

The Mitigating Role of Holistic Thinking on Choice Overload

Ilgim Dara Benoit

Department of Marketing, Walker College of Business, Appalachian State University, Boone, North Carolina, USA. Phone: 828-262-6193, Fax: 828-262-6192, E-mail: benoitid@appstate.edu, and

Elizabeth Gelfand Miller

Department of Marketing, Isenberg School, University of Massachusetts Amherst, Amherst, Massachusetts, USA. Phone: 413-545-5639, Fax: 413-545-3858, E-mail: emiller@isenberg.umass.edu.

Abstract:

Purpose - This paper aims to demonstrate how and why holistic thinking mitigates the negative impact of large assortments on satisfaction.

Design/methodology/approach - Five between-subject experiments demonstrate the mitigating role of holism on choice overload across a variety of contexts.

Findings - While large assortments create overload feeling, holistic thinking mitigates the negative impact of overload feeling on satisfaction for both chronic (Studies 1a and 1b) and decision-specific (Studies 1b and 1c) holistic thinkers, as well as those who adopt a more holistic thinking style because of the decision goal (Study 2) or incidental priming (Study 3).

Research limitations/implications - This paper introduces a new moderator of choice overload effects – holistic thinking – and shows how it mitigates the negative indirect effect of assortment size on satisfaction. This paper contributes to the literature on assortment size effects and shows that even when assortment size increases overload feeling, this negative impact of assortment size can still be reduced.

Practical implications - Marketers with large assortments can reduce the negative impact of overload feeling and increase satisfaction by promoting the hedonic features of the products and encouraging holistic thinking. Similarly, consumers can reduce the negative impact of overload feeling by approaching their consumption more holistically either because of their individual traits or situational factors.

Originality/value - This research contributes a new moderator to the choice overload literature: holistic thinking. In doing so, it adopts a broader consideration of the decision-making process underlying overload effects and pinpoints how (i.e. by which path) holistic thinking mitigates the negative impact of large assortments.

Keywords - Decision making, Holistic thinking, Assortment size, Choice overload

Paper type - Research paper

Citation: Ilgim Dara Benoit, Elizabeth G. Miller, (2017) "The mitigating role of holistic thinking on choice overload", *Journal of Consumer Marketing*, Vol. 34 Issue: 3, pp.181-190, <https://doi.org/10.1108/JCM-07-2016-1889>

Introduction

Choice overload has long been a controversial topic in consumer research (Chernev et al., 2015; Malhotra et al., 1982; Scheibehenne et al., 2009). While some researchers argue that larger assortment sets benefit consumers (e.g., Kahn and Lehmann, 1991; Levy and Weitz, 2001), some have argued that large assortments lead to choice overload (i.e. decreased satisfaction) (Chernev, 2003; Diehl and Poynor, 2010; Iyengar and Lepper, 2000). A meta-analysis by Scheibehenne et al. (2010) found that the average effect size for studies supporting the desirability of large assortments was equal to the average effect size for studies finding choice overload. Further, the meta-analysis could account for only 56% of the effect size variance suggesting there is still significant variance left unexplained. Building on these findings, Chernev et al. (2010) have argued for a need to focus on *when* choice overload occurs, rather than *whether* it occurs.

Consistent with Chernev et al.'s (2010) call, a number of researchers have since identified moderators (e.g. increasing vs. decreasing choice-set size: Levav et al., 2012; choosing for self vs. other: Polman, 2012; valence of affect: Spassova and Isen, 2013) that influence whether large assortments lead to increased or decreased satisfaction (see Chernev et al., 2015 for a review of additional moderators). However, there is no sufficient condition that can guarantee “a reliable occurrence of choice overload” (Scheibehenne et al., 2010). Simply searching for a single sufficient condition is not informative either (Chernev et al., 2010). As a result, researchers have called for assessing the decision process in addition to final choice outcomes (i.e. satisfaction) (Scheibehenne et al., 2010; Scheibehenne and Todd, 2009). As such, a better understanding of *how* choice overload occurs can help better pinpoint exactly when and

thus how moderators impact decision-making. Accordingly, a few papers have looked at the process underlying choice overload effects and have found that large assortments decrease satisfaction through overload feeling (Diehl and Poynor, 2010; Spassova and Isen, 2013). Thus, one can investigate ways to mitigate this overload effect of large assortments. In this paper, we identify and test a new moderator of choice overload effects – holistic thinking – and show how it mitigates the negative indirect effect (i.e. overload effect) of assortment size on satisfaction.

While Scheibehenne et al. (2010) also highlight that the goal and decision strategy of an individual can moderate the overload phenomenon, they do not specifically consider thinking style. Further, they do not consider where and how decision strategy impacts the process. Thus, our research adds to the existing understanding of assortment size effects by (a) identifying a new moderator of the process (holistic thinking) and (b) showing how and why holistic thinking acts as a moderator. Specifically, we show that holistic thinking can reduce the negative impact of large (vs. small) assortment on satisfaction, even though the consumer still experiences an increase in overload feeling. This reduction likely occurs because holistic thinkers are better able to cope with the overload feeling that arises from the larger choice set.

The rest of the paper is organized as follows. First, we present the theoretical background and rationale for our hypothesis. We then present evidence from five studies that holistic thinking moderates the impact of assortment size on satisfaction by mitigating the negative impact of overload feeling. Studies 1a and 1b provide support for the mitigating impact of holism measured as a chronic trait and as decision-specific thinking style applied. Study 1c generalizes these results to a new product category and tests additional paths (variety effect) by which holistic thinking may operate. Studies 2 and 3 manipulate holistic thinking both integrally

through decision goal (hedonic vs. utilitarian) and incidentally via priming (map task; e.g., Förster, 2009), providing additional evidence of the mitigating impact of holistic thinking on the overload effect. Finally, we conclude with a discussion of the results, theoretical and managerial implications, and directions for future research.

