The Effect of Scarcity and (No) Stated Preference on Sequential Purchases

Autoria

Rafael Demczuk - rafaeldemczuk@yahoo.com.br
Centro de Pesq e Pós-Grad em Admin - CEPPAD/UFPR - Universidade Federal do Paraná

Jose Carlos Korelo - korelo@ufpr.br
Centro de Pesq e Pós-Grad em Admin - CEPPAD/UFPR - Universidade Federal do Paraná

Danielle Mantovani - danielle@ufpr.br
Centro de Pesq e Pós-Grad em Admin - CEPPAD/UFPR - Universidade Federal do Paraná

Resumo

Scarcity is a recurrent theme in marketing and retail literature. Despite this fact little research have been addressed the influence of scarcity on consumers? mind-set. The main goal of this research is to test how the perception of scarcity on the driver product will influence individuals? intent to implement the second product purchase. We argue that after a deliberating and making a choice on the options, consumer?s shift to implement the purchase. Hence, if the product is not available (scarce), consumers will sustain an implementation state, following the choice to the second product available on the set. We also show that stating a preference even before the choice is made can induce consumers to keep the implementation mind-set. We perform two experiments to test our hypotheses. The results showed the perception of scarcity can induce consumers to sustain an implementation mind set rather than a deliberation in a sequential purchase.

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Abstract

Scarcity is a recurrent theme in marketing and retail literature. Despite this fact little research have been addressed the influence of scarcity on consumers' mind-set. The main goal of this research is to test how the perception of scarcity on the driver product will influence individuals' intent to implement the second product purchase. We argue that after a deliberating and making a choice on the options, consumer's shift to implement the purchase. Hence, if the product is not available (scarce), consumers will sustain an implementation state, following the choice to the second product available on the set. We also show that stating a preference even before the choice is made can induce consumers to keep the implementation mind-set. We perform two experiments to test our hypotheses. The results showed the perception of scarcity can induce consumers to sustain an implementation mind set rather than a deliberation in a sequential purchase.

Keywords: scarcity, implementation mind-set, deliberation mind-set, choice set

Introduction

In the retail market, consumers face a variety of situations regarding choices in a daily basis. In that regard the phenomenon of scarcity is always present, and consumers have to deal with decisions where products that they want to buy are not available. For example, an undergraduate student going to college in the morning enters a convenience store to buy a package of pen and finds the product is not available after asking the cashier. What is the probability of this student to buy a package of gum if they are not intended to do that, in the first place?

Past research shows that, when consumers decide to make a first purchase (decide to buy a driver item), they start an implementation process (Shopping Momentum Effect), and becomes more likely to buy a second product (target item – Dhar, Huber, & Khan, 2009). Further, when consumers are asked to define their preferences for one product before making a decision of buying it (Which to Buy Mind-Set – Xu & Wyer, 2007: 2008), they will increase their purchase likelihood. These effects are essentially driven by mind-sets that, once activated, will determine a subsequent behavior. However, it was not analyzed how product scarcity can influence implementation mind-set and consequently sequential purchases.

Despite scholars' have explored scarcity in the literature, little attention was dedicated to how the perception of scarcity can influence the attitudes and behavior in the context subsequent choice-set. We propose that the unavailability of product chosen in a set of products can influence the willingness to buy the target product of the choice set. We argue that if consumers deliberate on buying a product, they will tend to buy the next preferred product if the first one is not available. That effect of scarcity perception of one product triggers consumers to sustain an implementation mind-set influencing the choice of a subsequent product in the same choice set. We also argue this is determined by the prior preference on the choice set.

We build on literature from decision making process (Bettman & Park, 1980), arguing that the purchase are composed by two steps, deliberation and implementation mind-sets. Since consumers have pointed out the pros and cons of the options (deliberation mind-set) they will decide which option best meet their goals, leading to the purchase process (implementation mind-set; Gollwitzer, 1990; Dhar et al., 2007). Additionally, when consumers are introduced to a set of items, even if not asked to establish a preference

formally, they will transpose a deliberation and continuous in an implementation mind-set (Xu & Wyer, 2007). Here, we propose that implementation mind-set should be applied to sequential purchases even though driver product is under scarcity.

The remainder of the article proceeds as follows: first we develop a theoretical framework on consumers' heuristics, mind-set, prior preference, and scarcity to generate our predictions, which were tested under a pre-test and two experiments. Finally, we discuss the findings and present some implications.

