

One-Page Summary of Choice Overload

Problem

- A clothing website called the Cotton Bureau displays all of the United Pixelworkers T-shirts on a single page that results in an overwhelming browsing experience and choice overload for the customers.
 - o Choice overload refers to the scenario in which the decision-maker faces an overwhelming decision problem result from an excessive number of choices (Chernev et al., 2015).
- Choice overload reduces the overall satisfaction of a shopping experience and can possibly irritates negative emotions. Moreover, it discourages customers from spending a long time on browsing on this site and successfully placing an order.

Solution

- Two features can be implemented to reduce the impact of choice overload: assortment and categorization.
 - o Assortment helps breaking down all the options into a series of choices with fewer numbers at each time (Besedes et al., 2015) for better readability and less cognitive load (Chernev et al., 2015), especially when choosers are unfamiliar with the domain of choice (Scheibehenne et al., 2010).
 - o Categorization groups items by their most prominent attributes which allow choosers to quickly narrow down to a particular range to find the desired item (Mogilner et al., 2008).
- Implementing both features can alleviate the impact of choice overload by organizing all products under the corresponding category and displaying them in a smaller capacity on each page.

Basic Research

- The most prominent advantage of assortment is that it changes the perception of smaller choice sets but remains the same total number of available choices, which reduces the mental burden and encourages choosers to browse longer (Besedes et al., 2015).
- Using categorization, the decision-makers can refine their choices (Mogilner, et al., 2008) by quickly locating to the category that their desired product with less cognitive burden throughout the process (Diehl, 2005). In addition, categorization implies the tradeoff between different categories more explicitly, thus encourages the customers to make a selection rather than the uncertainty caused by indistinct tradeoffs.

Evaluation

- A research experiment will be conducted to test the ideal format of presenting a large number of choices on the website.
- The two IVs are categorization and assortment. The DVs are the time taken for the customers to find the desired product and their overall satisfaction with the entire shopping experience. A factorial ANOVA will be conducted to analysis the data.

Choice Overload Effect on Webpages

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Introduction

People face all kinds of decision-making tasks every day. Whether it is deciding for dinner, choosing what favor of coffee to start a new day, or spending time reading a book rather than taking a break. They all involve the process of selecting one option from several possibilities (Eysenck & Keane, 2020). A popular misconception was that more choices will always bring greater satisfaction to the decision-makers because they are more likely to find a close match to their shopping goals (Baumol & Ide, 1956; Hotelling, 1929, as cited in Chernev et al., 2015). However, having an excessive number of choices can result in the choice overload effect, which refers to the scenario in which the decision-maker faces an overwhelming decision problem result from an excessive number of choices (Simon, 1955; Toffler, 1970, as cited in Chernev et al., 2015). Iyengar and Lepper (2000) conducted three experiments to investigate if having too many choices is satisfying for the decision-makers or on the opposite, intensifying mental burden. In their studies, researchers randomly assigned participants into two conditions, one with limited choices and another one with an extensive amount. The study shows that, regarding choosing jam flavors, participants are more likely to be interested and stimulated to make a purchase when there is a limited number of choices rather than an extensive amount. They would bear less amount of mental burden and are less likely to feel regret in regard to the decision. As time has changed, more companies start to sell their products through the online website instead of physical stores for less cost. The same strategy of avoiding choice overload can be applicable to online retail stores as well.

Problem

Cotton Bureau is an online clothing website selling graphic t-shirts, hoodies, etc. It collects designs and artworks from various designers and prints them on different clothes. In 2014, a famous brand called the United Pixelworkers started a collaboration with the Cotton Bureau as the first step back to the market after their 4-year long hibernation. On their collaboration page on Cotton Bureau, the webpage lists more than 150 graphic t-shirts and some exclusive products for the customers to browse and purchase. It includes t-shirts printed with regional landmarks and numbers that look indistinct in the small preview pictures. For example, all of their t-shirts with city landmarks have the same pattern of a grey background, brick-color graphic prints, and a black headline says Pixelworkers. In addition, this webpage does not contain any filter or category section to assist customers in refining their choices. With a quick glimpse, customers are very likely to perceive this webpage as endless and overwhelming, result in a frustrating browsing experience. Moreover, it discourages customers from spending a long time browsing on this site and successfully placing an order.

Solution

Customers are more likely to be overwhelmed when all choices are unorganized and in a large chunk, making the content seem chaotic and endless. Among all factors that moderate the effect of choice overload, assortment and categorization play an important role in assisting choosers to perceive all choices differently and bear the less cognitive burden (Diehl, 2005). Assortment refers to the format of breaking down all the options into a series of choices with fewer quantities at each time (Besedes et al., 2015) for better readability and less cognitive load (Chernev et al., 2015), especially when choosers are unfamiliar with the domain of choice (Diehl 2005; Diehl, Kornish, and Lynch 2003; Huff-man & Kahn 1998; Russo 1977, as cited in Scheibehenne et al., 2010). Implementing an assortment, Cotton Bureau can limit the number of

products shown on each page, which manually breaks down the excessive amount into smaller chunks and creates a more comfortable reading experience. Assortment without labels only reduces the capacity of each page, whereas categorization adds more organization to the webpage by grouping products with their most prominent attributes (Mogilner et al., 2008). It stimulates customers to narrow down to a particular range to find the desired item with a faster speed and higher accuracy (Mogilner et al., 2008). Based on the t-shirts' themes, graphic prints, and other prominent traits, Cotton Bureau can label and organize them under the corresponding category. For example, all t-shirts with city landmark printings can be arranged under the category *City Landmark*, so customers can have a preview of the following content and be prepared if they want to continue reading or skip this section. As a result, Cotton Bureau will need to control the organization and the amount of information presented to the customers for the ease of processing information. Assortment and categorization can effectively help reducing the choice overload effect thus offering a better online shopping experience.

