

Original Article

# An Analysis of the Impact of Choice Overload on Inducing Decision Paralysis in the Online Food Ordering Industry

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**Abstract** - In today's world, consumers enjoy an extensive array of choices, but the sheer volume of options doesn't always guarantee a better customer experience. In fact, this abundance of choices can often lead to decision paralysis and decreased satisfaction. This research paper investigates how choice overload influences decision paralysis in the Indian market, particularly focusing on online food delivery apps. By addressing a critical gap in the existing literature on information overload and decision paralysis, this research offers a fresh perspective. Using a quantitative approach, data was gathered from 80 participants residing in Bangalore by employing various standardized scales. The results, analyzed through t-tests and regression analysis, underscore a significant relationship between choice overload and decision paralysis, with age emerging as a pivotal factor. Surprisingly, gender did not demonstrate a substantial influence on the levels of choice overload or decision paralysis. These findings emphasize the necessity for redesigning and streamlining food delivery platforms to optimize the choice architecture, especially for users below the age of 40, to enhance the overall user experience. In doing so, businesses can reduce order abandonment and increase user satisfaction. Furthermore, this research has broader implications for online businesses and researchers interested in delving into consumer behavior and decision-making processes in digital settings.

**Keywords** - Decision paralysis, Choice overload, Food delivery apps, Order abandonment, Consumer behavior.

## 1. Introduction

In today's world, the range of choices available to consumers is vast and continually expanding. While this variety might initially seem beneficial, offering a plethora of options, it can also lead to a phenomenon known as decision paralysis. Decision paralysis occurs when the effort involved in analyzing and deciding outweighs the benefits gained from that decision [1]. This abundance of choice can leave individuals feeling overwhelmed, leading to difficulty in making a decision at all. The concept of choice overload, characterized by the overwhelming number of options, plays a significant role in decision paralysis. Factors such as the size of the assortment, the complexity of evaluation, and the diversity of products contribute to this overload. On the other hand, decision paralysis involves feelings of anticipation, overthinking, and a struggle to take action [1]. While choice is generally considered a positive aspect of modern life, an excess of options can lead to stress and anxiety [3]. This can be particularly evident in areas such as technology, consumer goods, education, and career paths. The fear of making the wrong decision can result in decision fatigue, where individuals feel drained by the process of decision-making. By understanding the relationship between choice overload and decision paralysis, individuals can approach decision-making more consciously. This awareness can help them navigate the

complexities of an abundance of choices and make more informed decisions.

Previous studies have been conducted to unearth the impact of choice overload on decision paralysis, and results from these studies have been recorded for future reference. A study conducted in the Romanian consumer market [1] investigated the impact of choice overload on decision paralysis in the retail industry. The study discovered that there was no significant difference in how males and females perceive the mentioned constructs. Moreover, Generation Y was seen to be more impacted by over-choice, whereas Generation Z was found to be significantly more plagued by the fear of missing out on better options, no matter what they select. Another study, conducted in the context of the Philippines [2], examined the impact of choice overload on decision paralysis in the context of grocery shopping. After analysis of the results, the study proved that people are more likely to give up on their choices when they feel confused by the abundance of options available to them. They are also more likely to have information that contradicts what they initially thought was true when more options are presented.

There have also been studies conducted to measure the impact of choice overload on decision paralysis in the setting



of the food and beverages industry. A study conducted by a British restaurant [4] encapsulates the observed decision paralysis when dining at their restaurant. This is so severe, especially amongst the younger “Gen Z’s”, that some of them even request the restaurant to allow them to preview the menu beforehand. Some people suffer greatly from regret anticipation, which is the feeling that one gets when they think or realize that things could have turned out better now if they had made a different choice [5]. The study discovered that Gen Z and millennials (between the ages of 18-43) were more anxious while ordering food when compared to their counterparts, Gen X. Another research paper [6] aimed at uncovering the existence of decision paralysis when placing orders in a restaurant and shedding light on consumer behavior, established a substantial relationship between choice overload and decision paralysis. Moreover, after an in-depth deconstruction of their results, they discovered that decision paralysis was more pronounced when customers were exposed to similar choices and that customers preferred concise product information.

