Working Paper

IIMK/WPS/356/MM/2020/01

February 2020

Repulsion Effect: When an Asymmetrically Dominated Decoy Increases the Competitor's Choice Share

Pronobesh Banerjee[1]

[1]Assistant Professor, Marketing Management, Indian Institute of Management, Kozhikode, IIMK Campus PO, Kunnamangalam, Kozhikode, Kerala, India; Email - pbanerjee@iimk.ac.in, Phone Number - 0495-2809239

ABSTRACT

The attraction effect refers to a phenomenon in which the introduction of an asymmetrically dominated decoy increases the choice share of the target. In this article, the authors explore certain conditions under which the introduction of an asymmetrically dominated decoy increases the choice share of the competitor, a phenomenon called the "repulsion effect." They show that for products with skewed attribute values (i.e., products rated as exceptional on one of two attributes and mediocre on the other), the introduction of an extreme decoy favoring the target results in the repulsion effect rather than an attraction effect. The authors offer a categorization-based explanation for the repulsion effect and provide two studies in support.

Keywords: attraction effect, repulsion effect, choice share, decoys

Consumers often make trade-offs in their choices. Consider, for example, a consumer choosing between two grills, Option A and Option B. If Option A is superior on cooking speed and Option B is superior on cooking area, the consumer encounters a choice conflict. If another Option C (decoy) is introduced that is asymmetrically dominated by A (i.e., A is better on one attribute and at least as good on the other attribute) but not B (competitor), the consumer will tend to choose the dominating Option A (target). This finding, called the attraction effect, is one of the most explored issues in the field of marketing. Studies have reported the attraction effect in a large number of substantive domains and with different methodological designs (e.g., Dhar and Simonson 2003; Huber, Payne, and Puto 1982; Huber and Puto 1983; Lehmann and Pan 1994; Simonson and Tversky 1992; Sivakumar and Cherian 1995; Wedell and Pettibone 1996). For example, research documents the attraction effect in consumers' reactions to advertisements (Moran and Meyer 2006), in supermarkets (Doyle et al. 1999), in general elections (Hedgcock,Rao and Chen 2009; Pan, O'Curry, and Pitts 1995), in lottery choices (Herne 1999; Wedell 1991), and in simple perceptual decision tasks (Trueblood et al. 2013). The attraction effect also occurs with birds (e.g., starlings, hummingbirds, gray jays) and honey bees in their foraging and food consumption decisions (Schuck-Paim, Pompilio, and Kacelnik 2004; Shafir, Waite, and Smith 2002). In addition, researchers have reported the attraction effect for microscopic invertebrates such as amoebas (Latty and Beekman 2010). These demonstrations are important because in addition to practical implications, the attraction effect has several important theoretical implications for choice modeling assumptions, such as regularity and similarity.

In contrast with studies focusing on the attraction effect, the objective of the current research is to explore the repulsion effect, in which the presence of an *asymmetrically dominated decoy* increases the choice share of the competitor (see Huber, Payne, and Puto 2014; Simonson 2014). The repulsion effect, which occurs with a choice set configuration pattern the same as the attraction effect, is important to examine because it may shed light on how context affects consumer choice processes. Despite repeated research attempts throughout the years, the repulsion effect has proved elusive to find systematically (Simonson 2014). Thus, the objective of this study is to demonstrate the repulsion effect in a consistent and systematic manner. We show that for products with skewed attribute values (i.e., products rated very good to exceptional on one attribute but poor to mediocre on another, such as Product A rated as 10/10 on Attribute 1 and 4/10 on Attribute 2 and Product B rated as 9/10 on Attribute 1 and 5/10 on Attribute 2), the presence of an extreme decoy favoring the target (i.e., Product C rated as 10/10 on Attribute 1 but 1/10 on Attribute 2) results in the repulsion effect instead of the attraction effect. We suggest that because of skewed attribute values, consumers focus primarily on the second attribute, such that the target and competitor are grouped together to form a category based on their perceived similarity. The consumer then chooses the competitor from the category because of its superior value on the second attribute, resulting in the repulsion effect.