Theoretical development

Decision-making process consists in a set of protocols about past experiences or prior product knowledge (Bettman & Park, 1980; Payne, 1982). Past research has shown that the assortment, valuation, and assimilation of information are influenced by the number of options and information complexity; it suggests that, as higher as the complexity of making decisions, people tend to simplify this process using heuristics (Iyengar & Lepper, 2000). In fact, if a behavior was effective for a goal achievement in an earlier situation and the person is confronted to an equivalent or even to an analogous circumstance, that process will be recovered and used to solve a problem in an effective way (Xu & Wyer, 2010).

In addition, consumer heuristics, that are applicable in the decision processes both in Marketing (Bettman et al., 1998; Leong, 1993) and in psychology (Chaiken, 1980; Shirai & Meyer, 1997) can be understood as consumers' rules, derived from the habit of previous choices in which there is the storage of standards for use in the face of a future problem (Bettman & Zins, 1997; Bettman & Park, 1980).

Furthermore, mind-set heuristic is the sum of cognitive processes in order to solve a problem (reaching a goal), responsible for generating or stimulating the mind-set (Gollwitzer, 1990), understood as a theoretical framework in order to explain the transfer of cognitive processes in diverse fields of psychology, or the existing complex relationship between cognitive and motivational processes. It proposes diversified steps that include sets of tasks for which consumers will seek the achievement of a goal (Fujita, Gollwitzer, & Oettingen, 2007; Henderson, Liver, & Gollwitzer, 2008) through the persistence of cognitive processes and evaluation criteria that are activated in the execution of a task. Once activated, it is generalized to other situations (affecting subsequent decisions – Xu & Wyer 2007).

In addition, mind-set is composed by two phases, deliberation and implementation (Gollwitzer & Bayer, 1999). The first one, deliberation stage, consumers' goals are determined considering the pros and cons and the costs and benefits of the alternatives, determining which goal will achieve a desired end. In the second stage, implementation mind-set, information will be chosen selectively. From the moment that target product was set; consumers begin to structure the steps to reach a certain goal doing questions "when, where and how", aiming to steering behaviors and actions to reach a consumption goal (Fujita, Gollwitzer, & Oettingen, 2007; Xu & Wyer, 2007). Thus, when consumers are situated in a deliberation phase they will collect the necessary information for decision-making, unlike the implementation, in which the execution of the elaborated planning occurs. Therefore, due to the characteristics and roles played by the consumers in each one of these stages, there is a greater propensity to execute the acquisition when they are located in the implementation, compared to the deliberation mind-set (Dhar *et al.*, 2007).

Heuristics are applied not only to the first acquisition, but also throughout the consumption episode; it is applied both to primary and for subsequent purchases (Dhar *et* al., 2007; Xu & Wyer, 2007). Thus, implementation mind-set can be extended to the sequential choices by considering the same consumption episode, causing consumers to maintain their purchasing condition derived from the initial decision through deliberation mind-set.

There are two main approaches correlated to shopping continuity, considering the same consumption episode through implementation mind-set. The first is defined as Shopping Momentum Effect, a psychological boost resulting from an initial purchase that encourages subsequent acquisitions (Dhar *et al.*, 2007). When consumers are exposed to a set of low similarity, the choice will be made individually to maximize the usefulness of each item. When purchases are made as a result of this condition (maximization of the ends), there is a high probability that individuals keep on their plan initially established (Dhar *et al.*, 2007).

Second, Which to Buy Mind-set occurs when an initial decision, based on a set of options will result either in the exclusion of all items or in the categorization of options by forming a hierarchy that guides consumers' choice. Thus, when such hierarchy is formed, the process will be continued for subsequent decisions by implementation mind-set, exerting influence in other domains not necessarily related to the initial decision (Xu & Wyer, 2007:2008).

The decision-making process can be described by means of steps. If so, individuals will move on to the second step where they choose the item. Finally, consumers will decide how to implement the decision through the acquisition. Thus, when the preference for a product is stipulated, there is an information processing through which to buy mind-set accessibility, even when considered as a different domain, increasing consumers' propensity to continue making purchases through implementation mind-set (Xu & Wyer, 2007:2008).

However, both related phenomenon were studied under availability condition. Here, we propose that product unavailability (also called as driver item) will lead consumers to enter in a scarcity mind-set, which in turn make consumers come into a inertial purchase mode influencing the willingness to buy the target option (also called as target item).