Research

As mentioned above, assortment refers to the format of breaking down all the options into a series of choices with fewer numbers at each time (Besedes et al., 2015) for better readability and less cognitive load (Chernev et al., 2015). According to prior research (Chernev et al., 2015), having a large assortment increases the likelihood of consumers being able to find a closer match to their desired goals (Baumol & Ide, 1956; Hotelling, 1929, as cited in Chernev et al., 2015), encourages them to make a selection, enhances enjoyment of the shopping experience (Babin, Darden, and Griffin, 1994, as cited in Chernev et al., 2015), and upgrades the overall choice satisfaction (Botti & Iyengar, 2004, as cited in Chernev et al., 2015). On the other hand, assortment changes the perception of smaller choice sets without changing the total number of

choices available (Besedes et al., 2015). With a smaller number of choices each time, decision-makers are more likely to be patient and go over more choices while bearing less cognitive strain than those who have no or less assortment (Besedes et al., 2015). Using assortment, Cotton Bureau can remain displaying all the featured product while presenting an appropriate amount to the consumers at each time.

Categorization assists the organization of information further by implying the attributes of products in the category name (Mogilner et al., 2008). It is not only a cognitive process that aids the choosers in locating their desired products in a faster and easier way, but also is a perceptual process in which customers can infer the difference between this particular item from the other ones in a different category (Mogilner, et al., 2008). It is shown that choosers are relatively more willing to choose options under different categories due to the fact that the difference is prominent. Whereas choosing from homogenous options makes the tradeoff between the options unclear and adds more sense of uncertainty in the process (Festinger 1964; Tversky and Shafir 1992, Mogilner, et al., 2008). This invisible restraint can result in a higher possibility of decreased sense of self-determination and lower satisfaction perceived by the choosers, thus reduce their enjoyment from the outcome (Deci & Ryan, 1985; Ryan & Deci, 2000, as cited in Mogilner, et al., 2008). As a result, Cotton Bureau will need to consider implementing both assortment and categorization on their website to provide an organized and pleasant browsing experience.

Evaluation

To test whether assortment, categorization or the combination of both can help the users with a faster and more satisfying decision-making process, thus boosting the overall shopping experience, a research experiment will be conducted to test the ideal format of presenting a large

number of choices on a website. To test the effect of each factor, all participants will be recruited and provided with a pre-study survey to report their familiarity with the domain of choice as a higher familiarity reduces the impact of choice overload (Scheibehenne et al., 2010). A pretest will not be provided to avoid pretest sensitization, which pre-exposes participants to the content, therefore, raise their familiarity with the topic (Crano et al., 2014). The two IVs (independent variables) are categorization and assortment. The outcome variables are the time taken for the customers to find the desired product and their overall satisfaction rate, as these are usually the most crucial components of a pleasant shopping experience and can directly determine customers' willingness to visit the same site again.

In this study, all selected participants will be asked to browse a webpage that contains choice overload on a computer and make a selection based on personal preference. This study will be a between-groups experiment where participants are randomly assigned to one of the four conditions, 1) neither assortment nor categorization, 2) assortment only, 3) categorization only, or 4) having both assortment and categorization and will be asked to make a purchase. As this study examines the ideal format of presenting a large amount of content on a webpage, the two outcome variables are 1) time taken to find the desired product and 2) customers' overall satisfaction rate. To assess the time taken for them to find the product, researchers will be timing the entire decision-making process, including participants browsing and making a final selection. At the end of the study, participants will be provided with a series of questions to evaluate their overall satisfaction rate across the entire experience. Questions include how they would rate the overall experience, if they would recommend this website regarding the design and layout, to their family and friends, if they would personally come back to shop at this website again, etc., will be mentioned in the survey. Participants will be reporting their satisfaction score on a 5-

point Likert scale, 1 as being the negative extreme (extremely unsatisfied / never recommend / never come back) and 5 as being the positive extreme (extremely satisfied / very likely to recommend / very likely to shop again).

The study result will be analyzed with a 2 (assortment: yes vs. no) x 2 (categorization: yes vs. no) factorial ANOVA. Researchers will be comparing the time spent and satisfaction score across the four conditions. The mean of users' time taken to find the desired product and their satisfaction score will be calculated and organized in a 2 x 2 table. A factorial ANOVA will be introduced to test if there is a statistically significant difference between the four conditions. Assuming there is a significant difference, a Post Hoc test will be then used to determine the best condition(s) among the four.

At the end of this experiment, an optimal format of presenting a large number of choices can be revealed as a suggestion for the web designers. Two outcome variables, time taken for the customers to find the desired product and their overall satisfaction score, were examined to reflect their perception of choice overload. The impact of assortment and categorization was studied to test their influence on choice overload. Both factors were anticipated to moderate the impact of choice overload by presenting all available choices under the corresponding category and smaller subgroups at each time. The findings can be beneficial to the user experience field because no matter the content designers need to present, customers are likely to make an impression and judgment based on the first look at the interface. With a disorganized and cluttered screen, consumers will be less patient and satisfied with the experience. Designers should be considering using features such as assortment and categorization to assist users in browsing an organized and less-distracting environment.

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