How Does Choice Overload Affect Consumer Behavior: Experiments Based on Certain Consumer Groups

Jianxiang Pan[1(✉)] and Wanying Li[2]

[1] GEMS Dubai American Academy, 32762 Dubai, United Arab Emirates
jasonandxinhui@gmail.com

[2] Faculty of Asian Language and Cultures, Guangdong University of Foreign Studies, Guangzhou 510420, China

Abstract. A common notion of consumer behavior is the more choices, the more economically rational. However, this study challenges the extent to which the notion is valid because in the field of standard economics, it is a valid assumption. Humans have been concluded according to previous studies to be faced with choice overload- a situation occurring whenever humans are faced with too many choices. They start to feel overwhelmed and become less economically rational. This study takes "choice overload" further and aims to discover whether or not choice overload is affecting individuals to different extents, depending on their relative economic status and how much "choice overload" is relatively present. Experiments are to be conducted in four different supermarkets, two in high-end supermarkets (Draegers and Erewhon) and the other two in normal supermarkets (Trader Joe's and Walmart). In each supermarket, two booths, one containing six jam selections and one containing 24 jam selections would be set up. With analysis, it could be reasonably inferred that those who shopped at a normal supermarket and reached a 24-selection booth faced most choice overload. Therefore, it could be reasonably concluded that choice overload is present, and affects different groups of consumers to varying extents.

Keywords: Choice overload · Selection · Purchasing behavior · Cost

1 Introduction

Consumer behavior is a topic of high interest to firms and other entities that aim to attract as many consumers as possible. Following the standard conventions of economics, it is often assumed the more choices, the merrier. Consumers are assumed to be perfectly rational beings, as a larger selection of products provides them access to a larger selection variety, allowing them to pick the most economical choice. The purpose of investigating the impacts of choice overload has become more significant over the years, in an increasingly industrialized and interconnected world, where as a result of that, consumers now face an "expansion of information," causing the choice difficulty that "consumers experience in today's decision environment" [1]. However, in the study conducted by Sheena

S. Tehseen et al. (Eds.): ICEDBC 2023, AEBMR 258, pp. 382–388, 2024.
https://doi.org/10.2991/978-94-6463-246-0_46

S. Iyengar and Mark R. Lepper, all three experiments conducted have supported their hypothesis that although having extensive choices might be desirable at first for the consumer [2], it can cause a "dissatisfaction of choice" as it "can produce paralysis" [3, 4]. Therefore, this supports the choice overload hypothesis, because in the real world, people do not always make choices due to the economic cost of making them- such as the time it takes to process the information or what is paid monetarily. So, the extent to which choice overload impacts consumer behavior and whether different types of consumers are affected differently is what this study is all about. In the field experiment involving jam selection, tasting booths would be displayed with either a limited (6 choices) or an extensive (24 choices) selection of different flavors of jam for consumers at an upscale grocery store which observes the attraction of the tasting booth with different-selection condition to consumers and their subsequent purchasing behaviors [2]. The results should demonstrate that although the extensive-selection condition (24 choices) attracted more consumers to booths than the limited-selection condition (6 choices), consumers initially encountered limited choices proved a more likely purchasing behavior. However, there chould be several limitations in this experiment. This experiment was set at an upscale grocery store, which made the type of consumers (subjects) limited because the targeted consumers might have had a higher income. In terms of food choice, when consumers are making food purchasing choices, taste, smell or appearance as well as brand, packaging health claims of the food product should be important determinants that they consider [5]. Besides, when consumers are making food choices, trade-offs between price and product attributes are made, which can also be seen as consumers processing and balancing product information [6]. According to this, the experiment is extended to conduct research based on consumer groups with different incomes. In addition to high-end supermarkets, low-end or normal supermarkets are added as new experimental locations, the purpose of which is to observe the behavior of certain consumer groups.

Furthermore, Payne et al. claimed that "we can improve decisions by creating a better match between task demands and the information-processing capabilities and preferences of the decision maker" (p.218) [7]. On the other hand, consumers are under time pressure when attending to and using expanded selection or additional product information in product choice. The complexity of a shopping task is exacerbated by time pressure and may make making choices among the alternatives even more difficult for consumers [8]. Therefore, consumers who are under time pressure should feel less satisfied with the decision and less confident about their choices [9]. In the study, it is suspected that consumer groups with different incomes are affected by choice overload differently. Besides, time-constrained consumers should not able to process additional information of products better than less time-pressed consumers, so they would be less likely to purchase a product [9]. Above all, the hypothesis is that lower-income consumer groups should be more affected by choice overload than higher-income consumer groups. Lower-income consumer groups should feel more overwhelmed and time pressured when encountering an extensive-choice condition.