Furthermore, in the 21<sup>st</sup> century, where people are continuously exposed to the internet, the options available to them have increased multifold. Especially with the advent of online food delivery apps like Zomato, Swiggy and Uber Eats, consumers are being provided with an extensive menu of options at their fingertips. But the downside lies in the potential for choice overload, as the vast array of options may leave customers grappling with making decisions. However, there is a dearth of studies that focus on whether choice overload induces decision paralysis, specifically within the realm of online food delivery apps. By examining the same, it can help shed light on the underlying mechanisms that influence decision-making in this context.

This research paper delves into the impact of choice overload on decision paralysis among users of online food delivery apps in India. It also seeks to understand how demographic factors such as age, gender, and employment status contribute to the experience of choice overload and decision paralysis. Data collection was carried out using Google Forms through convenience sampling, with a standardized survey measuring the extent of choice overload and decision paralysis among participants. The outcomes of this research are anticipated to offer valuable insights into consumer behavior within the online food delivery market. This could be particularly beneficial for app developers, marketers, and researchers keen on understanding decision-making processes in the digital marketplace.

## 2. Methodology

### 2.1. Research Aim and Hypothesis

The study aims to investigate the extent to which choice overload impacts decision paralysis and decision-making processes in the context of food delivery platforms in the Indian market and the degree to which it differs with age and

gender. It seeks to assess the extent to which the abundance of menu options and choices available on these platforms influences consumer decision-making, ultimately determining its impact on user satisfaction and order abandonment. Through comprehensive data collection, analysis, and insights, this research aims to provide valuable information to both food delivery platforms and the broader food industry on how to optimize the user experience and menu design in light of choice overload in the Indian context. Understanding choice paralysis can better help individuals make more informed decisions and create environments that foster effective decision-making and well-being.

The following are the hypotheses of the study:

H<sub>01</sub>: There is no significant impact of choice overload on decision paralysis.

H<sub>a1</sub>: There is a significant impact of choice overload on decision paralysis.

H<sub>02</sub>: There is no significant difference in Males and Females with regard to choice overload.

H<sub>a2</sub>: There is a significant difference in Males and Females with regard to choice overload.

H<sub>03</sub>: There is no significant difference in Males and Females with regard to decision paralysis.

H<sub>a3</sub>: There is a significant difference in Males and Females with regard to decision paralysis.

H<sub>04</sub>: There is no significant difference in younger and older individuals with regard to choice overload.

H<sub>a4</sub>: There is a significant difference in younger and older individuals with regard to choice overload.

H<sub>05</sub>: There is no significant difference in younger and older individuals with regard to decision paralysis.

H<sub>a5</sub>: There is a significant difference in younger and older individuals with regard to decision paralysis.

### 2.2. Research Design and Data Collection

This study is a quantitative study as standardized scales and surveys were used for the purpose of achieving the research objective. The paper uses convenience sampling through a Google form survey. The Google form consisted of a filter question and a few demographic questions related to gender, age, economic status, etc. Finally, four standardized scales pertaining to the primary topic of research. The filter question was: “Have you ever ordered food online?”. This essentially filters out all those who haven’t used an online food delivery platform before as it would not apply to them, which thereby serves as an exclusion criterion.

The survey had a total of 81 responses, yet after the filter question, one respondent was removed. The final sample size was 80 units. The sample consisted of 43.8 percent of people who were aged 40-55, 28.8 percent from 24-39, 20 percent

below 18, 5 percent from 56-64 and 2.5 percent from 18 to 23. However, this paper split participants into two age categories (Below 40 and Above 40) - 51.3 percent were below 40, and 48.8 percent were above 40. Out of the 80 people surveyed, 2 of them were non-binary so the sample accounted for only people with a male or female gender. Thereby, out of 78 individuals, 45 percent were male, and 52.5 percent were female.