Here, we propose that scarcity will trigger and lead consumer to maintain their implementation mind-set. Thus, scarcity can be understood as a synonymous of commodity's unavailability; it can be operationalized into four ways, which are (1) when are restrictions on the number or in the suppliers, (2) when the costs of acquiring and providing a product is too high, (3) when consumers face constraints to own the products, and (4) when suppliers delay delivery (Lynn, 1989:1991).

Accordingly, scarcity was previously analyzed in terms of generating a sense of urgency (Aggarwal, Jun, & Huh, 2011), increasing product attractiveness (Gierl & Huettl, 2010), and leading consumers to follow a product choice hierarchy (Zhu & Ratner, 2015). Therefore, at time, there is no evidence that shows how product scarcity influences consumers' deliberation and implementation mind-sets.

Hence, we propose that implementation process will continue to sequential purchases due to scarcity mind-set. In other words, when consumers give up deliberation mind-set and enter in an implementation mind-set, this process will be strong enough to remain activated and command consumers' sequential decisions even though the driver product is scarce. More formally:

H1: When a target product is scarce (vs. available) consumers activates implementation focus, increasing (vs. decreasing) the propensity of acquiring target item.

Likewise, we propose that both mind-sets generate inertia moment, influencing sequential decisions (Gollwitzer, 1990; Xu & Wyer, 2007:2008). When a consumer has a goal and starts the implementation, there is a tendency for such a process to continue (Shopping Momentum Effect). The first acquisition will put the consumer in implementation mode for subsequent purchases, by replacing the deliberation for implementation mind-set, resulting in cognitive orientations that will interact with different decision making forms in a product purchasing (Dhar *et al.* 2007), effect that will remain under scarcity condition.

Also, when consumer are asked to stipulate their prior preference, even if a situation is not directly related to the consumption episode (Which to Buy Mind-set), they will eliminate a deliberative stage considering a purchase decision (Xu & Wyer, 2007:2008). Here, we predict that consumers, after decide which product they prefer, will enter in the

implementation mind-set, effect that will continuous also if driver item are under scarcity. More formally:

H2: Preference first (vs. decision-first) will moderate the implementation mind-set effect, increasing (vs. decreasing) consumer´s intention to buy a target item when they are exposed to a driver item scarcity (vs. control condition).

To test our predictions, we run a pre-test and two experiments. First, to show that driver item unavailability and product scarcity can be considered exchangeable terms, we run a pre-test. Next, across two experiments we provide evidences that scarcity lead consumer to enter in an implementation mind-set, consequently making individuals buy more a target item (Study 1). Additionally, we shown that preference previously stipulated will moderate the proposed relation (Study 2).

Pre-test

In order to develop a product unavailability stimulus that triggers participants scarcity' perception we ran a pre-test. Thirty-seven (37) respondents (59.5 female; M_{age} = 21.65 SD = 1.59) were asked to read a hypothetical scenario about a product choice unavailability. The situation was set in a retail store from their preference, in which they see five products in a shelf. After a while, deliberating on the five products, they decided to buy one of them. However, asking for the selected product to the salesperson, individuals were informed that it was not available anymore. Next, they choose to buy one of the four products left on the shelf, getting out of the store. After, respondents assessed questions regarding scarcity and unavailability, sample characterization and were debriefed.

We measured two scarcity dimensions. The first one was more broad and general, related to retail unavailability. The second was about the unavailability of the specific product in a set, which was chosen in the previous hypothetical scenario. These two dimensions are described below.

The first general aspect was accessed with two items adapted from Zhu and Ratner (2017). Respondents were asked "When limitations make impossible to buy goods, to what extent you consider these goods are scarce?" in 7-point scale varying from 1 = "Not scarce" to 7 = "Very scarce" and "Consider that one product is exposed in a retailer shelf, but you cannot buy it, to what extent you consider this product are scarce?" in 7-point scale varying from 1 = "Not scarce" to 7 = "Very scarce". An index of scarcity general perception was created considering the two items (α = .637). We performed a t-test using the index comparing the general mean by respondents in the scale (M = 4.47, SD = 1.78) with a fixed value of 3.50 (the indifference point of the scale). There was a significant difference where respondents evaluated the items as under scarcity given the precious scenario (t(36) = 3.32, p = .002).