2 Experimental Design

The focus of this experiment, something of which has not been previously explored in past literature, is whether or not experimental results measuring choice overload will differ systematically based on a change in experimental population grouped based on economic status. Similarly to the 2000 study aforementioned in the introduction, the variable used will be jams, specifically from the Wilkins and Sons company. The reason behind choosing this specific brand is to one, in an attempt to maximize the number of people who approach the booths, and two, finding a brand that meets the needs of this experiment. It is logical to believe that the Wilkins and Sons brand is the best choice, as it is a brand that the general population are not so familiar with (compared to brands like Bonne Maman that have a significantly larger market share), so it can be reasonably assumed that not many people would already dislike this jam brand beforehand but would still be interested in trying out the flavors as the brand is not one that everyone knows. In each supermarket, there will be two stands- one stand with six jam flavor choices and the other with twenty-four jam choices. Within each stand, three people will be working, one of which is unobtrusive in the experimental process. This means that per stand, two sales people dressed in work clothing will be standing behind the booth and selling the jam product as usual. With the remaining unobtrusive person dressed in normal clothing a customer would wear, they will count how many people approached the stand, or saw the stand but walked away. In the 6 flavors booth, the supermarkets should be divided into two levels- the "average" supermarkets including Trader Joe's and Walmart, and the "high-end" supermarkets including Draeger's Supermarket and Erewhon. The experiment should be conducted in Los Angeles as it is one of the few cities in the US containing all these supermarkets, but for simplicity and considering the economic costs of conducting this experiment, it is necessary that these experiments happen in the same city. In order to measure the number of jams sold after a customer visits a booth, each customer will be given a coupon voucher that can be used when purchasing. At the end of the working day, the coupons collected by the cashier will then be sorted and evaluated by the experimenters. This experiment should take place from a Saturday to a Tuesday, with the intention of including two days of the weekend and two days of the working week to maximize the possibility of measuring the purchasing behavior from each type of customer. This is because some might be busy during the workdays or on weekends, depending on the person's type of job, responsibility, and retirement status.

3 Expected Results

In the past readings, the initial attractiveness was much more appealing for the booth with 24 jams, though the booth with 6 jams for selection saw a much larger proportion of people buying the jam after visiting the booth. Similarly in this experiment, though the initial attractiveness would also be analyzed, the main focus will be on the subsequent purchasing behavior. The hypothesis is that across all supermarkets, subsequent purchasing behaviors will be more active after customers visit the 6 selections booth rather than the 24 selections booth, under the hypothesis that all people regardless of

economic status will be affected by choice overload. Specifically, this means that when calculating the total number of jugs of jams sold, a larger proportion of the sales will be coming from customers after visiting the 6 selection booths across all supermarkets relative to customers that visited the 24 selection booths. However, relative to the income levels, customers shopping in "average income" supermarkets are expected to suffer more from choice overload than those shopping in "high income" supermarkets, with the explanations included below.

4 Discussion

The anticipated outcomes of this experiment in theory supports the experimental hypothesis where choice overload has an impact on a group of people, such as those with a high or average income, but to varied extents. The results should demonstrate a stronger effect of choice overload and demotivated purchasing behavior on the lower income experimental group, in comparison to the higher income group. The decision-making process should be longer in supermarkets with customers of a relatively low income. For people with higher incomes, the opportunity cost of time may be higher than for those with average incomes when connecting with different income groups. However, eating jam accounts for a relatively larger proportion of an average-income household's income than it does for those who earn more. As a result, more factors would be taken into consideration for average-income customers, including the overall price, price in relation to the quantity paid, its shelf life, and tastiness. The average-income groups would theoretically spend considerably more time to compare the jams than the high-income groups. On the contrary, for the high-income groups, there seems to be less impact of extensive choices on purchasing behavior. This could be mainly attributed to the reason that they have more disposable income, meaning they are not as mindful when it comes to buying foods, including expensive grocery goods. They are sure that even if they eventually throw the jam without fully consuming it, it doesn't take away from a significant proportion of their wealth. With the logical evaluation and conclusion drawn from this experiment, it is not to say that limitations are not present. For example, this experiment assumes that all customers who shop in high end supermarkets are people of high quality, and all customers who shop in average supermarkets are indeed people of average income. The decision-making process should have been longer in supermarkets with customers of a relatively average income. For people with higher incomes, the opportunity cost of time may be higher than for those with lower incomes when connecting with different income groups. In contrast, eating jam accounts for a relatively larger proportion of an average-income household's income than it does for those who earn more. Therefore, more factors should be taken into account for average-income consumers, including price, shelf life, etc., as well as taste. The average-income groups had to spend considerably more time to compare these jam conditions than the high-income groups.