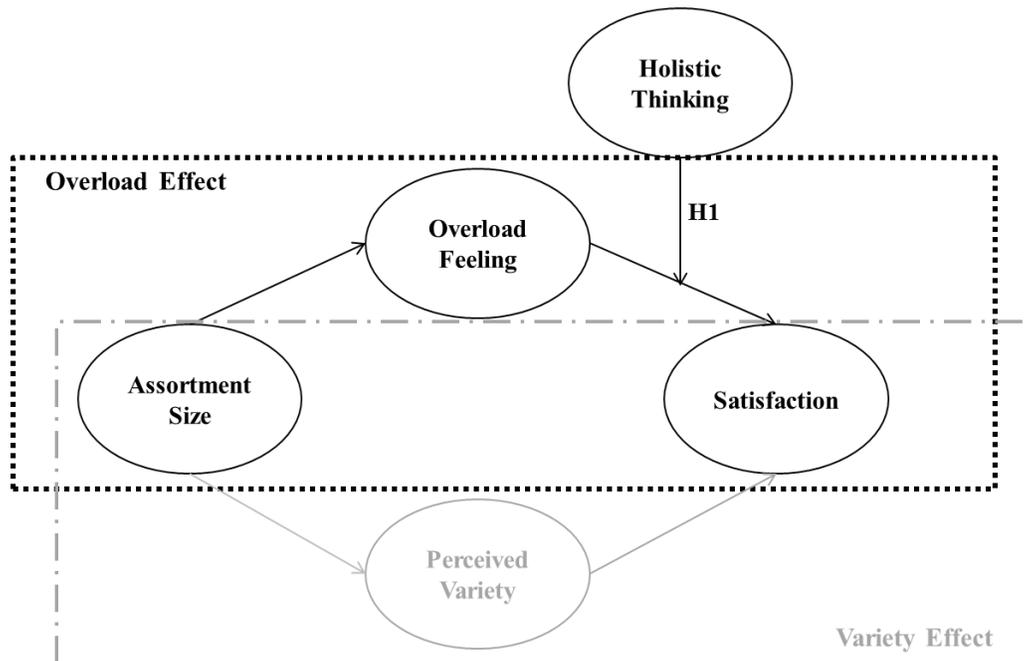
Theoretical Background

Increasing assortment size can both positively and negatively impact consumers. On the positive side, large assortments are desirable because they help consumers with cost of search and decision confidence, since all the options are readily available in a single transaction (Boyd and Bahn, 2009, Eaton and Lipsey, 1979). Large assortments signal the relative quality of the products in the assortment, elicit freedom of choice, and are better able to meet diverse individual needs (Anderson, 2006; Berger et al., 2007). In contrast, some have argued that large assortments create choice overload, which is defined as experiencing less satisfaction after choosing among many options compared to choosing among few options (Iyengar and Lepper, 2000; Polman, 2012; Scheibehenne et al., 2010). This occurs because increases in set size result in greater time and effort demands to cognitively process the items and can also lead to fear of not being able to pick the optimal option (Kahn and Lehman, 1991; Schwartz, 2004).

While no consensus exists regarding assortment size's total effect on satisfaction (i.e. negative or positive), the recent literature has discussed two indirect forces (e.g. Spassova and Isen 2013) (see figure 1). Large assortments enhance perceived variety which has a positive influence on satisfaction (variety effect; e.g. Townsend and Kahn, 2014; Spassova and Isen, 2013), while also creating overload feeling (e.g. feelings of difficulty, confusion, and being

overwhelmed) (overload effect; Diehl and Poynor, 2010; Iyengar and Lepper, 2000; Polman, 2012) which can decrease satisfaction (Diehl and Poynor, 2010; Spassova and Isen, 2013). However, the literature has not focused on a factor that would mitigate the negative impact of overload feeling on satisfaction (as opposed to the overload feeling itself). Rather, studies have largely examined moderators between assortment size and satisfaction (i.e. moderators for the total effect), ignoring the process behind it (see Spassova and Isen 2013, study 2, for an exception). On the other hand, in this paper, we study a factor that would mitigate the negative impact of overload feeling on satisfaction (i.e., mitigate the overload effect; see figure 1).

Figure 1 Model



Role of Holistic Thinking

Thinking styles affect numerous cognitive processes, such as attention, depth of processing, and efficiency of information search (Phillips et al., 2016). While individuals generally have a

culturally dominant processing style (holistic or analytic thinking) (Nisbett et al., 2001), thinking styles can be viewed as a within-culture individual difference or can vary by the specific situation (e.g., Choi et al., 2007; Monga and John, 2008; 2010). Because of their impact on how consumers process information, we expect thinking style (specifically, holistic thinking) to moderate the impact assortment size increases have on satisfaction.

Holistic thinkers tend to see the “whole picture” rather than the components constituting it, while analytic thinkers focus more on the components in lieu of the whole context (Monga and John, 2008; Nisbett et al., 2001). Analytic thinking, which uses System 2 processing, is a more controlled processing style which involves greater scrutiny and comprehensive evaluation of information (Monga and John, 2010; Stanovich and West, 2000), an approach which is likely to increase in difficulty as the amount of information increases. Holistic thinkers, on the other hand, seek to apply an overarching structure or comprehensive meaning to the situation, by focusing on central characteristics that tend to be similar, and thus create fewer, but broader, categorizations for understanding information pieces (Burgoon et al., 2013). As the amount of information increases, it becomes more difficult and overwhelming to incorporate all of these pieces into a coherent whole. Thus, regardless of thinking style, when facing large assortments, consumers are likely to be fatigued by the decision and due to the depleted resources they experience overload feeling. However, the way holistic vs. analytic thinkers manage the depleted resources should differ.

