidence of the existence or not of relationships of cause and effect between the variables (Malhotra, 2012). To be able to verify these relations, the experimental method was used. The 'experiment' is a type of systematic research in which the researcher modifies some factors (or stimuli to the individuals) and observes the results of this specific variation in the interdependent variables (Goodwin and Goodwin, 2013). The purpose of this type of research is usually the deepening of what is known about the relationship between two variables (Falk and Heckman, 2009).

Experiments use manipulation of variables representing different situations to respondents. In this specific case data was collected through Mturk platform and a Qualtrics questionnaire. People were exposed to a hypothetical shopping situation of different products such as a reading lamp and a bottle of wine and they had to choose one of the options presented.

They were randomly assigned to a condition with bigger variety of products *versus* a condition with a smaller variety of products to choose from. We measured the perception of variety and size of the assortment of products. Respondents also answered scales to measure the individual's satisfaction, regret and confidence with the choice previously made. Analysis was performed using SPSS 22 considering multivariate analyses as well as demographic variables in order to better understand respondents' profile.

In study 1 we manage to have 137 valid respondents of which 49% were male. Age ranged from 20 to 75 with average of 40 years old. 66% of the sample held a college degree. Conditions were perceived as realistic by respondents, and manipulation worked as intended since condition with small variety (M=5.49, SD=1.80) was perceived as such, as well as big (M=7.72, SD=1.19) variety $F(1, 135)= 73.17$, $p<0.01$.

When testing hypothesis the impact of variety on consumer behavior after making the choice of buying the product was significant on satisfaction $F (1, 135)= 46.56$, $p<0.01$, and

confidence with the choice made F (1, 135)= 25.24, p<001. However it was not significant on regret F (1, 135)= 0.13, p>0.05.

Hypothesis 1a suggested that greater perceived variety would lead to more satisfaction which was confirmed by analysis considering individuals who perceive variety of products as small (M=5.66, SD=1.29) and as big (M=7.23, SD=1.04). Hypothesis 3a, which suggested that bigger variety generates more confidence with choice made, was confirmed as well (M=4.29, SD=1.52 for small and M=6.08, SD=1.76 for big variety). Although, H2a, which proposed that greater variety, would lead to less regret was not confirmed (M=4.29, SD=1.52)

Hypothesis H1b, H2b and H3b which mentioned assortment size moderation effect on satisfaction, confidence and regret, respectively, was not confirmed. This relation was verified using Process Model 1 for moderation developed by Hayes.

Study 2 also performed on Mturk resulted in 149 valid respondents making a choice of products that included a TV and a reading lamp. 62% of respondents were male. Age ranged from 20 to 70 and average was 36 years old. Regarding level of education, 64% had a college degree or higher. Manipulation worked as intended since condition with small variety (M=5.34, SD=1.13) was perceived as such, as well as big (M=7.43, SD=1.39) variety F(1, 147)= 98.21, p<0.01.

In this case H1a was also confirmed since people who perceived variety as small (M=5.11, SD=0.84) actually presented more satisfaction with choice made than people in big variety (M=7.18, SD=1.22) condition F(1, 147)= 62.75, p<0.01. H3a was also confirmed (M=5.60, SD=0.96, and M=7.18, M=1.22, respectively) since in larger variety condition people experience more confidence with choice made F(1, 147)= 35.64, p<0.01.

However, contrary to study 1 results, in study 2 hypothesis H2a was confirmed since people in bigger variety condition perceived less regret (M=3.12, SD=1.34) if compared to people in small variety condition (M=4.75, SD=1.03) and results were statistically significant F(1, 147)= 31.83, p<0.01. Moderation effects were once again not significant and thus H1b, H2b and H3b were not confirmed.

4. Discussion and Conclusions

Considering the existing theoretical discussion about the optimal conditions to present a certain assortment of products to consumers in a retail environment this research intended to analyze if variety of items available in a choice situation would influence consumer in the same way assortment size would. In summary, the goal was to verify the effect of variety on consumers' satisfaction, confidence and regret with choice made, all of them proxys of choice overload, as well as moderation effect of assortment size.

Through 2 different experimental studies, developed on Mturk platform, it was possible to verify that actually perceived variety positively influenced choice overload, meaning it results in a more confident (H3a) and satisfied customer (H1a) that feels less regret (H2a) regarding the choice made (confirmed only in one of the studies). These findings are aligned with previous research such as Broniarczyk et al. (1998), Morales et al. (2005), Lee and Lee, (2004) and Etkin and Ratner (2011).

Much to our surprise, the size of the assortment that consumers faced when choosing did not moderate these relations (H1b, H2b and H3b). Previous studies verified the existence of this moderation when the main effect was between variety and quantity of product that consumers bought (Kahn and Wansink, 2004). As this is a positive outcome, we would expect assortment size to moderate also other positive outcomes such as satisfaction with choice made, however results did not confirm it.

Many hypothesis could be drawn for these results, one of them would be that manipulation of product sets did not generated perceptions of assortment big enough to

capture the impact of this variable in the relation between variety of options and choice overload responses. Another possibility is that other variables not considered in this model play a relevant role, such as familiarity with the product or the existence of a prevalent option among the set considered.

This research contributes both to the field of study of choice overload and variety in retail contexts, as well as to companies operating in retailing scenarios. With different perspectives in the literature about effects of variety on consumer behavior, this article helps to clarify that in these contexts, presenting consumer with more variety apparently has a good effect. It generates more satisfaction, more confidence with choice made, and consumers are less prone to experience regret. Companies should therefore, consider variety of products perceived by customers when organizing shelf displays, in store layout, as well as grouping products in the aisles. Depending on how products are presented, consumers will actually experience outcomes that are more positive after shopping.

Obviously, this is still a working paper, which requires further investigation. One possibility would be to use a field study in order to verify if in real life situations consumers would also report same behaviors. Other idea would be to use a specific manipulation to represent bigger and smaller variety instead of only measuring it in the experiment design. Additionally, future studies could manipulate size assortment in a different way in order to verify if there is no relation among these variables. Also, it would be interesting to check if the same effects happen in virtual stores, since this research described a shopping experience at a physical store.

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