

## RESEARCH ARTICLE

# Rigidity or fluidity? Does variety-seeking vary based on perceived threat during the COVID-19 pandemic?

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**Abstract:** The COVID-19 outbreak has significantly changed modern lifestyles and consumption patterns, prompting an increasing focus within consumer behavior research on exploring the impact of perceived threats and the quest for variety. In response to this exigency, our investigation endeavors to ascertain the correlation between the perceived threat posed by the coronavirus and the inclination towards seeking variety. Drawing upon established theoretical frameworks such as reactance theory and terror management theory, we aim to investigate if perceived threat of COVID-19 heightens individuals' propensity to seek greater variety in scenarios involving multiple choices. Our initial empirical investigations, conducted across two distinct studies, reveal an evident increase in individual tendency for variety-seeking in both stationery supplies and food items as their perceived threat from the disease intensifies. Furthermore, our third study underscores the nuanced nature of variety-seeking behavior under the influence of perceived threat, highlighting its modulation within predefined decision-making boundaries. Specifically, in situations characterised by heightened perceived threat, consumers exhibit a heightened tendency to seek variety among choices offered by different brands. Conversely, when presented with options within the same brand, their behavior diverges. Notably, this study highlights the intricate interplay between the perceived threat of COVID-19 and alterations in the pursuit of variety.

**Keywords:** Variety-seeking, COVID-19, consumer behavior.

## INTRODUCTION

The COVID-19 pandemic has led to a metamorphosis of our usual lifestyle into what is commonly known as the “new normal” (Alam *et al.*, 2023; Ashrafi & Easmin, 2023). Gong *et al.* (2023), Kirk & Rifkin (2020), Lim (2023), Sigala (2020), and Woodside (2020) observed that this shift has become increasingly evident in our routines and consumer habits, mainly in devoting more familial time due to lockdown or having a relaxing time on Netflix or online games. Another intriguing form of consumer behavior that was observed by the media was the inclination of the customers to try out unusual foods. Devlin (2020) highlights this pattern, which was unleashed in a survey where it was found that people, while adhering to the quarantine, were inclined by 45% to try out foods that they usually would not consume. The survey also found that there was a rise of 26% in the inclination of people to devour fancy and unconventional food delicacies. It was primarily these patterns that led to the idea of exploring the link between threats posed by COVID-19 and variety-seeking. In line with various theories such as the terror management theory (Greenberg *et al.*, 1986), the reaction theory (Brehm, 1966), and the evolutionary theory (Hill *et al.*, 2015), it can thus be anticipated that the higher the presumed threats posed by COVID-19, the higher the chances for the consumer to choose between various alternatives of food delicacies and stationery and travel options.

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The adoption of reactance theory and terror management theory proved instrumental in comprehending variety-seeking behavior amid the pandemic (Matarazzo *et al.*, 2023; Schindler *et al.*, 2023). Reactance theory elucidates individuals' responses to constraints on freedom, aligning with pandemic-induced restrictions that might prompt individuals to seek variety as a means of reclaiming perceived autonomy (Brehm, 1966). Concurrently, Terror Management Theory explains how individuals navigate existential fears; heightened mortality concerns during the pandemic may drive individuals to seek varied options as a psychological defense mechanism, offering distraction and reaffirmation of life (Greenberg *et al.*, 1986). Leveraging these theories establishes a robust foundation to explore how pandemic-induced constraints and existential threats influence variety-seeking behaviors, contributing significantly to understanding consumer behavior during crises.

Moreover, the impact of presumed threats posed on variety-seeking has been moderated by two other factors based on the patterns, namely, the selection of alternatives from various brands and also from that of the same brand. In consonance with Brehm & Brehm (1981) and Pyszczynski *et al.* (1999), it can be hypothesised that the higher people perceive the threat posed by COVID-19, the more they are likely to presume that their sense of independence, self-esteem, and control becomes narrow and constricted. Consistent with Levav & Zhu (2000) and Mandel & Smeesters (2008), as a result of this, they are more susceptible to pursuing a variety of other incoherent decisions to recondition their perception of independence, self-esteem, and control. Mandel & Smeesters (2008) opined that the factors of variety-seeking and reviving self-esteem are found to be nearly associated with one another. In like manner, Hill *et al.* (2015) have also opined that two other factors that may raise the levels of variety-seeking are the conventional state of mind and the strategic progression due to the pandemic. These factors will be explained further in the upcoming sections.

Potential theoretical and practical contributions of this paper are many. Firstly, it is appropriate and necessary to study our consumption patterns, taking into consideration the perils posed by the pandemic. Moreover, the effects of the pandemic on consumption patterns have been related to the factor of variety-seeking, thus providing an unprecedented empirical analysis of this aspect. Secondly, this paper exhaustively delineates the link between the threat of disease and variety-seeking and also the antecedent variables for high (vs. low) variety-seeking. These issues have not been given any attention

in the literature. Thirdly and lastly, this paper extensively sheds light on the moderating effect of the variables for different types of alternatives or choices available by leveraging both theoretical and practical pieces of evidence and arguments. The practical implication of the moderating impact is that, as this paper enriches the comprehension of variety-seeking, marketing professionals and executives can effectively manage the sales of their products.

The following sections of the paper will delineate aspects of variety-seeking and disease threats with the aid of systematic analysis. Thereafter, contingent on the background theories, the main and moderating predictions will be devised.