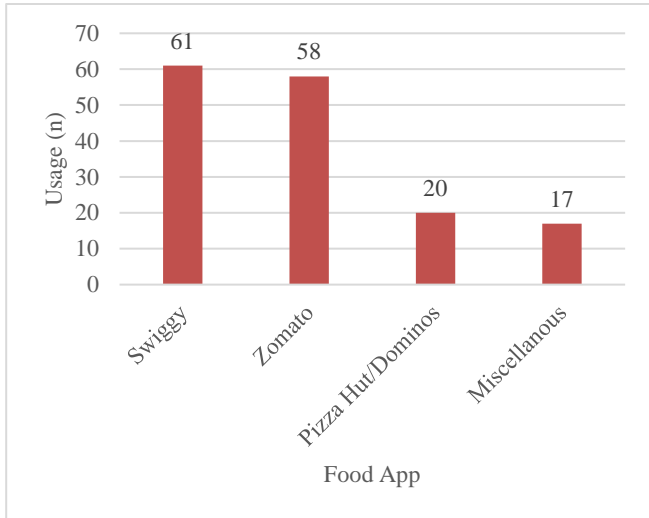


Fig. 1 Usage of food delivery apps (N=81)

As observed in Figure 1, the most used apps for food delivery by the participants were Swiggy and Zomato, followed by the Pizza Hut/Dominos app. Some respondents also use miscellaneous apps like Uber Eats and Doordash.

### 2.3. Scales and Tools Used

A Likert scale was used to measure the degree of impact choice overload had on decision paralysis by allowing participants to choose statements that represent their decision-making behavior. Participants had to choose between options that were displayed from a range of 1 (strongly disagree) to 5 (strongly agree). The dependent variable of this study, Decision Paralysis - is the state of confusion of an individual in making the most beneficial choice with the least opportunity cost. This was seen in statements such as: “The more I learn about these food options, the harder it seems to choose the best” and “After I place my order, I wonder what would have happened if I had chosen differently”. Three segments were used to evaluate the dependent variable, i.e. ‘Decision Paralysis’. Six questions under evaluation cost, which is the effort, time and resources needed to assess a decision one is about to make, where the last two questions were reverse coded and were created by Heitmann et al. (2007) [7] and Cooper-Martin (1994) [8] but have been customized especially for food delivery. Another segment that consisted of ‘Regret Anticipation’, which is the feeling that one may regret an action they are about to take, had four statements created by Schwartz et al. (2002) [9] and Tsiros &

Mittal (2000) [10]. The last segment assessed ‘Inaction and Delay’ - which is the inability to act due to hesitation or indecision, had six questions and was created by Mann et al. (1997) [11].

Furthermore, the independent variable was ‘Choice Overload’, which is the abundance of choices offered to a consumer. This is assessed in statements such as: “There are so many food options to choose from that I feel confused” and “With that many options, I have a hard time identifying/distinguishing product characteristics”. Higher scores on the scale showcase a higher degree and exposure to the construct, while lower scores showcase a lower degree of prevalence of the construct of decision paralysis.

In order to assess choice overload, the survey had one segment devoted to product overload perception, which is the idea that customers may feel overwhelmed due to the sheer volume of products provided to them. This scale is composed of six statements created by Heitmann et al. (2007) [7] and Sproles & Kendall (1986) [12].

### 2.4. Ethical Considerations

Prior to the initiation of data collection, explicit informed consent was procured from all participants in the study. This was enacted by explaining things briefly at the start of the Google Form survey. This way, participants agreed to be part of the study right when they began answering the questions. This undertaking was reinforced through a definitive statement as follows: “By proceeding with the survey, you indicate your consent to participate in this study, having read and understood the information provided above.”

It was guaranteed that the information they provide will be kept confidential and their identity will be revealed to no third party. Furthermore, including the aspect that there is no potential risk of responding to the survey, along with the fact that they have the ability to terminate their participation at any point of the study if they feel any sort of discomfort.

### 3. Results

The following section presents the results of the study, providing a comprehensive analysis of the collected data. Through meticulous examination and interpretation, valuable insights are offered into the research questions posed in this investigation.

As observed in Table 1, the regression analysis was carried out with choice overload as the only independent variable. The predictive effect of choice overload was confirmed,  $b=1.16$ ,  $t(79)=6.34$ ,  $R^2=0.34$ ,  $F=40.15$ ,  $p<0.01$ .

Essentially, choice overload explains 34 percent of the variability in the respondents’ decision paralysis scores. Through this test,  $H_{01}$  has been rejected.