Next, we briefly review the attraction effect literature (for recent reviews, see Lichters, Sarstedt, and Vogt 2015; Sivakumar 2016). Following that, we borrow findings from the categorization literature to conceptualize the repulsion effect. Finally, we carry out the studies and conclude with a discussion of the findings.

LITERATURE REVIEW

Research suggests that consumer judgment and decision-making is context dependent (e.g., Huber, Payne, and Puto 1982; Mellers and Cooke 1994; Simonson and Tversky 1992). One of the most extensively studied context effects is the asymmetrically dominated decoy effect (Huber, Payne, and Puto 1982) or the attraction effect. Consider two products, A (target) and B (competitor) with attributes A_1, A_2 and B_1, B_2, respectively. If A_1 is superior to B_1 (e.g., 70/100 vs. 50/100) but A_2 is inferior to B_2 (e.g., 50/100 vs. 70/100), consumers have no clear reason to choose either of the options. However, introducing a third alternative (decoy) with attributes C_1, C_2 (e.g., 70/100, 40/100), such that it is dominated by the target but not the competitor, enhances the attractiveness of the target and increases the target's choice share, resulting in the attraction effect.

Although research has employed different theoretical accounts to explain the attraction effect, Wedell and Pettibone (1996) subsume the explanations under three categories: (1) weight-change, (2) value-shift, and (3) value-added models. The weight-change model suggests that the weights assigned to the attributes change when a decoy is introduced but that the attribute values are not affected. The value-shift model argues that subjective values, or the attractiveness of the attribute values, are affected by the decoy but that the weights assigned to the attributes are not. Last, the value-added model suggests that the inferiority of the decoy to the target allows consumers to justify their choice.

Huber, Payne, and Puto (1982) explicate the value-shift model by using Parducci's (1974) range–frequency theory, which proposes that the judgment of a stimulus's attribute values depends on its contextual distribution. Using this contextual position in the attribute space, research has examined three categories of decoys: range (R), frequency (F), and range–frequency (RF) (Figure 1). The R decoy extends the range on the attribute on which the target is weak, while the F decoy increases the differences in ranks on which the target is superior. The RF decoy combines both aspects to manipulate the range and rank differences. R* and F* are extreme extensions of the R and F decoys. Extant literature has shown mixed empirical evidence of the efficacy of these decoys in the attraction effect.

While the attraction effect is robust and has been demonstrated across various domains in the past four decades since its discovery, Frederick, Lee, and Baskin (2014) and Yang and Lynn (2014) have recently questioned the generalizability of the attraction effect to real-life situations, even finding evidence of a repulsion effect with some of their stimuli. While the idea that the asymmetrically dominated decoy might increase the choice share of a competitor instead of the target is intriguing, why this should happen is unclear. Simonson (2014) argues that a repulsion effect might occur if the decoy taints a particular region of the attribute space, causing consumers to choose the competitor. However, researchers have failed to find the repulsion effect consistently. An empirical issue that perhaps makes the repulsion effect elusive is that in designing the choice configuration, the choice shares in the control condition are so overwhelmingly in favor of the competitor that the introduction of the decoy does not change the distribution. To address this issue, we fine-tune our choice set configuration to favor the repulsion effect.

CONCEPTUALIZATION

Consider a mouthwash with two attributes: germ-killing and decay-prevention effectiveness. Target A is rated as 10/10 on germ-killing effectiveness but 4/10 on decay-prevention effectiveness, while competitor B is rated as 9/10 on germ-killing effectiveness but 5/10 on decay-prevention effectiveness. Note that the choice task involves resolving a one-point rating superiority of A on germ-killing effectiveness versus a one-point rating superiority of B on decay-prevention effectiveness. This trade-off between A and B is systematically affected by the introduction of an asymmetrically dominated decoy C, with the same germ-killing effectiveness rating (10/10) as A but an inferior rating of decay-prevention effectiveness (1/10). Previous research suggests that this choice configuration would result in an attraction effect, such that the introduction of the decoy C enhances the choice share of target A. However, in this research, we show that this type of skewed attribute values (i.e., products rated very good to exceptional on one attribute but poor to mediocre on another) results in the repulsion effect. The rationale for this is presented below.