### Research objective

The research aims to achieve several key objectives within the realm of consumption patterns in the context of the COVID-19 pandemic. Firstly, it seeks to analyse consumption behaviors, specifically considering the impact of the pandemic on these patterns. Secondly, the study aims to empirically investigate and establish the relationship between the effects of the pandemic and the inclination towards variety-seeking behavior in consumers, presenting novel empirical analysis in this area. Thirdly, the research endeavors to delve into the connection between the perceived threat of disease and the tendencies towards variety-seeking behaviors, highlighting influential variables that have received limited attention in existing literature. Lastly, the study aims to explore and understand how choice types (choice within the same brand vs. choice across different brands) moderate the choices available in consumption behavior, particularly in the context of variety-seeking tendencies, contributing to a deeper comprehension of consumer decision-making processes.

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## LITERATURE REVIEW

### Variety-seeking

Inman (2001), Menon & Kahn (1995), Ratner & Kahn (2002), Ratner *et al.* (1999), Scriven *et al.* (2017), Post *et al.* (2023), and Streletskaia *et al.* (2023) opine that past studies reveal a pattern where customers are found to seek variety and, as a result, become more determined to choose products that are usually least preferential. Practical evidence has been found that supports this fact (Ratner *et al.*, 1999). In an experiment, individuals were tasked with assessing their experience of listening to a variety of songs. Based on the perceptions and experiences of the individuals, it was found that there was a fall in the

extent to which the individuals enjoyed listening to the favorite songs played repeatedly, followed by the songs that were played in a mixed sequence. Conforming to this, it can be assumed that the assessment of consumption experiences can be heightened by involving fewer preferred products in a setting where there are multiple alternatives to be chosen from.

Drolet (2002), Kim & Drolet (2003), Mittelman *et al.* (2014), and Menidjel *et al.* (2023) have observed that variety-seeking primarily transpires based on what items customers choose and how they do it. Drolet (2002) argues that this phenomenon continues to draw attention to decision processes as well. This was further leveraged in an experiment that she conducted where individuals were given the task of making three sets of choices between a low-quality/low-price option and a high-quality/high-price option. The outcome of her experiments unleashed an interesting pattern, where individuals who selected the low-quality/low-price option [high-quality/high-price option] in the first two choices were likely to select the high-quality/high-price option as their third choice. Concisely, it can be deemed that customers are more susceptible to altering their utilisation of decision processes and rules. In the same perspective, there was another observation in which customers belonging to an individualistic cultural setting are more likely to possess a stronger sense of variety-seeking in their choice rules than those belonging to a collectivistic cultural setting (Kim & Drolet, 2003). On the contrary, if the decision outcome turns out to be alike, that encourages customers to alter their decision processes (Mittelman *et al.*, 2014). In the fewest possible words, the phenomenon of variety-seeking can transpire in both decision processes and decision outcomes.

Prior studies conducted in these aspects also establish interpretations for variety-seeking. Firstly, McAlister (1982) and Sevilla *et al.* (2019) contend that one of the means of cutting down on satiation is variety-seeking. Satiation is comprised of a choice process and a choice outcome. Secondly, Kahn & Lehmann (1991) and Ariely & Levav (2000) surmise that the ambiguity related to future choices and information collection can be reduced by variety-seeking. Thirdly, Ratner *et al.* (1999) and Ariely & Levav (2000) deduce that variety-seeking is strengthened by past affirmative experiences of choosing a varied sequence. This implies that most of the time, customers pursue variety to boost their satisfaction with various encounters. Fourthly, another means of variety-seeking as identified by Ratner & Kahn (2002) is through interpersonal influence or the need for one to present themselves most finely. This is leveraged by the fact that the phenomenon of variety-seeking was found

to be more evident and recurring in public consumption situations than in a private setting. This is because of the customer's intent to present and appear in their finest versions in public. Additionally, Levav & Zhu (2009) and Yoon & Kim (2018) put forward that an individual can reinforce his perceptions of freedom and control using variety-seeking. It is believed by Levav & Zhu (2009) that when the decisions to be taken were bound to the physical specifications, the extent of variety-seeking in those situations was high. Likewise, another observation revealed that customers with lower levels of economic mobility exhibited patterns of variety-seeking to a great extent (Yoon & Kim, 2018). Other academicians such as Read & Loewenstein (1995), Simonson (1990), Simonson & Winer (1992), and O'Donnell *et al.* (2023) have also ascertained that in situations where there are higher levels of simultaneous choice than separate choice, the levels of variety-seeking exhibited are high. The variety of choices a customer can make could be impacted by the number of choices and alternatives the customer has to decide upon at a given time (Simonson, 1990). The individuals who took part in the experiment were given the task of choosing between two options, one of which was a simultaneous-choice condition, and the other was a sequential-choice condition. It was then noted that individuals who choose a simultaneous-choice condition are highly susceptible to exhibiting the phenomenon of variety-seeking. All these aspects, as found in the literature, stress the crucial role exercised by the phenomenon of variety-seeking. This study thus pays particular attention to the influence the disease threat posed by COVID-19, has on the phenomenon of variety-seeking.