In decision contexts with large assortments, overload feeling arises because the greater number of options increases the effort required to evaluate the given options, and thus, depletes cognitive resources. However, holistic thinking requires fewer cognitive resources than analytic

thinking (Aydinoglu and Krishna, 2011; Saini and Thota, 2010; Stanovich and West, 2000). While System 2 processing (e.g., analytic thinking) is resource dependent (Cheema and Patrick 2012), System 1 processing (e.g., holistic thinking) is not; System 1 processing is able to operate whether or not cognitive resources are strained (Saini and Thota, 2010). As a result, while holistic thinkers still experience overload due to the increased number of options in the larger assortment, the impact of these overload feelings on satisfaction is reduced because holistic thinkers still have enough cognitive resources to cope with this strain. Further, holistic thinking is more dialectical and better able to accommodate coexisting opposites (variety effect and overload effect in our case) (Nisbett et al., 2001). This characteristic also suggests that holistic thinkers will be more tolerant of overload feeling than analytic thinkers, leading to a less negative impact on satisfaction. Additionally, System 1 processing (e.g., holistic thinking) may be particularly effective for complex tasks and problems with subjective or idiosyncratic options (Phillips et al., 2016). Using a thinking style that matches the task can result in more positive decision experiences (Phillips et al, 2016). Thus, matches with the task characteristics as well as arguments related to available cognitive resources and holistic thinking's reconciling nature, suggest that even though assortment size increases may lead to overload feeling, the more an individual engages in holistic thinking, the easier it will be to cope with this increased overload, thus mitigating its negative impact on satisfaction:

H1. Thinking style will moderate the negative effect of large assortment on satisfaction caused by overload feeling (overload effect) by reducing the negative impact of overload feeling on satisfaction for holistic thinkers.

We test this hypothesis through five studies, where we both measure holistic thinking (as a chronic trait and a decision-specific thinking style) and manipulate it (both integrally and incidentally).

Study 1a

Participants and Design

Two-hundred-seventy-seven students from a northeastern university (44% female) were randomly assigned to view a small (6 items), large (24 items), or very large (48 items) assortment. Participants were told they would be participating in a marketing research study about how people select chocolates and would be asked to look at chocolate alternatives and report the one they would prefer (cf., Iyengar and Lepper, 2000).

Stimuli Creation

Chocolates were chosen as the choice context because they have been successfully used in prior research examining the effects of assortment size on consumer preferences (Chernev, 2003; Iyengar and Lepper, 2000; Lin and Wu, 2006). Scheibehenne et al. (2010) found no difference in effect sizes for hypothetical vs. real decisions, so we elected to use a hypothetical choice task. However, to avoid guiding respondents into a specific thinking style (e.g., evaluating options attribute by attribute) and to present the options as realistically as possible, we did not list the chocolate options by attributes and levels as many prior studies have done (e.g., Chernev, 2003; Lin and Wu, 2006). Rather, we presented pictures of the chocolates along with a brief description (e.g. “Red Velvet Cake Truffle: Chocolate ganache in a white chocolate shell”). Chocolate images and descriptions were adapted from a real chocolate brand’s webpage, paying particular attention to the different attributes (chocolate type, cocoa content, flavor, and nut

content), considering the distribution and number of attribute levels (3-6) to avoid creating any bias in the materials (cf., Lurie, 2004). Following Diehl and Poynor (2010), we created eight versions of the small assortment and used these to form four different large assortments and two different very large assortments. We also ensured that the most preferred chocolates from a pretest were equally distributed in the small assortments so that the small assortments would be equally attractive to each other.

Measures

All scales across studies were measured using 7-point scales and were adapted from the literature where possible. Satisfaction was measured after participants selected an option from the choice set. While prior research has generally measured satisfaction using a single item, “satisfaction with the chosen option,” Scheibehenne et al. (2010) suggest this item does not measure a well-defined concept and may contribute to the inconsistent results within the literature. Therefore, to strengthen the content and construct validity, we use a multi-item scale and define and operationalize the satisfaction concept more broadly, considering definitions of satisfaction from Scheibehenne et al. (2010), Buck et al. (2004), and Oliver (1997). Specifically, the multi-item scale included satisfaction with the experience, the number of options, and the chosen option, as well as confidence in the chosen option and conviction that the chosen option best fulfills the respondent’s preferences ($\alpha = .86$).

Following the satisfaction measure, we assessed the overload feeling (“It was difficult to decide which chocolate to choose”, “I was overwhelmed in the decision process”, and “I was confused while selecting a chocolate”) (1 = not at all, 7 = very much) (Diehl and Poynor, 2010; Polman, 2012) ($\alpha = 0.78$). Next, we assessed familiarity with the brand we used as a control

variable as strong prior preferences and expertise can reduce information overload (Chernev, 2003; Mogilner et al., 2008). Respondents indicated how familiar they were with the brand's chocolates (1 = not at all familiar, 7 = very familiar) and how often they eat the brand's chocolates (1 = never, 7 = very frequently) ($r = .59$). Finally, we asked about chronic holistic thinking style which was measured with ten-items (e.g. "The whole is greater than the sum of its parts," "Everything in the universe is somehow related to each other," "The whole, rather than its parts, should be considered in order to understand a phenomenon," "It is more important to pay attention to the whole than its parts," (1 = strongly disagree, 7 = strongly agree); Choi et al., 2007; Monga and John, 2008, 2010; $\alpha = .77$). Finally, to check that we successfully manipulated assortment size, participants were asked how they felt about the number of choices available (1 = too few, 4 = about right, 7 = too many; Iyengar and Lepper, 2000).

Study 1a Results

Manipulation Check

A one-way ANOVA revealed a significant effect of assortment size on the number of perceived options ($F(2, 274) = 79.99, p < .001$). The small assortment ($M = 3.42$) was perceived as significantly smaller than the large assortment ($M = 4.82$) and the very large assortment ($M = 5.45$); the very large assortment was also perceived as significantly larger than the large assortment (p 's $< .001$). All values were significantly different than the scale mid-point 4 as well (p 's $< .001$), suggesting the small assortment was perceived as "small" and the large assortments as "large." In addition, we confirmed that the different assortment versions of equal size were not significantly different from each other with regards to the manipulation check (p 's $> .1$).