Again, consider the attribute germ-killing effectiveness that has high ratings in both the experimental (A has attribute rating of 10/10, B has attribute rating of 9/10, and C has attribute rating of 10/10) and the control (A has attribute rating of 10/10 and B has attribute rating of 9/10) conditions. The effort-accuracy framework conceptualizes decision making as a compromise between the desire to make the correct decision and the desire to minimize effort (Payne, Bettman, and Johnson 1993). Thus, in this context, the effort-accuracy framework suggests that when consumers are presented with values 9 and 10 on the attribute germ-killing effectiveness, they will categorize these values as high, as they are at the extreme end of the scale, and ignore this attribute. This is especially so in the presence of low values of the attribute decay-prevention effectiveness (4/10, 5/10, and 1/10), as the attribute germ-killing effectiveness becomes redundant because there is hardly any perceivable difference on this attribute among the given set of alternatives, which may clearly differentiate one alternative from the other depending on the attribute germ-killing effectiveness. Consequently, the focus shifts to the second attribute—decay-prevention effectiveness.

Now consider the second attribute, decay-prevention effectiveness, that has low ratings for all three products: 4/10 for A, 5/10 for B, and 1/10 for C. In the control condition, participants compare just two values 4 and 5, and because their decision would be based largely on values of this attribute, many would choose Option B. However, in the experimental condition, consumers' decision would be based on three attribute values: 4, 5, and 1 for products A, B, and C, respectively. For the repulsion effect to occur, the choice share of B needs to be significantly higher in the experimental condition than in the control condition. In the following section, we argue why this is the case by using findings from categorization literature.

A wealth of research has examined the categorization process in consumer behavior, arguing that grouping similar objects together enhances information-processing efficiency (Cohen and Basu 1987). Therefore, when deciding among alternatives, consumers are likely to categorize product attributes with similar specifications into a subgroup. Consistent with this argument, research indicates that category formation plays a key role in context effect (Banerjee et al. 2018). Banerjee et al. (2018) show that the attraction effect occurs only when the target and the decoy form a category, and the magnitude of the effect is enhanced when category formation is aided. For example, when a similarity rating task comes before choice, the magnitude of the attraction effect is significantly greater than when the similarity rating

task comes after choice. Because the target and decoy are usually closest in the attribute space, making the similarity rating explicit before choice aids category formation between the target and the decoy, leading consumers to choose the superior target and thus resulting in the attraction effect. More important, Banerjee et al. also show that the attraction effect is eliminated when product pairs have comparable similarity ratings, as these ratings make the formation of a subgroup difficult. This finding is in line with prior research (Mishra, Umesh, and Stem 1993) that shows that the magnitude of the attraction effect increases with the increase of similarity between the target and the decoy, indicating the formation of a category comprising the target and the decoy. In our research, as the decoy has an extremely low value on Attribute 2, the target and competitor appear closest in the attribute space to form a category from which the superior competitor is selected, resulting in the repulsion effect. For example, it is evident that in the presence of the decoy (rating 1/10), the target (rating 4/10) and the competitor (rating 5/10) are closer in the attribute space, making them the most likely candidates to form a category.

Conversely, if the decoy has a value of 3/10, category formation between the target and the competitor will be attenuated because a consumer may form a category with either values 4 and 5 or values 3 and 4, thereby reducing the repulsion effect; we cannot predict a priori which pair will form a distinct category. In essence, the extreme value of the decoy forces the consumer to group the target and the competitor into a category. This is in contrast with prior research, in which consumers grouped the target and decoy together to form a category (Banerjee et al. 2018). Thus, which one among the target, competitor, and decoy forms the category will determine the nature of the context effect. Previous research indicates that formation of a category between the target and the decoy results in the attraction effect (Banerjee et al. 2018), while we show that the formation of a category between the target and the competitor results in the repulsion effect.

OVERVIEW OF STUDIES

In Study 1, we show the repulsion effect across three different product categories. In Study 2, we generalize the repulsion effect across a variety of attribute values.