### Perception of disease threat

Murray & Schaller (2010), Navarrete & Fessler (2006), Schaller & Park (2011), and Wu & Chang (2012) articulate that pathogenic agents and microorganisms can trigger both latent and unambiguous impacts on humans. In this aspect, Altizer *et al.* (2003), Roy & Kirchner (2000), and Wang *et al.* (2023) have also shed light, stating the importance of the impact on surviving the COVID-19 threat. Slovic *et al.* (1980) and Tomaka *et al.* (1993) stressed more on nurturing subjective comprehension of the perils posed by the disease than on nurturing an objective mode of comprehension. It was further claimed by Tomaka *et al.* (1993) that a subjective assessment of the perils or threats posed could impact the mechanisms that consumers would adapt to be able to combat the disease. Perceived vulnerability to disease (PVD), comprising perceived infectability and germ aversion tendencies, was initially suggested by Duncan *et al.* (2009) by putting the subjective assessment of

the threats into consideration. PVD entailed that the differences at an individual level were considered in the cases of different diseases. Furthermore, it was also noted that individual differences in the perception of the perils and threats posed can impact the resulting changes that may occur. Hogg & Mullin (1999) and Van den Bos (2001) signify that the high presumed threat of disease accounts for the fact that people with precariousness and apprehension regarding the perils posed by the diseases are highly susceptible to exhibit behavior patterns that emphasize formulating courses of action to alleviate the threat. More often than not, such behavioral patterns demonstrate exaggeration as a response to the threats posed or the implementation of unreasonable courses of action in the pandemic. Nicola *et al.* (2020) and Wong *et al.* (2020) believe that over-accumulation and amassment of day-to-day necessities, for instance, was a problem that was prevalent in the initial phases of the pandemic.

It has become even more important to have a clear understanding of the perils related to COVID-19, as this regulates the behavioral patterns of the customers (Alam *et al.*, 2023). Interestingly, many factors can aid in altering the understanding that resides in the minds of the customers. Goodwin *et al.* (2005) and Godleski *et al.* (2023) found that women are more susceptible to panic and anxiety as a response to the perils posed by the pandemic in comparison to men. Davis & McDonald (2004) opine that this sense of apprehension can be diminished by cultivating meaningful kinships with family members. The impact of the information provided by public service advertisements (PSAs) on the intention of the customers to amass goods and their perception of the threat (Kim *et al.*, 2020). The studies revealed that the more information provided to the customers, the more customers have a relaxed perception regarding the threats posed and the more likely they are to not amass goods and necessities.

We have found the aspects of perils posed by the pandemic, disease, apprehension of the disease, and its impact on consumer consumption patterns to be discussed in the previous studies. To put it succinctly, the influence of the perils and threats posed by the pandemic (COVID-19) on the consumption practices of customers in connection with their propensities to seek variety. The forthcoming sections will endeavor to explicate the main and moderating hypotheses of the study.

### **Core assumption: the effect of the cognised threat on variety-seeking**

Based on numerous theories, we argue that the threat associated with COVID-19 may have a positive impact on variety-seeking. Firstly, the idea of seeking more

freedom while facing more restriction may have an influence on seeking more variety when someone is facing a more cognisant threat. The reaction theory (Brehm, 1966; Brehm & Brehm, 1981) says that people become more motivated to widen their freedom and regain their power of control when their freedom and control power are restrained. The COVID-19 pandemic, for example, is forcing people to stay isolated and pushing them into a unique situation where they are facing restrictions in many socio-activities. The reactance theory says that when people possess a belief that they are open to exercising any particular behavior, and if that freedom is somehow hampered or is at stake, they will produce psychological reactions to re-establish the diminished freedom. So, the psychological reaction of an individual is the step taken by the individual to regain his or her freedom. The other outcome is the incremental change in preference due to threatened behaviors. When the freedom of choosing something is threatened, people start to demand it more than they would before (Brehm & Brehm, 1981). Also, we saw earlier that looking for more variety is very much related to someone enjoying more freedom and ability to control (Levav & Zhu, 2009; Yoon & Kim, 2018). In light of this, the reactance theory proposes that people will look for more variety when their lives and free activities are restricted. Secondly, the terror management theory (Greenberg *et al.*, 1986; Pyszczynski *et al.*, 1999; Pyszczynski *et al.*, 2004) says that people with a higher realisation of their deaths are more motivated to exercise their self-esteem. As we know, seeking variety and self-esteem restoration are closely connected (e.g., Mandel & Smeesters, 2008), so we can assume that the thought of a higher threat will encourage more variety-seeking.

Moreover, Huang & Wyer (2015) and Hernández-Fernández & Meneses-Falcón (2022) predict a similar sort of assumption with the assumption that death is abstract, as people who are living have not experienced it yet. When construal is abstract (e.g., Kahn & Isen, 1993; Laran, 2010), people tend to seek more variety in such situations. Huang & Wyer (2015) demonstrated that the rise of quantity in society can lead to a rise in variety-seeking, especially in situations where consumption is rather unrelated. Hence, it is assumed that the COVID-19 threat will cause a rise in variety-seeking in consumption domains that are not necessarily related to health. Lastly, an evolutionary perspective also supports such a phenomenon, as variety-seeking is considered an evolutionary tool to increase the survival ratio when the perceived threat of disease is high (Altizer *et al.*, 2003; Hill *et al.*, 2015; Roy & Kirchner, 2000; Yap & Kapitan, 2017). As an example, women chose multiple partners to sleep within a situation with a higher threat

of disease, according to empirical evidence provided by Hill *et al.* (2015). If we can summarise the basis of these theories, we assume a positive impact of the cognised threat of novel coronaviruses as far as variety-seeking is concerned. So the proposed hypothesis is:

**H1:** Variety-seeking tendency is higher when cognised threat of COVID-19 is high.

### Moderating impact of the choice-type

Although we assume that a higher COVID-19 threat level results in higher variety-seeking, the reverse pattern can also be observed. Studies show that people display adherence to conformity or prioritize stability whenever their self-identity is under threat. For instance, when disease-related threats are on the rise, people focus more on familiar objects (in-groups) and avoid new objects (out-groups) (Navarrete *et al.*, 2007; Wu & Chang, 2012). In the arena of food, Finkelstein *et al.* (2019) demonstrated a proven example: while selecting a chocolate bar, variety-seeking gets lower if the self-concept-confirming tendency is generated by a higher relational threat. Lastly, Huang & Wyer (2015) predicted that disease-related anxiety motivates for more stability, which has a connection with focusing on current preferences and ultimately results in lower variety-seeking. These above studies show the contradictory pattern of H1, mostly because of the preference-confirming strategy.

We would like to propose a slightly moderated variable for decision, depending on the effect of the cognised threat on variety-seeking. More precisely, freedom is likely to be considered very important when

choosing among multiple options for separate brands. For instance, Levav & Zhu (2009) mentioned all the decisions in the study, which were multiple decisions from multiple brands. Considering this, we set our assumption that high cognised threats will promote higher variety-seeking, largely due to the aspiration for personal freedom.

However, as far as options from the same brand go (such as choosing from the same brand but with multiple flavors), preference for multiple flavors becomes more important than freedom of choice. To illustrate it further, Inman (2001) showed in his research that variety in flavor had a strong relationship with sensory-specific satisfaction, which is not deeply related to seeking freedom but preference (McAlister, 1982; Sevilla *et al.*, 2019). Again, Huang & Wyer (2015) suggested that firm constructions ensure low variety-seeking. Decisions among multiple flavor options are more firm than decisions among multiple brands. Hence, it can be assumed that if the cognised threat of disease is high, variety-seeking will be reduced since people will choose from their existing preferences. This leads us to generate two separate decisions, opposite to each other as far as the impact of cognised threats on variety-seeking goes. Thus, the hypothesis is:

**H2:** The cognized threat of COVID-19 will vary depending on choice. More elaborately, as long as the cognised threat of COVID-19 remains high, for choice among different brands, the tendency of variety-seeking is high and, for choice from the same brand, the tendency of variety-seeking is low.

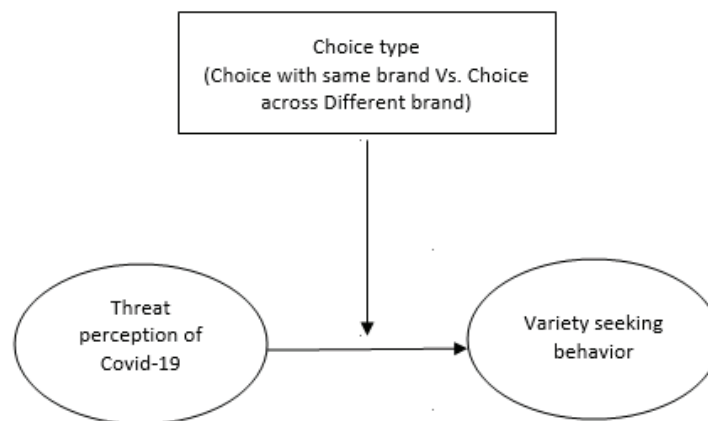


Figure 1: Theoretical framework (Kim, 2020)

The theoretical framework is depicted in fig. 1. The following sections, three empirical studies will be explained to illustrate the pivotal impacts (studies 1-2) and moderating impact (study 3) among different decision scenarios.

## METHODOLOGY

### Study 1: Testing the main hypothesis of the study (H1)

This study aimed to test the primary association between perceived COVID-19 threat and Variety-seeking. According to Roehm Jr. & Roehm (2005) and Kim *et al.* (2022), mood can significantly influence an individual's variety-seeking behavior, and hence, for this study, the mood variable was controlled and measured. Besides, this study considered age as a control variable. This is because participants' preferences for candy bars are highly connected to their age.

#### Research design and procedure

This study was based on 100 adults from Bangladesh, out of whom 63 were male and 37 were female. It is important to mention that a nominal remuneration was given to them for participating in the study. In the first study, the respondents were asked to imagine that they were in a supermarket and wanted to have candy bars. They were also shown five separate chocolate candy bar brands (Finkelstein *et al.*, 2019) and were asked to pick five candy bars in their preferred combination (in any way they liked). After that, the respondents received information related to the COVID-19 case in Bangladesh. For example, they were exposed to information about how many people were affected by COVID-19 in Bangladesh, how many death cases were reported, and how many people recovered after being affected by Covid-19. They were exposed to the information during the survey in the month of June 2020. For this study, the respondents were asked how they would like to rate their perceived threat of Covid-19. Participants were given statements like, "How deadly is COVID-19 to you? Do you think COVID-19 is a serious threat?" and their responses were obtained through two items based on a 7-point scale (Kim *et al.*, 2020), where 1 denoted 'not at all serious' while 7 represented 'very serious' (Cronbach alpha = 0.817). Lastly, respondents revealed their demographic information and rated the way they perceived their mood during that specific time period on a 7-point scale, where 1 was denoted as 'very bad' while 7 represented 'very good'.