**Table 1. Regression Analysis of Choice Overload on Decision Paralysis (N=80)**

Model	B	SE B	t	p
Constant	21.44	3.92	5.47	<.001***
Choice Overload	1.16	0.18	6.34	<.001***
R <sup>2</sup>			0.34	
F			40.15	<.001

\*\*\*p<0.01, \*\*p<0.05, \*p< 0.10

B = Coefficients

SE B = Standard Error

Conducting an independent sample t-test in Table 2, it can be inferred that there are no significant differences in the decision paralysis scores of male respondents (M=45.25, SD=11.34) and female respondents (M=44.11, SD=12.67), t(71)=0.4, p>0.05. Similarly, there are no significant differences in the choice overload scores of male respondents (M=21.25, SD=6.14) and female respondents (M=19.11, SD=5.48), t(71)=1.56, p>0.05 (Table 2). Hence, the null hypotheses H<sub>02</sub> and H<sub>03</sub> have been retained for both these variables, and alternative hypotheses have been rejected.

**Table 2. Independent T-Test Analysis of Choice Overload (CO) and Decision Paralysis (DP) Scores of Respondents Based on Gender (N=72)**

		n	M	SD	t	p
<b>DP</b>	Male	36	45.25	11.34	0.4	0.689
	Female	36	44.11	12.67		
<b>CO</b>	Male	36	21.25	6.14	1.56	0.123
	Female	36	19.11	5.48		

\*\*\*p<0.01, \*\*p<0.05, \*p< 0.10

**Table 3. Independent T-Test Analysis of Choice Overload (CO) and Decision Paralysis (DP) Scores of Respondents Based on Age (N = 80)**

		n	M	SD	t	p
<b>DP</b>	Below 40	41	49.78	11.06	3.72	<.001**
	Above 40	39	40.62	10.96		
<b>CO</b>	Below 40	41	23.18	5.28	3.88	<.001**
	Above 40	39	18.21	5.76		

\*\*\*p<0.01, \*\*p<0.05, \*p< 0.10

As can be seen in Table 3, there is a significant difference in the two age groups with regard to choice overload as well as decision paralysis, as p<0.01. In the case of decision paralysis scores, there is a significant difference between respondents below 40 (M=49.78, SD=11.06) and respondents above 40 (M=40.62, SD=10.96), t(79)=3.72, p>0.05. Similarly, it can be inferred that there is a significant difference in the choice overload scores of respondents below

40 (M=23, SD=5.28) and respondents above 40 (M=18.21, SD=5.76), t(79)=3.88, p>0.05. Hence, by this effect, the null hypotheses H<sub>04</sub> and H<sub>05</sub> have been rejected.

#### 4. Discussion

The findings underscore the significant impact of choice overload on decision paralysis, particularly evident in the context of food delivery apps. While the prevailing belief suggests that a plethora of choices enhances decision-making flexibility and freedom, the results challenge this notion. Instead, they indicate that an abundance of options can lead to decision paralysis. This phenomenon can be attributed to several factors. Human cognitive resources are inherently limited, and an excessive number of choices can overwhelm individuals, making the decision-making process more challenging. This overwhelming feeling not only drains cognitive energy but also increases the likelihood of individuals choosing to postpone the decision altogether. A classic study [13] exemplifies this concept. In their 2000 study, participants were presented with either a large selection of 24 gourmet jams or a limited choice of 6 flavors. Surprisingly, only 3 percent of customers who encountered the larger selection made a purchase, compared to 30 percent in the smaller selection group. This demonstrates that while a greater number of options theoretically increases the likelihood of finding a suitable choice, it leads to decision fatigue and, ultimately, decision paralysis.