Moderating Role of Holistic Thinking

We predicted that holism will mitigate the negative effect of overload feeling (caused by large assortments) on satisfaction. We used a moderated mediation analysis to test this hypothesis. We conducted analyses of conditional indirect effects with bootstrapping technique (5,000 samples) (Hayes, 2015; Preacher et al., 2007) using PROCESS Model 14 (Hayes, 2013). As recommended by Hayes, we used two dummy variables that represent large and very large assortment with small assortment as the reference category and we ran the model twice holding either large or very large assortment as a covariate in the macro in addition to familiarity. First, findings showed that, as expected both large and very large (vs. small) assortments create overload feeling ($\beta_L = .77$, $\beta_{VL} = 1.48$; p 's $< .001$). In turn, overload feeling had a negative effect on satisfaction ($\beta = -.65$, $p < .01$). However, the negative effect of overload feeling was moderated by holistic thinking ($\beta = .10$, $p < .05$) (direct effects; $c_L = .48$, $c_{VL} = .64$; p 's $< .01$). The sign of the interaction is consistent with our expectation that the indirect effect (overload effect) is less for individuals with higher holistic thinking. Due to the significance of this interaction, we examined the conditional indirect effects at different values of the moderator (Preacher et al., 2007). For large assortment, at the mean value of holism (4.86) the overload effect was $-.13$ ($p < .001$), while the overload effect decreased to $-.07$ at 1 SD above the mean holism (5.64) ($p < .01$) and increased to $-.19$ at 1 SD below the mean holism (4.08) ($p < .001$). More importantly, the index of moderated mediation (IMM), which is a formal test of moderated mediation (Hayes, 2015), was also significant ($\beta = .08$, $p < .05$), confirming that holism mitigates the mediating effect of overload feeling (overload effect). Similarly, for very large assortment, at the mean

value of holism the overload effect was $-.25$ ($p < .001$), while the overload effect decreased to $-.14$ with 1 SD above the mean holism ($p < .01$) and increased to $-.37$ with 1 SD below the mean holism ($p < .001$). Again, the IMM was significant ($\beta = .14, p < .05$), confirming that holism moderates the mediating effect of overload feeling. These results support the hypothesis that the overload effect of large assortment will be mitigated for holistic thinkers.

Covariate familiarity did not have a significant effect on overload ($p > .2$). However consistent with prior literature, it did have a positive effect on satisfaction ($\beta = .14, p < .01$). Given this finding, we further examined whether our results hold for those with high levels of familiarity (i.e., those reporting above median familiarity with the brand). Overload feeling still mediated the effect of assortment size on satisfaction for large and very large assortments (p 's $< .05$), and holism moderated this mediation (IMM: p 's $< .05$); the effect of overload feeling on satisfaction was reduced as holistic thinking increased.

Robustness Checks

While we predicted (and supported) that holistic thinking would moderate the overload effect by mitigating the negative impact of overload feeling on satisfaction, for robustness, we also checked the following alternate paths in the model: direct effects of holistic thinking on overload feeling and perceived assortment size; and whether holistic thinking moderates the relationship between assortment size and overload feeling. Consistent with our theorizing, none of these effects were significant (p 's $> .1$).

Discussion

We provide initial support that the negative effect of large assortment on satisfaction through overload feeling was reduced for consumers who tend to approach decisions holistically. To

further test the generalizability of these results, in the next study, we examine the mitigating effect of holistic thinking in a non-student sample. In addition, in order to test our findings for those who apply holistic thinking to the specific decision situation (whether or not they are chronic holistic thinkers), we include a second measure of holistic thinking based on decision strategies applied during the choice task.

Townsend and Kahn (2014) found that images increase perceived complexity. Reutskaja and Hogarth (2009) found that varying colors in the large assortment increases satisfaction with the chosen option (compared with varying the shapes of the options) and that color sets increase process satisfaction for all assortment sizes. Therefore, we also eliminate pictures in study 2 to ensure that they are not biasing our results in any way. In addition, to increase generalizability, we use a different method of constructing the assortments and use different assortment sizes.

Study 1b

Method

Ninety-seven respondents from an online panel (Amazon Mechanical Turk (MTurk); see Buhrmester et al., 2011 for discussion of benefits of MTurk as a data source) ($M_{\text{Age}} = 37.1$, 64% female, all from US) participated in a between-subjects experiment with two assortment size conditions: small (5) and large (20). Assortment sizes were developed by choosing five chocolates at random from the set of 20 for each participant in the small assortment condition. All other procedures and measures were the same as the prior study (overload feeling & satisfaction α 's > .77).

We included two measures of holistic thinking – the same holism scale used in study 1a (chronic holistic thinking; $\alpha = .78$) and a new measure which asked participants about their decision-specific strategies in this task. We selected items for this measure using the properties of holistic (“I acted according to my intuition,” “I picked the one that “feels” right,” ($r = .59$)) and analytical thinking (“I analyzed each chocolate and then chose the best one,” “I went through the chocolate options based on the attributes,” “I evaluated my options in detail” ($\alpha = .77$)) that have been previously identified in the literature (cf., Dijkstraa et al., 2012; Nisbett et al., 2001). We then deducted the score of the analytic items from the holistic items’ score to obtain a measure of holistic strategy applied.

Study 1b results

Manipulation Check

The assortment size manipulation was successful ($M_S = 3.42$ vs. $M_L = 4.76$; $F(1, 95) = 32.56$, $p < .001$), with both the small and large assortment means significantly different than the mid-point (p 's $< .01$), suggesting the small assortment was seen as “small” and the large assortment as “large.”

Moderating Role of Holistic Thinking

Similar to study 1a, conditional indirect effects (5,000 samples) again showed that the greater a person’s chronic holistic thinking tendency, the smaller the overload effect (at $-1SD_{ChrHol} = 4.07$, $axb = -.32$; at $M_{ChrHol} = 4.95$, $axb = -.23$, p 's $< .01$; and at $+1SD_{ChrHol} = 5.82$, $axb = -.13$, $p < .05$) (IMM = .11, $p < .05$) ($c = .54$, $p < .01$). As expected, the moderated mediation test operationalizing holistic thinking as decision-specific strategy applied gave similar results.