## Results

In the beginning, an index for variety-seeking was generated by calculating the number of different brands in the respondents' five-choices. Additionally, a regression analysis was performed where the independent variables were mood, age, and perceived Covid-19 threat while the dependent variable was Variety-seeking. The regression model ( $R^2 = 0.072$ ) was found to be significant (Cohen's  $f^2 = 0.217$ ,  $F(3,96) = 3.72$ ,  $p = .036$ ). Results and showed that the Variety-seeking is negatively impacted ( $\beta = -0.34$ ,  $t = -3.73$ ,  $p = 0.025$ ) by age. On the other hand, results have shown that an individual's mood didn't have any influence ( $t = 1.73$ ,  $p = 0.272$ ) on Variety-seeking. Nevertheless, with regard to the positive effect on variety-seeking, research results indicated that the perceived threat had a marginal significance ( $\beta = 0.203$ ,  $t = 1.89$ ,  $p = 0.052$ ). As anticipated in H1, respondent's Variety-seeking in choosing candy bars was augmented by higher perceived threat. Lastly, another regression analysis was performed whereby perceived risk has been considered as a single independent variable and results demonstrated that the findings were identical to the previous result. Research results showed that Variety-seeking was positively impacted (Cohen's  $f^2$ ,  $0.035$ ,  $\beta = 0.235$ ,  $t = 1.72$ ,  $p = 0.079$ ) by perceived threat (Adjusted  $R^2 = 0.032$ ). Therefore, as anticipated, results supported the primary hypothesis, H1.

### Study 2: Replicating Study 1 with two different tasks

The results of Study 1 revealed that if people perceive the threat to be of a greater degree, they appear to exhibit a higher variety-seeking behavior to heighten their feelings of control and freedom. Hence, for doing this, individuals will make an attempt to adjust and modify their established likings by choosing items that are less preferred by them. For the purpose of the study, the previous studies were replicated in order to assess the association between decreased preferences and the high variety of seeing behaviors demonstrated by participants. Mittelman *et al.* (2014) suggest that the number of options and choices available to an individual impacts their decision-making related to variety-seeking. In past studies, variety-seeking measurements were based on multiple selections; however, in this study, another method of measuring variety-seeking was applied. The respondents were asked to choose only one option out of multiple options. This means respondents could only select one option out of a wide variety of options. Moreover, the main hypothesis was assessed based on two choice problems. Nevertheless, with a view to making statistical comparisons with perceived threats, the perceived vulnerability to disease was measured (Duncan *et al.*, 2009).

### Research design and procedure

Respondents in this study were 107 adults from Bangladesh, out of whom 50 were male and 57 were female, and they were provided with nominal remuneration for participating in the study. The procedure adapted for this study is identical to study 1. However, a small number of alterations have been made. The respondents were given information related to COVID-19, and their perceptions regarding the perceived COVID-19 threat were rated based on two items on a 7-point Likert scale (Cronbach's  $\alpha = 0.825$ ). Moreover, respondents were asked to presume that they were at a supermarket and had been shown five different soft drink brands. Following McAlister's (1982) procedure, respondents were asked to choose five soft drink brands in any order they desired. However, due to product availability issues, "Dr. Pepper" was replaced with the brand "Mirinda". When the respondents were done with the selection of the five soft drink brands, they were assigned another task: choosing five highlighter pens from two distinct brands. Overall, respondents had to pick only one option out of six separate combinations. Respondents were asked to express their perceived vulnerability to diseases based on a 7-point scale. However, it is important to mention that the perceived vulnerability to disease (PVD) was comprised of seven items (Duncan *et al.*, 2009), and lastly, respondents were told to share their general attitude toward the five separate soft drink brands. The opinions of respondents were obtained using a 7-point scale, where 1 was denoted as 'not much' and 7 represented 'very much'.

### Soda choice results

The variety-seeking index was generated by calculating the number of distinctive brands offered in the five soft drink selections/choices. Considering variety-seeking as the dependent variable and perceived threat as the independent variable, a regression analysis was conducted, which showed the regression model ( $R^2 = 0.027$ ,  $f^2 = 0.025$ ,  $F(1, 192) = 7.82$ ) to be significant ( $p$  value = .004). It was revealed that the variety-seeking was positively influenced by perceived threat ( $p = 0.023$ ,  $t = 3.65$ ,  $\beta = 0.297$ ). However, with the inclusion of another independent variable called "perceived vulnerability to disease" in the regression model, similar results were observed and the regression model was Adjusted  $R^2 = 0.038$ ,  $f^2 = 0.0545$ ,  $F(1, 192) = 6.11$  found significant ( $p$  value = .006). Findings also showed variety-seeking ( $\beta = 0.125$ ) was marginally (positively) influenced by perceived vulnerability to disease ( $t = 1.23$ ,  $p = 0.082$ ). On the contrary, a positive impact of perceived threat on variety-seeking was observed and therefore, in line with

the result of study 1, H1 was supported. Furthermore, depending on the overall attitude of respondents for each of the soda brands, index 1 was generated by calculating the mean of respondents' five general attitudes for each of the brands. Additionally, index 2 was generated by multiplying the overall attitude towards a brand with the number of that specific brand chosen. Index 2 refers to the inferred utility for the selected option combinations (Kim, 2020). Then, index 1 was divided by index 2 to develop a preference-based variety-seeking index. The higher number indicates the selection of brands that respondents liked and preferred the least. Finally, another regression analysis has been performed by considering preference-based variety-seeking index as dependent variable and perceived threat as independent variable. According to the study results, the regression model (Adjusted  $R^2 = 0.023$ ) was found to be significant ( $F(1, 192) = 6.32$ ,  $p = 0.003$ ) and respondents' perception of threat ( $\beta = 0.245$ ) was revealed to have a significant positive effect ( $t = 4.58$ ,  $p = 0.021$ ) on variety-seeking. Hence, the findings supported the prediction that individuals who perceive a higher COVID-19 threat tend to demonstrate a higher level of variety-seeking behavior by changing their preferred choices.