The analysis also revealed that there was no significant difference in choice overload and decision paralysis scores between males and females. This suggests that gender may not play a significant role in how individuals respond to choice overload or decision paralysis in the context of this study. However, when age was considered, a notable difference emerged between participants below and above 40 years of age. Individuals below 40 exhibited significantly higher levels of choice overload and decision paralysis compared to those above 40. Younger individuals, particularly those who have grown up in an era inundated with digital information and choices, may be more susceptible to information and choice overload, making decision-making more challenging for them. This is consistent with the findings of previous literature [14], which suggests that young adults are generally more likely to experience information overload. On the other hand, older individuals may have developed better coping mechanisms for dealing with choices over time. They may have faced more complex decisions in their lives and have developed strategies to navigate them effectively. A study on resilience and coping mechanisms in older people [15] highlighted the importance of these factors in regulating the stress response. Additionally, older adults may have more confidence in their decision-making abilities due to their life experiences [16]. Furthermore, younger individuals may also experience a greater fear of missing out (FOMO) due to peer pressure and the influence of social media. FOMO is more prevalent in those between the ages of 18 to 33. According to

a survey, over two-thirds of respondents in this age bracket said they frequently experienced FOMO. [17]. This fear can lead to a higher fear of missing out on options and make it harder for them to commit to a choice, contributing to decision paralysis.

Another important aspect to consider is why there was no significant difference in the prevalence of choice overload or decision paralysis between males and females. This finding suggests that men and women face similar levels of difficulty in making decisions when ordering food online. One possible explanation is that this research specifically focuses on whether choice overload causes decision paralysis in the context of online food delivery apps. Food is a necessity that is equally important for both genders, which could explain why there is no difference in how men and women experience decision-making in this context. It's worth noting that while the current study did not find a significant difference, past literature has suggested that men and women may have different processing mechanisms and may experience information overload and decision paralysis differently. For example, A study [18] revealed that men may prefer to purchase long-term things, while women might like shopping for more aesthetically pleasing items like clothing which is why they experience choice overload and decision paralysis when shopping for these goods, respectively. However, this difference may not extend to food choices, as evidenced by another study [1], which found no gender difference in how individuals perceive choice overload and decision paralysis. Overall, this study's findings suggest that males and females may have similar cognitive processes and decision-making strategies, at least in the context of digital food delivery platforms. However, it's important to note that while this study aligns with these findings, other research papers have shown that there can be significant differences in decision paralysis when it comes to food ordering.

## 5. Conclusion

The primary finding of this study underscores the significant impact of choice overload on decision paralysis. It was also found that there was no difference between males and females regarding both choice overload and decision paralysis. However, a significant difference was observed when age was considered, with individuals below the age of 40 experiencing a higher degree of both decision paralysis and choice overload. These findings highlight the significance of taking age and gender into account when examining the effects of choice overload on decision-making in the context

of digital food delivery platforms. The findings suggest that redesigning the platform to reduce choice overload and decision paralysis for users could be beneficial. Users of online food delivery platforms may make inefficient decisions as they consume more time evaluating costs, experience inactions and delays in making decisions, and face regret once their choice is made. To enable consumers to make more informed and confident decisions and reduce anxiety during choice overload, several strategies can be employed.

Firstly, platforms can offer curated menus and personalized recommendations based on user preferences or previous orders to reduce the number of choices and make decision-making easier. Visual menus with images and descriptions can help users visualize their options better and make decisions faster. Additionally, highlighting ratings and reviews from other customers provides social proof and helps users gauge the quality of the food. Furthermore, progressive disclosure can be used to present information gradually, starting with basic details and allowing users to delve deeper if they want more information. This prevents users from getting overwhelmed by a load of information for a single food item. Lastly, AI tools such as live chatbots can assist users who are struggling to decide or have generic questions.

However, several limitations of the study require acknowledgement and consideration. The study's sample size, consisting of 80 participants, while sufficient for a quantitative study, may not adequately represent the diverse population of online food delivery users in India, thus limiting the generalizability of the findings. Additionally, while the study accounted for demographic factors such as age and gender, other potentially relevant variables such as income level and cultural background were not considered. Furthermore, the presence of bias, particularly social desirability bias or memory recall errors, may have influenced participants' responses, as self-reported data on decision-making processes may not always align with actual behaviors. Despite these limitations, this study sheds light on the impact of choice overload on decision paralysis on online food delivery platforms. It highlights the need for measures to increase customer satisfaction and profitability within these businesses. By addressing this issue, businesses can facilitate quicker decisions, potentially increase turnover rates, and cultivate a loyal customer base. As the relationship between customers and platforms remains interdependent, mitigating such issues can be mutually beneficial for both parties.

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