STUDY 1: DEMONSTRATION OF THE REPULSION EFFECT

The objective of Study 1 is to demonstrate that the presence of an asymmetrically dominated decoy increases the choice share of the competitor instead of the target. As explicated in our conceptualization, we designed our stimuli with skewed product attribute values (i.e., products rated as exceptional on one attribute and mediocre/poor on the other attribute). Thus, attribute values for Attribute 1 were high (10 or 9) for all products (target, competitor, and decoy), and attribute values for Attribute 2 were mediocre (3, 4, 5, or 6) for both the target and the competitor and extremely poor (1) for the decoy

Method

Study participants were recruited from the online panel Amazon Mechanical Turk. One hundred and twenty complete responses were obtained (50.8% female, M_{age} = 40.3). The study was a 2 (decoy: decoy vs. no-decoy) × 3 (products: grills, backpacks, MP3 players) mixed design. The decoy condition was between-subjects, and products were within-subject. We randomly assigned participants to one of the conditions (decoy or no-decoy) and randomized the order of products. Thus, participants saw three products (with a decoy or no

decoy depending on the condition) and were asked to indicate their choice. Each product had one superior and one inferior attribute. We kept the superior attribute values constant across the stimuli but varied the inferior attribute values across the products. After the choice task, we asked participants to distribute 100 points among the brands (Mishra, Umesh, and Stem 1993). Because the distribution of points has properties of metric measurement compared with the coarse nature of the choice data, this step supports more sensitive statistical tests. In addition, we measured the attractiveness of the options, similarity of the options, difficulty of choice, justifiability of choice, motivation for accurate evaluation, attribute importance, and product knowledge. We also asked participants to provide their thoughts on the choice process. Finally, they answered demographic questions.

Results and Discussion

We did not include participants who chose the decoy in the percentage computation (two for grills and three for MP3 players—the pattern of results remains the same even after including the decoy; for a discussion, see Mishra, Umesh, and Stem 1993). Overall, combining the choices yielded a significant difference in the choice of the competitor across the conditions (decoy: 79.3%; no-decoy: 69.9%; $z = 2.02$, $p < .05$).

We also analyzed how participants distributed the points among the options. We adapted the procedure Mishra, Umesh, and Stem (1993) use to calculate the attraction effect for the repulsion effect. This hypothetical example illustrates the calculation for the repulsion effect using distributions of points. In the no-decoy condition, assume, for example, that participants distributed 50 points each to the target and the competitor. In the decoy condition, assume that the point distribution is 30 for the target, 60 for the competitor, and 10 for the decoy. If the proportion of points between the target and competitor does not change with the introduction of the decoy, both should receive 45 points: $(100 – 10) \times 50/100 = 45$. The repulsion effect would simply be the difference between the observed and expected values of the competitor: 60 (observed) – 45 (expected) = 15. This process allows us to capture the magnitude of the repulsion effect. The no-decoy condition serves only to compute the expected values of the computation, not for any additional calculations. Consistent with our predictions, we found evidence of the repulsion effect across all three products categories (grill: repulsion effect = 5.17, $t(57) = 1.99$, $p = .05$; backpack: repulsion effect = 5.79, $t(57) = 1.84$, $p = .07$; MP3 player: repulsion effect = 6.36, $t(57) = 2.02$, $p < .05$).

To provide evidence for our categorization-based conceptualization, we analyzed similarity perceptions of the brand pairs. In the no-decoy condition, participants rated the similarity of brands x (target) and y (competitor), and in the decoy condition, they rated the similarity of the pairs x, y; y, z; and x, z. In the decoy condition, participants rated the similarity of pair x, y (target, competitor) significantly higher than the other pairs across the three product categories ($p < .01$). Banerjee et al. (2018) show evidence of the attraction effect when the perceived similarity of the target to the decoy is greater than the other pairs. The idea is that consumers group similar options together to form a category and then choose the superior option. In case of the repulsion effect, the target and competitor pair have the highest similarity rating among the three possible pairs and thus, based on our conceptualization, would form the category. As such, we expect greater choice share of the competitor because of its higher value on the inferior attribute. The choice share patterns observed in this study are consistent with this argument. Thus, we provide preliminary evidence for our conceptualization.