### Pen choice results

The respondents were presented with two distinctive pen brands and were instructed to select the pens from the given six different combinations. The choice combinations were re-categorised as high variety-seeking, low variety-seeking and medium variety-seeking. Low variety-seeking is considered as choosing all the same brands while high variety-seeking refers to the selection of two or three pens from separate brands. However, medium variety seekers are considered as respondents who, with the exception of one option, have selected all the same brands. Finally, by considering perceived threat and variety-seeking as the independent and dependent variables, another regression analysis was performed and study results indicated the regression model (Adjusted  $R^2 = 0.014$ ) to be significant ( $F(1, 192) = 5.23$ ,  $p = 0.038$ ). Therefore, it is evident that respondents' variety-seeking tendency is positively influenced by their perceived threat of COVID-19 ( $\beta = 0.21$ ,  $t = 3.42$ ,  $p = 0.023$ ) which supported H1.

### Study 3: Moderating impact of different types of choices (H2)

To identify the impact of an individual's perceived COVID-19 threat on variety-seeking, the moderating

effect of different types of choices was examined. To summarise, when the decision involved selecting across separate brands, it was expected to replicate the previous studies for multiple option selections. Contrarily, for the decision that involves selecting between distinct flavors of the same brand, the opposite trend was expected.

### **Research design and procedure**

Respondents on this study were 107 Adults from Bangladesh out of which 50 were male while 57 were female and they were provided with nominal remuneration for participating in the study. Respondents, by employing a between-subject design, were allocated and assigned randomly to one of two experimental settings (selecting across different brands vs. selecting within the same brand). The respondents received information related to the COVID-19 case in Bangladesh. For example, they were exposed to information about how many people were affected by COVID-19 in Bangladesh, how many death cases were reported, and how many people recovered after being affected by COVID-19, like in Study 1. They were also required to rate their perception (on a 7-point Likert scale) of the COVID-19 threat based on the same two items (Cronbach's  $\alpha = 0.752$ ) used in both studies 1 and study 2. In line with Study 1, respondents were again asked to select five separate candy bars. Nevertheless, a different sort of selection task was implemented, and respondents who were in the study to select between different brands were exposed to the same selection options, similar to study 1 (where they were shown five different brands; see figure 2). Respondents, who were in the study of selecting within the brand, were presented with a new condition where the five options belonged to the same brand (Cadbury Dairy Milk) and respondents were required to choose from different flavors from that existing brand (see Figure 2).

## **RESULTS AND DISCUSSION**

Like study 1, the variety-seeking index was generated by calculating the number of those different brands offered in the five soft drink selections/choices followed by a moderation test, by using the process analysis of Hayes (2017), for different types of choices. The model included type of choice task as moderator. Perceived threat and variety-seeking was included as an independent and dependent variable respectively with a bootstrapping of 5000. The study showed a significant ( $t = 3.18$ ,  $p = 0.03$ , 95% CI: [0.045, 0.058]) interaction effect (effect = 1.19) and therefore, supported H2. In the situation and condition of selecting between different brands, result is consistent with the previous finding

indicating that an individual's higher level of COVID-19 risk perception positively impacts variety-seeking. Therefore, respondents perceiving higher level of risk demonstrated higher level (estimated mean = 2.83) of variety-seeking compared to those respondents who reported lower level (estimated mean = 2.47,  $p = 0.091$ ) of perceived risk.

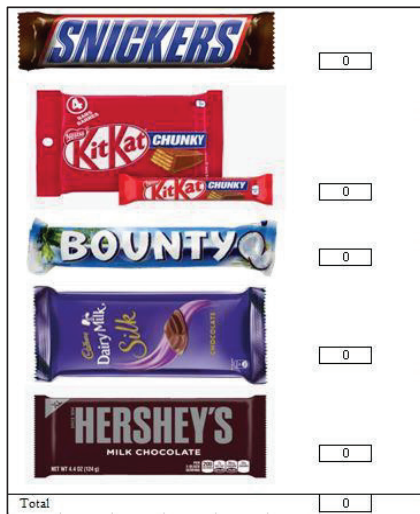
Conversely, the pattern was entirely opposite in the situation where respondents were required to choose products from the same brand (within the same brand). Results suggested that, as reported in figure 4, respondents having higher level of perceived risk showed lower level (estimated mean = 2.53) of variety-seeking in comparison to the respondents who reported lower level (estimated mean = 3.12,  $p = 0.007$ ) of perceived risk.