Large (vs. small) assortments create overload feeling ($\beta = .60$, $p < .05$), and the overload feeling

has a negative effect on satisfaction ($\beta = -.30, p < .001$) ($c = .53, p < .01$). However, as expected, the negative effect of overload feeling was moderated by holistic thinking ($\beta = .06, p = .05$).

Examining the conditional indirect effects, we found that for the large assortment, at the mean value of holism (-1.17) the overload effect was $-.22 (p < .01)$, while the overload effect decreased to $-.15$ at 1 SD above the mean holism (.88) ($p < .05$) and increased to $-.30$ at 1 SD below the mean holism (-3.23) ($p < .01$) (IMM = .04, $p < .08$). These results support our hypothesis; the more a person engages in holistic thinking, the less the indirect negative effect of assortment size (through overload feeling) on satisfaction.

Further, we conducted the same robustness checks from Study 1a for both chronic and decision-specific holistic thinking. We also examined direct effects of overload and assortment size on decision-specific holistic thinking. None of the alternate paths were significant (p 's $> .05$) except decision-specific holistic thinking's impact on perceived assortment size ($\beta = .17$) and the relationship between assortment size and overload feeling ($\beta = .24$) (p 's $< .05$), perhaps due to the lack of images (see general discussion).

Discussion

Study 1b provides additional evidence that use of a holistic thinking style can help mitigate the negative effect of large assortment on satisfaction by reducing the overload effect. Further, this effect occurs for both chronic holistic thinkers and those applying the strategy to a particular decision. However, Studies 1a and 1b both examine these effects within the same hedonic category – chocolates. In addition, our analyses have focused on the effects of assortment size on satisfaction through overload feeling, as we have hypothesized that it is this path that holistic thinking affects. However, as discussed earlier, while assortment size can negatively impact

satisfaction due to overload feeling, it also positively impacts satisfaction through increased perceived variety (e.g. Townsend and Kahn, 2014; Spassova and Isen, 2013). Thus, in the next study, we generalize our results to a new category (carry-on luggage) and expand our focus to consider both the positive and negative effects of assortment size on satisfaction. We use this expanded focus to confirm that holistic thinking influences satisfaction by reducing the overload effect rather than through other alternative paths.

Study 1c

Participants and Design

One-hundred-fifty-one respondents from MTurk ($M_{Age} = 39.6$, 64% female, all from US) participated in a between-subjects experiment with three assortment size conditions: small (6 options), large (24 options), and very large (48 options).

Stimuli Creation

To create the very large assortment, we used “carry-on luggage” as a keyword on Amazon.com to find appropriate options that were similar in price. We downloaded the descriptions of the products, including the bag’s product dimensions, weight, and pictures of available colors. We then selected an assortment of 48 options, including 18 black, 11 purple, 10 blue and 9 red bags. Descriptions of the items included the product picture, the product name (e.g. CalPak Valley 20” Carry-On Spinner), the product dimensions, the product weight and approximately six bullets about product features (e.g. push-button self-locking retractable handle system).

Procedure

Participants were asked to imagine they were purchasing a bag for a business trip and told they were looking for a high quality bag that would fulfill the needs of a business traveler. The large and small assortments were created by randomly selecting 6 or 24 options from this set of 48.

Measures

We used the same overload feeling ($\alpha = .84$) and satisfaction ($\alpha = .83$) measures from the previous studies. For perceived variety, we asked “How much variety do you think there was in the assortment?” (1 = a little variety, 7 = a lot of variety; Spassova and Isen, 2013) The effectiveness of the assortment size manipulation was assessed using two measures: “How did you feel about the number of choices available?” (1 = too few, 4 = about right, 7 = too many), and “When initially given the task to pick a carry-on from the assortment, do you think the list should have included more kinds of carry-ons?” (1 = I felt that I had too few carry-ons to choose from, 7 = I felt that I had too many carry-ons to choose from; Diehl and Poynor, 2010) ($r = .66$). Holistic thinking was measured using the same decision-specific thinking strategy items ($r = .56$) from study 1b while analytic thinking items were adapted from Melnyk et al. (2012) and Thompson and Hamilton (2006) (“I was thinking to a large extent about the products' features,” “I evaluated the products feature by feature rather than evaluating the products as a whole,” “I was highly involved.” ($\alpha = .69$)). Overall holistic thinking strategy was calculated as the difference between the holistic items and the analytic items, as in the prior study.

Study 1c results

Manipulation Check

The assortment size manipulation was successful ($F(2, 148) = 32.17, p < .001$) ($M_S = 4.24$ vs. $M_L = 5.56, M_{VL} = 5.99, p$'s $< .001$; M_L vs. $M_{VL}; p < .07$).