There also should be less impact of too many choices on the purchasing behavior of the high-income group. The high income group may have more disposable income, which may predict that they will spend more on the 6 choices group as well as 24 choices group, but the high income group still purchases in the 6 choices group at a

lower rate than those in the average income group at a higher rate. This may be also because the choice overload effect has a smaller impact on the high-income group. They may feel less overwhelmed by 24 choices because they have less stress choosing what to buy. The idea of "heuristics," also known as quick decisions, and how it affects the results of the experiment should also be taken into account. Heuristics are "shortcuts" taken by humans when they are overwhelmed by choice. Heuristics is something that applies to all people regardless of the level of income, and is especially prominent with impatient people. It should be considered because heuristics may have been the main cause for the difference (and significance) of the anticipated figures. They are very convinient to the human mind, but sometimes "lead to severe and systematic errors." [10]. The heuristic route that people with higher income would theoretically take is buying the jam speedily if the jam seems like it could be a good-tasting one. However, the heuristic route that people with a lower income would theoretically take is leaving the booth if the heuristic effect has happened. Both assumptions aforementioned are under the assumption that people of both groups have the same level of interest and desperateness for jams. Thus, it would not be appropriate to simply conclude, under these considerations, that the high income group is less affected by extensive choices based on their purchasing behavior of having more purchases and spending less time when buying. The experiment design still requires some improvements. In contrast to exclusive supermarkets like Draeger's store, which offers a diversity of options as one of its supermarket features, it might not be natural for a low store to provide 24 choices of jams with some uncommon brands or flavors. As a result, many options may be more appealing in supermarkets of a similar caliber, and shoppers in those supermarkets may initially be in awe by the extensive choices purchasing environment, resulting in longer shopping trips. Due to the inability to carry out this experiment in other nations, the samples in this experiment only originate from one country. Two factors that should lead to this are time and money. Also, in this experiment, the number of jam purchases were not limited. The expected results if only one type of jam can be purchased might differ, providing another perspective in looking at the choice overload effect. In that case, especially for the high income group, the attitude towards making a decision may be more serious. When considering options, the high income group in the original experiment might opt to purchase a variety of jams. However, the average income group is unlikely to experience this as they frequently decide against making a single purchase rather than making multiple ones. Thus, restricting the options might enable more realistic reflection of the overwhelming effect from extensive choices more accurately. Though that seems viable from the perspective of collecting accurate figues purely based on purchasing behavior, it fails to mimic real life circumstances- as jam is something that usually wouldn't have a purchase limit.

5 Conclusion

Despite numerous experiment constraints, this experimental design proposal should deliver an innovative and comprehensive view of how different income groups may view choice as being too overwhelming. By doing this, the choice overwhelming effect and the extent to which it impacts consumers of different economic levels can be reflected.

The findings can be used to inform business marketing plans and other industries which rely on consumer behavior tactics in order toachieve sales maximization. For example, if the hypothesis is supported, then this information can be used by profit-driven firms where they adjust the quantity of choices to the adequate range when targeting consumers of varied income levels. Other adaptations of this experiment itself, or the structure of the experiment with different independent variables can be conducted in the future to provide further insights into the extent of the impact that choice overload has on consumer behavior. To increase the reliability and representativeness of the conclusions made, more experiments exactly like this study can be replicated in other parts of the world so that the statistics gathered would not only be more credible but can be generalized to the whole world population. Experiments involving changing the independent variable, such as using age, education level, season, or GDP statistics as methods of classifying data are also a few ways how this experiment could possibly be realized from other points of analysis. On a larger picture, this experiment, as an example of one part of behavioral economics, challenges the validity of assumptions from standard economics that are used for further analyses in other fields. This experiment hopes to be an instigator, one that encourages the continuation of future research into the realities of human consumer behavior.

References

1. Broniarczyk, Susan M.; Griffin, Jill G. Journal of consumer psychology: the official journal of the Society for Consumer Psychology, 01 Oct 2014, Vol. 24, Issue 4, pages 608–625
2. Iyengar, S.S. and Lepper, M.R. (2001), "When choice is demotivating: can one desire too much of a good thing?", Journal of Personality and Social Psychology, Vol. 79, Issue 6, pages 995 - 1006.
3. Besede, Tibor; Deck, Cary; Sarangi, Sudipta; Shor, Mikhael. (2015) The review of economics and statistics, Vol. 97, Issue 4, pages 793–802
4. Markus, Hazel Rose; Schwartz, Barry. (2010) The Journal of consumer research, Vol. 37, Issue 2, pages 344–355
5. Grunert, K.G., Hieke, S. and Wills, J. (2014), "Sustainability labels on food products: consumer motivation, understanding and use", Food Policy, Vol. 44 No. 2, pp. 177-189.
6. Wills, J.M., Storcksdieck gennant Bonsmann, S., Magdalena, K. and Grunert, K.G. (2012), "European consumers and health claims: attitudes, understanding and purchasing behaviour", Proceedings of the Nutrition Society, Vol. 71 No. 2, pp. 229-236.
7. Ghvanidze, Sophie; Velikova, Natalia; Dodd, Tim; Oldewage-Theron, Wilna (2017), "A discrete choice experiment of the impact of consumers' environmental values, ethical concerns, and health consciousness on food choices: A cross-cultural analysis", British Food Journal, Vol. 119, Issue 4, pages 863 - 881.
8. Payne, J.W., Bettman, J.R. and Johnson, E.J. (1993), The Adaptive Decision Maker, Cambridge University Press, Cambridge.
9. Dhar, R. and Nowlis, S.M. (1999), "The effect of time pressure on consumer choice deferral", Journal of Consumer Research., Vol. 25 No. 4, pp. 369-84.
10. Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, *185*(4157), 1124–1131. http://www.jstor.org/stable/1738360