## **DISCUSSION**

### **Summary of the studies**

The study kept the association between perceived threat COVID-19 and variety-seeking as a focal point, and through the lens of terror management theory and reactance theory, it was predicted that consumers would seek more variety when they are presented with multiple options to choose from. In other words, consumers with a higher level of perceived risk would demonstrate a higher variety-seeking behavior. This paper presented three studies that tested the effect of the perceived threat of COVID-19 on an individual's variety-seeking tendency. The first study, which however excluded the mood factor, showed that the increase in perceived COVID-19 threat resulted in an increased level of variety-seeking tendency when respondents were presented with chocolate candy bars (Study 1). Study 2 found an identical impact on the choice of non-food (highlighter pens) and food (soda) related items. The study also demonstrated that preference-based decisions did not influence the respondent's tendency to exhibit a higher level of variety-seeking associated with the perceived level of COVID-19 threat. Therefore, it indicates that their drive for independence and sense of control plays an important role in their motivation. Nevertheless, despite being provided with multiple-choice actions, the respondent's high inclination towards variety-seeking was observed. Study 3 showed that different decision tasks (choosing from different brands vs. within the same brand) significantly moderated the impact of perceived levels of COVID-19 threat on variety-seeking. Participants with a higher level of perceived COVID-19 threat showed a higher level of variety-seeking when they were required to choose products across different brands. Contrarily, the opposite pattern was observed when participants were required to select products within the same brand.

Stimuli for study 1 and study 3



Decision within the same brand



**Figure 2:** Stimuli for Study 1 & Study 3  
Decision across Different Brands (Studies 1 & 3)  
Decision within the Same Brand (Study 3)

Stimuli for study 1 and study 3



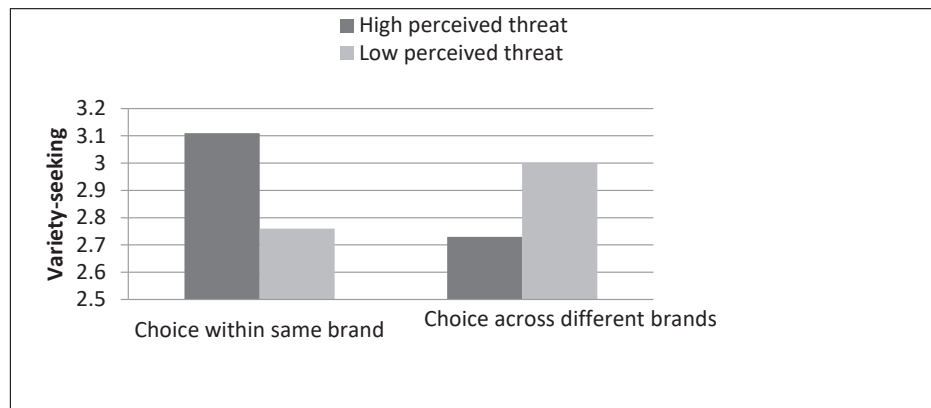
**Figure 3:** Stimuli for Study 2 (Soda & Pen Choice)

## Conceptual & Empirical Contributions

The above findings mark several notable conceptual contributions. Firstly, this study demonstrates the literature related to the threat information process as well as the outcome of threat cognisance. Past literature has recommended that human behaviors like xenophobia (Faulkner *et al.*, 2004), mating strategy (Hill *et al.*, 2015), ethnocentrism (Navarrete & Fessler, 2006), conformity tendencies (Wu & Chang, 2012), and anti-social behavior (Park *et al.*, 2003) can be significantly influenced by the

pandemic disease threat. This study, however, suggests a new outcome of disease threat in multiple-choice circumstances. More specifically, different levels of cognised threat can influence buying patterns in multiple-choice circumstances.

Secondly, this study broadens the horizons of understanding on variety-seeking. Current literature on the predecessors of variety-seeking focuses mainly on individual components like satisfaction level and individual motivation like maximisation of retrospective



**Figure 4:** Results of study 3

**Table 1:** Summary of the results

| Study   | Type of Item             | Impact of Perceived COVID-19 Threat on Variety-seeking                                                                                          | Additional Insights                                                                                                                                                 |
|---------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Study 1 | Chocolate Candy Bars     | Increase in perceived COVID-19 threat led to higher Variety-seeking tendency in chocolate candy bar choices.                                    | Mood factor was excluded.                                                                                                                                           |
| Study 2 | Highlighter Pens, Soda   | Extension of Study 1; Similar impact observed in non-food (highlighter pens) and food (soda) choices.                                           | Preference-based decisions did not influence variety-seeking associated with perceived COVID-19 threat. Drive for independence and control seemed key motivators.   |
| Study 3 | Different vs. Same Brand | Perceived COVID-19 threat impact moderated by choice tasks: Higher threat linked to more Variety-seeking when choosing across different brands. | Opposite trend observed when choosing within the same brand. Importance of choice tasks in moderating perceived threat's effect on Variety-seeking was highlighted. |

experiences (Ratner *et al.*, 1999) or minimising the later regret probability regret (Ariely & Levav, 2000). Previous studies, however, disregarded the environmental and social elements. This study has emphasised more on the concept of the COVID-19 threat on the global horizon. More specifically, we state that the cognized threat of COVID-19 significantly outlines the tendency toward variety-seeking. This paper additionally suggests a new predecessor for variety-seeking, which is the cognized threat level.

Thirdly, although we conceptualized a cause-and-effect relationship between variety-seeking and threat perception (threat perception → variety-seeking), the other way around scenario (variety-seeking → threat

perception) is also possible. Unlike most other empirical studies where the independent variable (IV) is directly manipulated, we measured the two constructs at a time. Regardless, this alternative perspective can be excluded for a couple of reasons. One, variety-seeking is measured by measuring the threat perception level in all studies, which makes it difficult to perceive whether the choice action of variety-seeking influenced the threat perception or not. Second, this alternative model is unable to fully explain the significant effect of moderating the various decision tasks in Study 3.