Indirect Effects and Moderating Role of Holistic Thinking

We first confirmed the presence of the two competitive forces – overload effect and variety effect – in the decision process. As expected, perceived variety and overload effect were significant parallel mediators. PROCESS Model 4 (Hayes, 2013) parallel mediation test (5,000 samples) showed that while larger assortments had a positive effect on satisfaction through perceived variety (variety effect: $\beta_L = .08$, $\beta_{VL} = .09$, p 's $< .05$), they also had a negative effect on satisfaction through the overload effect (overload effect: $\beta_L = -.18$, $\beta_{VL} = -.33$, p 's $< .05$) ($c_L p > .1$, $c_{VL} p > .6$). To be confident that holistic thinking moderates the impact of overload feeling on satisfaction, rather than another path in the decision making process, we ran parallel mediation tests with a moderator (PROCESS Model 58, Hayes, 2013). Findings showed that both large and very large (vs. small) assortments create overload feeling ($\beta_L = .73$, $\beta_{VL} = 1.29$; p 's $< .05$), and enhance perceived variety ($\beta_L = .78$, $\beta_{VL} = .97$; p 's $< .01$), while overload feeling had a negative effect ($\beta = -.24$, $p < .001$) and perceived variety had a positive effect ($\beta = .11$, $p < .05$) on satisfaction (c 's p 's $> .1$). In addition, as expected, the AssortmentxHolism interaction was not significant on either overload feeling or perceived variety, and VarietyxHolism interaction was not significant on satisfaction (p 's $> .2$). However, as hypothesized, OverloadFeelingxHolism interaction was significant on satisfaction ($\beta = .06$, $p < .05$), and the bootstrapping technique for conditional indirect effects (5,000 samples) showed that the more a person engages in holistic thinking, the less the indirect negative effect of assortment size (through overload feeling) on satisfaction (at - 1SD of M_{Holism} (-2.24): $axb_L = -.26$ $p < .05$, $ax_{VL} = -.47$ $p < .001$; at M_{Holism} (-.45): $axb_L = -.19$ $p < .05$, $ax_{VL} = -.34$ $p < .001$; at +1SD of M_{Holism} (1.34), $axb_L = -.13$, $ax_{VL} = -.22$; p 's = .05) ($IMM_L = .04$, $IMM_{VL} = .07$; p 's = .05). Further, none of the robustness checks

mentioned in Study 1b were significant (p 's > .2). These results support that holism moderates the 'overload feeling -> satisfaction' path, rather than exerting its effect on other paths within the model.

Discussion

Study 1c replicates the results from the prior studies and generalizes them to a new product category. It also confirms that holism moderates the impact of assortment size on satisfaction via mitigating the negative impact of overload feeling caused by large (vs. small) assortment, rather than through another path.

So far, we have measured holism and showed that both chronic and decision-specific holistic thinking mitigate the overload effect. However, because these are measured variables, it is possible that some other characteristic associated with this trait can explain our results. Therefore, to better support our claims of causality and to rule out alternative explanations, in the following two studies we manipulate holism.

Hedonic products tend to be experienced holistically rather than analytically (Hirschman and Holbrook, 1982) and hedonic consumption is an affect-rich one, utilizing System 1 processing while utilitarian consumption is functional, utilizing System 2 processing (Rottenstreich et al., 2007; Saini and Thota, 2010). Since System 1 and System 2 processing are applied in holistic and analytic thinking respectively, we propose that hedonic consumption should trigger holistic thinking. Accordingly, we expect that the overload effect of larger assortment will be mitigated in a hedonic decision context compared to a utilitarian one. We test this hypothesis in the following study.

Study 2

Pretest

A decision can be framed as hedonic or utilitarian based on the consumption goal (e.g., Botti and McGill, 2010; Kronrod and Danziger, 2013). Accordingly, we used the utilitarian scenario from study 1c and constructed a new hedonic version of the scenario by adapting manipulations used by prior researchers (e.g., Botti and McGill, 2010; Kronrod and Danziger, 2013). To assess the effectiveness of the manipulation, we ran a pretest. Fifty-one students from a northeastern university were randomly assigned to read either the hedonic (vacation) scenario or the utilitarian (business) scenario. Each scenario included words/definitions to prime the relevant goal. For example, the hedonic scenario talked about taking a fun vacation and that they *would like to* find a carry-on that would please them and make them feel good. In contrast, the utilitarian scenario talked about taking a business trip and that they *should* find a carry-on of high quality that is functional and sturdy. After reading the scenario, participants were asked to select a piece of luggage from a very large assortment with similarly priced options. The hedonic nature of the decision was measured with two items: “Considering the scenario you were faced with, what did you base your carry-on choice on?” (1 = rational attributes, 7 = my heart and 1 = achieving a goal, 7 = experiencing pleasure) ($r = 0.32$; Smith et al., 2005). To assess the utilitarian nature of the decision, participants rated the product decision as “1 = not at all utilitarian, 7 = very utilitarian”, “1 = unimportant, 7 = important,” and “1 = not at all functional, 7 = very functional” ($\alpha = 0.73$). ANOVA confirmed that the manipulation was successful. The hedonic scenario was seen as more hedonic ($F(1, 49) = 5.42$; $M_H = 3.80$, $M_U = 3.00$) and less utilitarian ($F(1, 49) =$

5.86; $M_H = 5.06$, $M_U = 5.72$) than the utilitarian scenario (p 's < .05). Further, the two scenarios did not differ in decision pleasantness ($p > .6$).

Participants and Design

Two-hundred-and-forty-five students (40% female) participated in a 2 (assortment size: small (6 items), very large (48 items)) x 2 (decision goal: hedonic, utilitarian) between-subjects experiment. The procedure was similar to that used in the prior studies.

Measures

We used the same overload feeling ($\alpha = .83$), satisfaction ($\alpha = .88$), assortment size manipulation check ($r = .65$) and decision strategy ($\alpha = .72$ for analytic, $r = .61$ for holistic) measures from the previous study. Decision goal was measured using the same measures from the pretest ($r = .40$ for hedonic and $\alpha = .65$ for utilitarian). Finally, we also included measures of involvement (frequency of flying for business and leisure; 1 = never, 7 = very frequently) as control variables since product category involvement has been found to affect satisfaction (Aljukhadar et al., 2012; Mogilner et al., 2008).

Study 2 results

Manipulation Checks

ANOVA confirmed that the assortment size manipulation was successful ($M_S = 4.0$ vs. $M_L = 5.8$; $F(1, 241) = 147.8$, $p < .001$). Decision goal did not impact assortment size perception ($p > .5$) nor did it interact with the assortment size manipulation ($p > .8$). The manipulation for decision goal was successful, as well. As expected, the hedonic condition was seen as more hedonic ($M_h = 3.9$, $M_u = 3.31$; $F(1,240) = 11.77$, $p < .001$) and less utilitarian ($M_h = 5.0$, $M_u = 5.32$; $F(1,240) = 8.48$, $p < .01$) than the utilitarian condition. Further, holistic thinking manipulation was successful;

those in the hedonic goal condition reported greater holistic thinking ($M = .98$) than those in the utilitarian goal condition ($M = .34$) ($F(1, 239) = 8.40, p < .01$).