Next, we tested the chosen product scarcity perception in the hypothetical scenario, using measurements adapted from Lynn (1989) and Lynn (1991). We asked participants the following questions "To what extent you consider the first product that you choose was abundant?" varying from 1= "Not abundant" to 7= "Very abundant", "To what extent you consider the first product you choose was scare" varying from 1= "Not scarce" to 7= "Very scarce" (the item was collected in a reversed scale), and "How would you describe the availability of the first product?", varying from 1 = "Unavailable" to 7 = "Available". An index of first product scarcity was generated (α = .624). Again, we performed a t-test with the index comparing the general mean in the scale (M = 3.01, SD = 1.40) with the fixed value of 3.50. Participants perceived the first product of the hypothetical scenario as less abundant (or more scarce; (t(36) = -2.13, p = .040). These results have validated both the perception of general scarcity and scarcity of the first product. Therefore, we can use similar manipulation in our studies.

Study 1 – The effect of scarcity mind-set

The goal of this study is to establish an initial support for our first prediction that product scarcity, in a set of items, should lead consumers to increase their likelihood to buy a target item. More specifically, consumers are more likely to buy a target product when they are presented to a set of items and the driver option is under scarcity (vs. when driver product is available).

Prior research has demonstrated that consumers will enter in an inertial mode that makes them keep on implementation mind-set (Xu & Wyer, 2007), consequently buying more. In accordance, we suggest that consumers will enter in a scarcity mind-set that will coordinate this process, making them keep on their implementation mind-set, impacting subsequent purchase decision.

Method

Participants and design. One hundred and seventy-four undergraduate students (50.6% female; M_{Age} = 21.13) from a south Brazilian university participated in a single factorial, between-subjects design resulting in two conditions (scarcity: present vs. absent).

Procedure. Respondents were invited to participate in a set of three unrelated inquiries, receiving R$ 5 (U$ 1.54) as a reward. In a room prepared for the study, six products were randomly organized in a table, which were cereal bar, post-it, text marker, chewing gum, pencil, and socks; these products were selected by a pre-test considering attractiveness, necessity, purchase intent, and relation to the respondent's context (university, food and clothing items frequently bought by students).

Participants were informed that those products had been left over from a previous study and each of them was being offered at a cost of R$1 (U$.31). Next, the experimenter asked participants their purchase intent (*Do you want to buy any of these items for R$1?*). Respondents that opt to do not buy were directed for check questions.

On the scarcity condition, after respondents had chosen their driver product, the experimenter has checked its availability in a separate 'inventory shelf'. Then, respondents were notified that the selected product was not available in stock. Following, participants were questioned if they would like to buy any other item for R$1 (*Do you want to buy another item for R$ 1.00?*). If they opt to buy any product, the experimenter return to the inventory shelf, verify its availability, delivery the product, and discount de value. On control condition the same process was adopted, with the exception that participants could have bought driver product without restrictions.

The dependent variable was the propensity to buy a target item. This process was repeated, wherein participants chose one product at a time. When a positive response was given, the value of R$1 was discounted and the product delivered, a process that was repeated until participants stopped buying. Finally, participants responded our two product evaluation items and demographic data were collected.

Measures

We measure product attractiveness *(How attractive are the products?)* and product necessity (*How much did you need to buy these products?*), both in 7-point scale, ranging from 1= “Not at all” to 7 = “Very much”. Cereal bar was the product with higher attractiveness (M = 5.05; SD = 2.06) and necessity (M = 2.84; SD = 1.81). In opposite, text marker was the product with lower attractiveness (M = 2.05; SD = 1.31) and necessity (M = 1.63; SD = 1.23). In addition, cereal bar purchase intent was 15% for driver and 22.83% for target option, in contrast to text marker that has 6.5% for driver and 12.3% as target purchase

option. The product attractiveness was correlated neither with driver nor with target purchase option (p> .05).

Results and Discussion

To compute our independent variable we checked driver product purchase intent. Results shows that there is no difference on consumer's intent to buy a driver item (*Wald* X^2 (1, n = 174) = 1.872, p > .05). Furthermore, we verified respondent's intent to carry out of driver item purchase. Thus, participants that did not buy driver item were removed from our sample to measure consumer's intent to buy target product (*n*=65). Our final sample was composed by 109 participants (52.3% female; M_{Age} = 21.24).

A logistic regression tested whether there was different purchase intention across product scarcity conditions. The dependent variable was coded as target item purchased = 1 and target item not-purchased = 0; the independent variable was coded as scarcity = 1 and control condition = 0. The analysis revealed a significant main effect of product scarcity. When participants were exposed to the scarcity (i.e., driver item unavailability condition), the target item were more likely to be purchased (64.5%) compared to the control condition (i.e., driver item availability; 36.2%; β = 1.166, X^2 (1, 109) = 8.358, p < .01, Odds Ratio = 3,209, see Figure 1).