Fourthly, study 2 shows that cognized vulnerability to disease (PVD) and the cognized disease threat were impactful for variety-seeking (Duncan *et al.*, 2009). This

result suggests that the PVD and the perceived threat are separate constructs that have different and additional impacts on variety-seeking. However, future studies are required to examine the dissimilarity between perceived threat level and PVD. Fifthly, the findings of this study are somewhat similar to those of recently published articles related to responses to disease (Galoni *et al.*, 2020; Huang & Sengupta, 2020). More specifically, Galoni *et al.* (2020) suggested that a negative emotional reaction (e.g., disgust or fear) may be activated by the salience of transmissible disease cues. Subsequently, preference for familiar options is influenced by such emotional responses. On the contrary, Huang & Sengupta (2020) provided practical evidence that disease cues may lessen typical options for products. The findings in Galoni *et al.* (2020) are contradictory to ours in that selecting a familiar option indicates a low variety-seeking level. However, our study possesses a different decision structure (i.e., choosing one option versus multiple options) compared to the existing literature. The concept of selecting multiple options in the research paper should allow the participants to look for variety to regain their restricted self-esteem or freedom. On the other hand, participants may look for a familiar option when disease salience is high. However, future research is required to integrate both findings. Finally, higher variety-seeking under a higher cognised treatment level could be translated as a risk minimisation strategy. That is, people tend to select more than one option in order to minimise the chance of selecting the same option. Although such a phenomenon is possible, such a pattern could occur when the choosing criteria are rather known (vs. unknown). As we worked with the participants with decision options that were familiar to them (such as soda, pen, or chocolate candy), the alternative explanation remained weak.

Several managerial as well as practical implications are also suggested by the result of this study. First and foremost, this study gives a direct message to retailers and marketing managers that allowing consumers to go for variety is a better marketing tactic in the COVID-19 situation. For instance, online and offline stores should offer a variety of products or brands to their core target customers. Secondly, Study 3 provides a couple of product strategies for brand managers as long as the pandemic goes. More precisely, the brand managers could change the offerings for their target customers and thus maximise profit. Lastly, while ensuring the highest level of social constraints, most of countries are required to find actual ways to reduce the psychological and social costs of continuing the lockdown situation and social distancing. Our report further suggests that offering multiple-choice options can be considered one of the most effective methods to reduce the negative impact of

social barriers. Our society can be largely benefited if people can minimise the bitter feeling of the limitation of freedom simply by choosing from multiple options. Our report provides policymakers with several empirical implications for controlling the disease while minimising the psychological tension of rigorous social distancing.

### Limitations and proposals for future studies

This paper, however, has some limitations; hence, it suggests opportunities for further research. Firstly, although this study largely focused on the impacts due to other diseases or disasters could affect the variety-seeking similarly. Such other scenarios could be investigated in future studies. Secondly, the location and timing of collecting data could influence the result (i.e., we did the studies from April until June 2020). Future research in a different country and time can ensure greater validity for the questions that are mentioned in this study. Thirdly, due to the lockdown, we could only use online platforms to find the results of the empirical studies. Although the authenticity of online platforms is well established (e.g., Casler *et al.*, 2013; Kim & Kim, 2016; Kim & Seo, 2019), our main argument needs to be verified by using different samples, such as students. Additionally, a few different mechanisms for Hypothesis 1 were suggested in the theory section. Although study 3 results did second the mechanisms of freedom and the feeling of restoring control, the other mechanisms could not be excluded since we did not test these arbitrators in the present practical package. Further study is needed to provide accurate evidence, such as by conducting meditation and measuring mediators (Kim *et al.*, 2018; 2019). Lastly, further research could broaden the variety-seeking propensity of making decisions for others (Choi *et al.*, 2006) or group-level variety-seeking tendencies (Ariely & Levav, 2000; Lee *et al.*, 2018).

### CONCLUSION

The study systematically addressed its outlined research objectives concerning consumption patterns amidst the backdrop of the COVID-19 pandemic. Initially, it rigorously examined consumption behaviors, specifically contextualising and assessing the pandemic's pronounced impact on these behavioral patterns. This investigation provided crucial insights into the shifting paradigms of consumer choices amid the pandemic's disruptive influence. Subsequently, through robust empirical inquiry, the research substantiated a significant and discernible relationship between the pandemic's ramifications and consumers' proclivity toward variety-seeking behaviors. This comprehensive empirical

analysis encompassed diverse consumer items—ranging from chocolate candy bars to highlighter pens and soda—revealing a consistent trend of heightened variety-seeking tendencies in response to escalated perceived threats of COVID-19. Additionally, the study meticulously explored the intricate nexus between the perceived threat of disease and the nuanced variables influencing variety-seeking behaviors, thereby uncovering novel dimensions that had been previously overlooked in extant literature. Lastly, the research adeptly highlighted the moderating role of distinct choice types—within the same brand versus across different brands—on consumption behavior and the manifestation of variety-seeking inclinations. This nuanced exploration unveiled the pivotal interplay between perceived threat levels and variety-seeking, distinctly influenced by the nature of the choice tasks, thereby significantly augmenting our comprehension of consumer decision-making dynamics within pandemic contexts. In summary, the study accomplished its objectives by offering comprehensive insights into the complex interrelationships among the pandemic, perceived threats, and consumer behavior, thereby contributing significantly to the field's knowledge base.

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