To rule out other confounding explanations, we analyzed data from the other variables we collected. Paired t-tests revealed no difference in attribute importance for the MP3 player across the two attributes (features vs. ease of use) but a significant difference in the attribute importance across two attributes of grill (cooking speed > cooking space) and backpack (durability > storage space). According to the three-stage decision process model (Evangelidis and Levav 2013; Fischer and Hawkins 1993; Tversky, Sattath, and Slovic 1988), decision makers rely on attribute importance only as a last resort if they are unable to reach a decision based on the presence of a dominant relationship or to observe a decisive advantage of one option over another. Apart from the reduced emphasis on attribute importance during the decision process, the presence of the same attribute across two conditions (decoy and no-decoy) will minimize the impact of attribute importance on the repulsion effect. Thus, attribute importance is not likely to have a significant role in the repulsion effect. We found no significant differences in attribute importance between the decoy and no-decoy conditions for any attribute.

Paired t-tests of attractiveness across brands x and y also revealed that brand y was more attractive than brand x for both the grills and backpacks but not for the MP3 players. We found no significant differences between attractiveness of brands x and y across the conditions (decoy and no-decoy) for the grills and MP3 players; however, brand y was more attractive than brand x for backpacks.

We also tested for differences in terms of the difficulty of choice, justifiability of choice, and motivation for accurate evaluation in both the decoy and no-decoy conditions. Except for the difficulty of choice for the backpacks, we found no significant difference for any of the other variables. We further tested participants' product knowledge ("know very little/know very much," "inexperienced/experienced," "uninformed/informed," and "novice buyer/expert buyer") on a seven-point Likert scale. Except for the items, knowledge and information in the backpack option (in which participants in the decoy condition gave higher ratings), there were no significant differences in any of the other comparisons. In summary, we find the repulsion effect in both choice and point distribution task, such that the presence of a decoy increases preferences for the competitor rather than the target. We also provide preliminary evidence for our theoretical rationale. The difference in the other control variables' scores cannot explain the consistent observation of the repulsion effect.

STUDY 2: SYSTEMATIC EXPLORATION OF THE REPULSION EFFECT

In our conceptualization, we proposed that the presence of an extreme decoy in a choice set of skewed attribute values would aid category formation of the target and competitor and result in the repulsion effect. However, given the results of Study 1, it could be argued that the repulsion effect is limited to specific attribute values. Thus, the objective of Study 2 is to address this possibility and systematically explore the inferior attribute space for the presence of the repulsion effect. Consistent with our theorizing and similar to Study 1, we kept the attribute values of the superior attribute constant across different product categories and choice set configurations but systematically varied the attribute values of the inferior attribute. In this study, we used a large number of inferior attribute configurations (2–3 vs. 3–4 vs. 4–5 vs. 5–6 vs. 6–7 vs. 7–8) with the idea that the presence of the inferior attribute value (we used 1 as the value here) of the extremely poor decoy would aid category formation between the other two values and enhance the likelihood of the choice of the larger value, resulting in the repulsion effect.

Method

We collected data from MTurk and obtained 729 valid responses (53.1% female, M_{age} = 42). The study was a 2 (decoy: no-decoy vs. decoy) × 3 (products: grills, backpacks, MP3 players) × 6 (inferior attribute configurations: 2–3 vs. 3–4 vs. 4–5 vs. 5–6 vs. 6–7 vs. 7–8) mixed design; products were within-subject, and the decoy and inferior attribute configurations were between-subjects. We first randomly assigned participants to either the no-decoy or decoy condition and then presented them with the three products whose configuration was randomly chosen. For each of the three products, we kept the superior attribute values constant at 9 (competitor) and 10 (target) on a ten-point scale and manipulated the inferior attribute values (2–3 vs. 3–4 vs. 4–5 vs. 5–6 vs. 6–7 vs. 7–8). In the decoy condition, we kept the decoy attribute values constant: The superior attribute had a value of 10 and the inferior attribute a value of 1.