Thus, study 1 demonstrates that, once deliberation process has been transposed into implementation mind-set, which is a result of a stated purchase intention, it will remain activated for sequential purchases. Furthermore, when consumers are presented to a scarcity condition they will present higher purchase intent. These results indicate that a mind-set, here also-called as scarcity mind-set, will make consumers keeping buying due to the permanence of the implantation process. To test if participants followed a preference when faced with the set of items and to test if preference could drive the increase of the choice of the target item in the scarcity condition, we ran another experiment.

Study 2 – The effect of (no) stated preference on scarcity mind-set

While prior research has shown both Shopping Momentum Effect and Which to Buy Mind-set singly (Xu & Wyer, 2007:2008; Dhar 2009), study 2 aims to demonstrate the interaction of such mechanisms adding scarcity condition. Thereby, when consumers are faced with a product scarcity they are more likely to purchase a target product (Study 1); but when individuals are stimulated to determine any kind of preference (whether or not related to the purchase context), they will enter automatically in the implementation mind-set.

Method

Participants and design. In the second experiment we have used a 2 (preference: preference-first vs. decision-first) by 2 (scarcity: present vs. absent) full factorial between subjects design. The sample was composed by 298 respondents (52.3% female; mean age=23.87) in an online panel.

Procedure. Respondents were introduced to a scenario about an online purchase, receiving a credit of R$15 (U$4.62; scenario: "*You will participate in a survey involving the provision of some items for purchase decision evaluation with limited information in the virtual environment. Therefore, we are providing to you an initial credit of R$15 for participating in this survey. This credit can be used on this research or can be kept for you. At the end of the study, you will participate in a lottery. If you are awarded, you can receive a credit or selected items. ").*

Participants were randomly assigned to one of the four conditions. In the preference-first condition, respondents were presented with five products, which were randomly select from a set of 8 items: mug, key chain, set of sticky notes, set of pens, stapler, desk paper organizer, plastic squeeze, and scissors, each one costing R$3 (U$.96). After, individuals were questioned which of that products they would prefer (*To start, please, point out which item you prefer. Please evaluate carefully all the presented options and then select your preferred item.*). In the decision-first condition, the intention to purchase a driver item was directly measured (*We want to know if you are interested in buying any of these items. Remember that you can use your credit (R$10) for this purchase.)*

Next, participants were presented to driver item scarcity condition (*Sorry for the inconvenience, we are without the selected item in our stock. You have R$10 of credit.*) or to control condition – the driver item availability condition (*Purchase completed successfully! Thank you for choosing this item, you have a credit of R$XX.)*

The following procedures were similar to study 1. The dependent variable was the propensity to buy a target item. This process was repeated, wherein participants chose one product at a time. When a positive response was given, the value of R$3 was discounted and the product delivered, a process that was repeated until participants stopped buying. Finally, checking variables were measured.

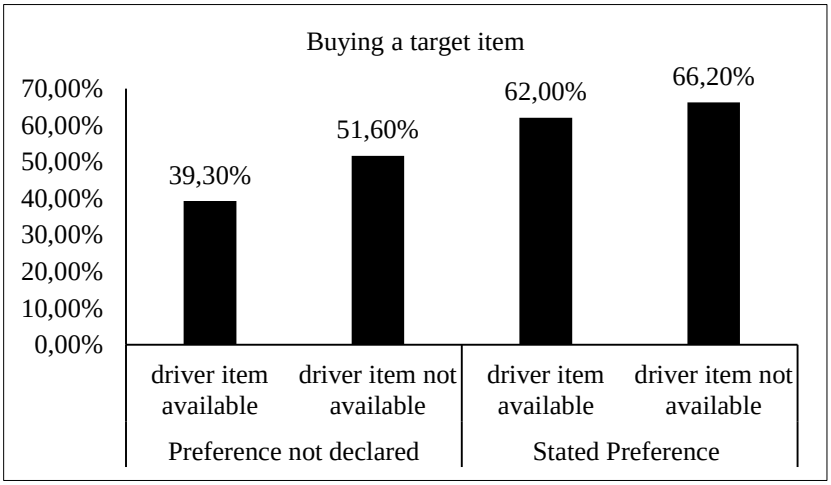
Results and Discussion

As the study 1, to compute our independent variable we checked driver product purchase intent. Results shows that there is no difference on consumer's intent to buy a driver item when analyzed scarcity condition (*Wald* X^2 (1, n = 578) = 0,312, p > 0,05), but there is a significant difference when analyzed stipulated preference (*Wald* X^2 (1, n = 578) = 4,085, p > 0,044). The final sample considered only participants who purchased the driver item (n=212; 56.1% female; mean age = 25.95). The rest of data were dropped.