Moderating Role of Holistic Thinking

As expected very large (vs. small) assortments create overload feeling ($\beta = .77, p < .001$), and the overload feeling has a negative effect on satisfaction ($\beta = -.32, p < .001$) ($c = .07, p > .3$). Frequency of business flights had a marginally significant effect on overload feeling ($\beta = .15, p < .08$); frequency of leisure flights did not have any impact on overload feeling ($p > .9$); and neither impacted satisfaction (p 's $> .3$). As predicted, the negative effect of overload feeling was moderated by hedonic goal ($\beta = .18, p < .05$). Analysis of the conditional indirect effects showed that the negative indirect effect of assortment size decreases with hedonic goal (Overload effect with utilitarian goal: $-.24, p < .001$; with hedonic goal: $-.10, p < .05$) ($IMM = .14, p < .05$). In addition, none of the robustness checks discussed in Study 1a were significant (p 's $> .1$).

Discussion

In this study, we replicated our findings from the prior studies while manipulating thinking style with an integral task rather than measuring it as either a trait or applied decision strategy. By providing participants with a hedonic decision goal, we were able to prime consumers to think holistically, thus reducing the impact of overload feeling on satisfaction.

While the current study illustrates that consumers' thinking processes are malleable and can be manipulated via consumption goal, in the next study, we use a direct manipulation of thinking style and show that incidental manipulations also mitigate the overload effect.

Study 3

Two-hundred-and-ninety students (42.1% female) participated in a 2 (assortment size: small (6 options), very large (48 options)) x 2 (processing style: holistic vs. analytic) x 2 (decision goal: hedonic vs. utilitarian) between-subjects experiment. Respondents were invited to participate in two ostensibly unrelated tasks. The first task was introduced as a “visual processing task” and included the processing style manipulation (map task; Burgoon et al., 2013; Förster, 2009; Friedman et al., 2003). Participants were presented with images of states with some cities labeled within them. In the holistic condition, respondents were asked to focus on the maps as a whole and answer questions about the shape of the images, while in the analytic condition, respondents focused on the cities and answered questions about which cities were included on the map. Following this task, respondents participated in a “decision process task,” where they were asked to choose a carry-on from either a small or very large assortment, for business or vacation purposes. Then they answered questions for overload feeling ($\alpha = .77$), satisfaction ($\alpha = .88$), assortment size manipulation check ($r = .61$), decision goal ($r = .51$ for hedonic and $\alpha = .77$ for utilitarian), involvement (frequency of flying for business and leisure).

Study 3 results

Manipulation Check

The assortment size manipulation was successful ($F(1, 288) = 159.22$, $M_S = 3.95$ vs. $M_{VL} = 5.75$; $p < .001$).

Moderating Role of Holistic Thinking

Before the moderated mediation analysis, we regressed Overload feeling, Thinking Style, and Decision Goal, their two-way and three-way interactions, and control variables on Satisfaction. Only the OverloadFeelingxThinkingStyle interaction ($\beta = .13, p < .10$) and OverloadFeeling main effect ($\beta = -.42, p < .001$) were significant (other p 's $> .1$). This suggests that both decision goals were affected similarly by the thinking style manipulation; thus for the moderated mediation analysis we collapsed across the goal conditions.

Using PROCESS Model 14 (Hayes, 2013), we conducted moderated mediation analysis (controlling for involvement measures). Replicating our previous findings, very large (vs. small) assortment creates overload feeling ($\beta = 1.46, p < .001$), and overload feeling has a negative effect on satisfaction ($\beta = -.39, p < .001$) ($c = -.06, p > .6$). Involvement measures did not have an impact on either overload feeling or satisfaction (p 's $> .1$). As predicted, the negative effect of overload feeling was moderated by holistic thinking style ($\beta = .14, p = .06$). Analyses of the conditional indirect effects showed that the negative indirect effect of assortment size decreases with holistic processing (Overload effect with analytic thinking: $-.56$; with holistic thinking: $-.36$; p 's $< .001$) (IMM = $.21, p < .05$). Further, none of the robustness checks mentioned in Study 1a were significant (p 's $> .2$).

Discussion

Study 3 again replicates our finding that holistic thinking mitigates the overload effect. While studies 1a-c measured holistic thinking and study 2 used an integral manipulation of holistic thinking, the current study manipulated holistic thinking incidentally through a priming task. In addition, these results held across both hedonic and utilitarian purchasing tasks. Note that in Study 2 participants were not previously primed towards one type of thinking style, as they were

in this study. This suggests that decision goal may only prime a particular thinking style in the absence of other cues towards one style or the other; this distinction should be explored in future research. Nonetheless, the current results support our hypothesis that the use of a holistic thinking style – whether primed incidentally or integrally – can help reduce the negative impact of overload feeling, and thus mitigate the negative impact of a large assortment on satisfaction.

General Discussion

While a large body of research examines the question of whether larger assortments increase or decrease satisfaction, researchers have yet to agree on the answer, leading to calls for discovering moderators and a greater understanding of the psychological process of choosing from varying assortment sizes (Chernev et al., 2010; Iyengar and Lepper, 2000). Accordingly, this paper considers the process underlying the impact of assortment sizes on satisfaction and identifies a new type of moderator – one which reduces the impact of overload feeling on satisfaction, rather than reducing the overload feeling itself. More specifically, we show how holistic thinking mitigates the negative impact of large assortment on satisfaction across a variety of contexts and assortment sizes.