In line with our conceptualization, because comparison of the superior attribute values is meaningless (10, 9, and 10 for the target, competitor, and decoy, respectively), the decision process should largely depend on the processing of the inferior attribute values. Thus, participants should compare number triplets (2, 3, 1), (3, 4, 1), (4, 5, 1), (5, 6, 1), (6, 7, 1) and (7, 8, 1), depending on the condition to which they are assigned. In the presence of the decoy, which has a value of 1, participants should isolate the decoy and group the target and competitor together. Then, they should choose the option with the larger of the two inferior attribute values (competitor). Participants indicated their choice of the three versions of the products (grills, backpacks, and MP3 players) they saw. As in Study 1, participants also distributed 100 points among the brands (Mishra, Umesh, and Stem 1993) and answered similar questions.

Results and Discussion

Each participant made three choices (one for each product), for 2,187 choices in total. Participants chose the decoy only 24 times, so we ignored it in the calculations. When we aggregate the choice shares across different product types, the results in all six conditions (2–3 vs. 3–4 vs. 4–5 vs. 5–6 vs. 6–7 vs. 7–8) are consistent with the repulsion effect. The choice patterns in the individual product categories reveal the presence of the repulsion effect for grills and MP3 players but not for backpacks, though the aggregated choice patterns are consistent with the repulsion effect (decoy: 71.2%; no decoy: 66.75%; z = 2.23, $p < .05$). In addition, analysis of the distributed points across the different brands revealed evidence of the repulsion effect across all three products categories (grill: repulsion effect = 4.53, t(350) = 3.57, $p < .001$; backpack: repulsion effect = 3.26, t(345) = 2.83, $p < .01$; MP3 player: repulsion effect = 2.97, t(343) = 2.3, $p < .05$). Thus, we replicate the findings of Study 1 by demonstrating the replication effect across a variety of attribute values.

To again provide evidence for our categorization-based conceptualization, we analyzed similarity perceptions of the brand pairs. In the decoy condition, participants rated the similarity of pair x, y (target, competitor) significantly higher than the other pairs across the three product categories ($p < .01$) in all the conditions except the inferior attribute value 2–3. This is consistent with our categorization-based conceptualization, as comparable values on the inferior attribute (2, 3, 1) hinder categorization.

Analysis of the other control variables does not provide any meaningful information on the repulsion effect. For grills and MP3 players, the repulsion effect is supported, whereas

in the backpack choice shares, repulsion effect is supported in two conditions. Thus, the overall pattern of choice shares, points distribution, and similarity ratings is supportive of our conceptualization of the repulsion effect.

GENERAL DISCUSSION

In this study, we explore the elusive repulsion effect and present two studies that demonstrate the effect and provide evidence in support of our categorization-based theorizing. Frederick, Lee, and Baskin (2014) note the lack of experimental research on the repulsion effect; however, over the years, several researchers have tried to systematically investigate the hypothesized repulsion effect, with limited success (e.g., Simonson 2014). The reason the repulsion effect might occur is that the added inferior option taints that region of the attribute space, making it repulsive and leading consumers to choose the other extreme. For example, an added cheap option of poor quality may lead consumers to opt for quality over price (triggering the rule "You get what you pay for"), though such theorizing is speculative without any experimental results to support it. Spektor, Kellen, and Hotaling (2018) examine this tainting hypothesis in a perceptual decision-making task and demonstrate the repulsion effect with a stimulus that assesses the perception of size of rectangles. They find that both task complexity and arrangement of options on screen determine the nature of the context effect. While the tainting hypothesis necessitates higher-level reasoning processes, in rectangle-size tasks decision making is based on perceptual processes. Furthermore, extant research suggests that perceptual context effects strongly differ from choice context effects (Dutilh and Rieskamp 2016; Trueblood and Pettibone 2017); thus, it seems unlikely that the processes underlying the repulsion effect in perceptual tasks and choice are the same. Further evidence in favor of the repulsion effect comes from animal cognition research. Bateson, Healy, and Hurly (2002) find a relative preference for the competitor than the target in hummingbird foraging behavior. Similar to the proposed mechanism in our work, Bateson and colleagues speculate that hummingbirds might perceive the two attributes as correlated and varying on just one dimension.