A logistic regression was used to test our prediction. The dependent variable was coded as target item purchased = 1 and target item not-purchased = 0, the independent variable was coded as scarcity = 1 and control condition = 0, and the moderator variable was coded as preference-first = 1 and decision-first = 0.

The results have presented a non-significant effect of the driver item (unavailability vs. availability; β = -1.168; WaldX^2 (1,212) = 2.340; p= .126; Odds Ratio = 0,311), a main effect of previous preference (preference-first vs. decision-first; β = -1,609; WaldX^2 (1,212) = -1.609; p = .026, Odds Ratio = .200), and a significant interaction effect (β = 1,963; WaldX^2 (1,212) = 1.963; p = .0029, Odds Ratio = 7.117). Results are shown in Figure 2.

FIGURE 1 – CONSUMER PROPENSITY TO BUY A TARGET ITEM



When consumers were assigned to the driver item unavailability condition, they showed higher purchase intention compared to the availability condition. Regarding preference-first condition, participants presented higher propensity to purchase target item compared to those from the decision-first condition. Considering the interaction between the two variables, we can note that, in the unavailability of the driver item condition and the definition of the previous preference condition, participants presented the higher likelihood of buying the target item.

These findings support partially our second hypothesis, given to us evidence that consumers are trying to implement some hierarchy, defined previously both by the preference and when they are presented with a set of products. These events induce the implementation mind-set, which is maintained even with the unavailability of a driver item. Our results open possibilities to further reflection on mechanisms that reinforce implementation mind-set, which makes consumers peruse a higher goal purchase. Other experiments are needed to demonstrate that the continuity of the established hierarchy is the responsible to influence subsequent purchases.

General conclusions

The objective of this paper was to examine how driver item scarcity and prior preference enhances individuals' propensity to purchase a target product, effect that is guided by implementation mind-set (Goolwitzer, 1990).

In two experiments we show those implementation mind-set guild consumers' actions. More specifically, when individuals are confronted to driver item scarcity they will present a higher propensity to buy a target product (Study 1). Additionally, when consumers are stimulated to or create a product hierarch or to formally declare their preference, the implementation min-set will be activated and will guild consumers' subsequent actions. In the other way, when individuals were exposed to decision-first condition there was found no difference between condition.

Therefore, even if the driver product has not been requested explicitly to the previous preference stipulation, using a set of options presented to consumers characterizes the application of Which to Buy, where there is a development of a purchase hierarchy by viewing the options and inquiring about the purchase intention. In this way, the tendency is that consumers continue to do sequential purchases when exposed to a set of products, derived from the maintenance of the implementation mind-set.

This phenomenon corroborates previous studies (Dhar et al., 2007; Xu & Wyer, 2007:2008) evidencing that, when consumers determine their preference, they will move to the second stage of deliberation process, analyzing the information and deciding which product they want to purchase. This process eliminates the option of refuting all items on the set presented, even with the driver item scarcity; there will be no break in implementation process.

Regarding the managerial perspective, present study allows to optimize the consumption demands through the goals that the consumers aim for. Understanding how consumers' information is analyzed and processed allows retailers to direct their actions towards the generation of results. Also demonstrated were actions required by retailers to maintain the implementation of consumers, causing them to make sequential purchases (Dhar et al., 2007). Following this perspective, the present study allows a better understanding of the occurrence of product unavailability (stock-outs in consumer decision-making, e.g. Fitzsimons, 2000; Gijsbrechts, Campo & Nisol, 2000), providing subsidies for the decision by highlighting the impact of the lack of a product on trade structures and the consequent influence on consumers' propensity to sequential purchases.

One limitations was the stimuli under an artificial environment, not allowing to reproduce the atmosphere closest to the one found by consumers in a natural purchase situation. Furthermore, another limitation refers to the participants' admission to the study and the manner in which the credit was provided. In both studies the value was offered as participation bonus, which can generate reactance and influencing decision process. Finally, it should be considered that the value for the products was standard, this factor can generate a comparison of the prices applied in the research with those practiced in the market, where there is variation among products offered. The limitations explored above can be clarified in future studies.

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