Theoretical Contributions

We build on the literature that has examined consumer choice processes, by introducing the role of attribute values using this literature's findings. This is especially important for context effect research because some theories (e.g., Parducci's [1974] range–frequency theory) have specified how different attribute values affect consumer judgment and decision making. For example, a range decoy (Figure 1) extends the range of the attribute on which the target is inferior, making the difference of the attribute values between the target and competitor seem less extreme. Because the decoy extends the range of the inferior attribute, extremeness of attribute values can only be judged in the presence of three points in the attribute space, rendering the target less extreme in the presence of the decoy. Thus, the contextual attractiveness of the target increases relative to the competitor, resulting in an increased share of the target versus the competitor with the introduction of a decoy (the attraction effect). In our studies, we used only a range decoy as we were constrained by designing stimuli that would lead to the repulsion effect. However, in all the different stimuli we used, range theory was not supported, as we find the repulsion effect instead of the attraction effect. Theoretically, this is an interesting finding, as our results are completely opposite to range theory, in contexts in which range extension should result in the attraction effect. Our understanding of such a difference comes from two observations. First, we constrained the choice set such that choice was primarily dependent on one attribute. However, prior attraction effect research does not impose any such constraints. Consequently, the role of the range decoy may have been muted,

as consumers focused on one attribute. Further research should examine the choice processes involving one versus two attributes in greater detail. Second, most prior research on the attraction effect has used real attribute values rather than ratings of attribute values, which could have influenced the way consumers processed information. Further research might also address this issue.

Simonson (2014) asserts that a prerequisite for achieving the attraction effect is to make the dominance obvious in a choice set. In our studies, dominance was explicit in the stimuli we used, but we still found no evidence of the attraction effect. Thus, under certain circumstances, even clear dominance may not lead to the attraction effect and, instead, may result in the repulsion effect. We conjecture that because prior research mostly used real attribute values (e.g., 32 miles per gallon), dominance served as a heuristic for decision making. Consumers may have been unaware of the market distribution of the attribute values (gas mileage) and inferred the distribution from the given set, making the role of dominance paramount in choice. By contrast, ratings make the meaning of the attribute values obvious and motivate consumers to judge them purely on their value (e.g., 40/100 is a low value) rather than relying on a heuristic such as dominance. Thus, in a choice set in which Attribute 1 has a distribution of (100–90–100) and Attribute 2 has a distribution of (40–50–10), it is apparent that the alternative with attribute combination (100-40) dominates the one with attribute combination (100-10). However, the presence of ratings may motivate consumers to categorize these alternatives as having low values on Attribute 2, especially in a context in which the competitor has a rating of 50/100, thereby eliminating the role of dominance in choice. More important, we conceptualize and show why the alternative with an attribute value of 50 will gain share in the presence of an alternative with an attribute value of 10.

Practical Implications

This research has impactful meaning both practically and theoretically. Marketing strategists have been aware of the attraction effect for over two decades and have often used them for competitive advantage in real life marketing decisions (Srivastava 2015). This research suggests that marketers need to be careful in implementing a strategy based on the attraction effect, because the asymmetric decoy with specific attribute values may actually result in a repulsion rather than attraction effect. Marketing strategists also need to understand the role of perceived similarity between different brands as this will impact consumer choice.

Limitations

This research has certain limitations. A common criticism of most context effect research is that the products are not actually available and are often described only on two or three simple attributes with no identifying brand names (Frederick, Lee, and Baskin 2014). This criticism is applicable to our research as well. However, the objective of our research was such that we were forced to use such stimuli. We also used ratings instead of realistic attribute values. Further research could try to address these limitations. Overall, we demonstrate the elusive repulsion effect using findings from a novel stream of literature (numerical cognition) that has hitherto not been explored in consumer choice literature.

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Research Office
Indian Institute of Management Kozhikode
IIMK Campus P. O.,
Kozhikode, Kerala, India,
PIN - 673 570
Phone: +91-495-2809238
Email: research@iimk.ac.in
Web: https://iimk.ac.in/faculty/publicationmenu.php