Prior research has indicated that large assortments have a negative impact on satisfaction due to increased overload feeling (Diehl and Poynor, 2010; Spassova and Isen, 2013). Thus, to reduce the negative impact of large assortments on satisfaction one can either reduce the feeling of overload (e.g., by positive affect; Spassova and Isen, 2013) or identify ways to reduce the impact of these overload feelings on satisfaction, as we do in this paper. Holistic thinking helps decrease the overload effect (negative effect of assortment size on satisfaction through overload

feeling) by mitigating the impact of overload feeling on satisfaction. Accordingly, throughout 5 studies, we either measured (studies 1a-c) or manipulated (studies 2, 3) the thinking style, and showed that this mitigation happens for both chronic (studies 1a, 1b) and decision-specific (studies 1b, 1c) holistic thinkers (i.e. holistic thinking as an individual factor), as well as those who adopt a more holistic thinking style due to the decision goal (study 2) or incidental priming (study 3; map task) (i.e. holistic thinking as a situational factor). In addition, we introduced a new way of manipulating holistic thinking. While prior literature has suggested emotional processing might prime system 1 processing, to the best of our knowledge, our research is the first to empirically show a hedonic goal increases holistic thinking.

Managerial and Consumer Implications

Managers frequently seek to satisfy varying customer needs by increasing the number of options in an assortment. However, some studies suggest that large assortments do not always increase satisfaction, but rather may overwhelm consumers and cause them to feel dissatisfied and/or regret their decisions. Accordingly, some managers have started to decrease their assortment sizes to overcome this possible effect. However, our research indicates that managers do not need to forego the possibility of satisfying varying needs of customers (by decreasing the assortment size), rather they can focus on customers' thinking styles. Our findings show that consumers who approach decision tasks holistically are less negatively impacted by large assortments. Managers can take advantage of this finding by priming hedonic decision goals (vs. utilitarian ones), as such goals can prime holistic processing. One way to do this would be to highlight the product's hedonic attributes in order to position the consumption experience as a hedonic one. Even a utilitarian product can be framed as a hedonic experience; e.g. "an ad may

frame a credit card as access to happy consumption or tires as opening the road to exciting adventures.” (Kronrod et al., 2011; pg. 55). Consumers can also take advantage of these findings by approaching their consumption holistically. Even if consumers are not chronic holistic processors, they can manipulate their thinking style by focusing on the hedonic attributes of the consumption experience.

Limitations and Future Research

While large assortments create overload feeling which decreases satisfaction, through 5 studies, our research shows that this overload feeling can be mitigated by an individual or a situational factor (i.e. holistic thinking). Further, alternate path analyses were nonsignificant, adding more to the robustness of our research. The only unexpected finding was *decision-specific holistic thinking*'s positive impact on perceived assortment size and the relationship between assortment size and overload feeling in Study 1b. However, unlike the other studies, Study 1b did not contain images of the assortment options. Individuals who apply gestalt/holistic processing prefer visual (vs. verbal) presentations (Townsend and Kahn, 2014). Thus, while the same links were nonsignificant with *chronic holistic thinking* in the same study (suggesting chronic holistic thinkers might be accustomed to evaluating options with or without pictures), the absence of pictures might have made it harder for decision-specific holistic thinkers to apply gestalt approach, leading them to perceive a greater amount of information and feel more overloaded. Future research can study the impact of visual vs. verbal presentation of the assortment and its interaction with the thinking style on choice overload.

Consistent with prior literature, we focused on satisfaction as our dependent measure (see meta-analyses of Scheibehenne et al. 2010 and Chernev et al. 2015), which is found to affect

important variables such as repeat purchase (Newman and Werbel, 1973), and stock returns (Sorescu and Sorescu, 2016). However, choice overload can be measured with a variety of dependent variables such as decision fatigue, choice deferral, and choice quality. Future research can expand our findings to these other related outcome variables.

Future research can also focus on other possible factors that might help mitigate overload feeling's negative impact on satisfaction, as well as different paths in the model by identifying moderators that might decrease the negative indirect effect (overload effect) or increase the positive indirect effect (variety effect) of large assortments on satisfaction. By pinpointing exactly how moderators impact the decision process (i.e., by which path), research can better identify conditions that lead to choice overload and generalize these to different, wider contexts.

REFERENCES

- Aljukhadar, M., Senecal, S. and Daoust, C. (2012), "Using Recommendation Agents to Cope with Information Overload," *International Journal of Electronic Commerce*, Vol. 17 No. 2, pp. 41-70.
- Anderson, C. (2006), *The Long Tail: Why the Future of Business is Selling Less for More*, New York: Hyperion.
- Aydinoglu, N.Z. and A., Krishna (2011), "Guiltless Gluttony: The Asymmetric Effect of Size Labels on Size Perceptions and Consumption," *Journal of Consumer Research*, Vol. 37 No. 6, pp. 1095-1112.
- Berger, J., Draganska, M. and Simonson, I. (2007), "The Influence of Product Variety on Brand Perception and Choice," *Marketing Science*, Vol. 26 No. 4, pp. 460-472.

- Botti, S. and McGill, A.L. (2010), "The Locus of Choice: Personal Causality and Satisfaction with Hedonic and Utilitarian Decisions," *Journal of Consumer Research*, Vol. 37 No. 6, pp. 1065-1078.
- Boyd, E.D. and Bahn, K.D. (2009), "When do Large Product Assortments Benefit Consumers? An Information-Processing Perspective," *Journal of Retailing*, Vol. 85 No. 3, pp. 288-229.
- Buck, R., Anderson, E., Chaudhuri, A. and Ray, I. (2004), "Emotion and reason in persuasion Applying the ARI model and the CASC Scale," *Journal of Business Research*, Vol. 57 No. 6, pp. 647-656.
- Buhrmester, M., Kwang, T. and Gosling, S.D. (2011), "Amazon's Mechanical Turk: A New Source of Inexpensive, yet High-Quality, Data?" *Psychological Science*, Vol. 6 No. 1, pp. 3-5.
- Burgoon, E.M., Henderson, M.D. and Markman, A.B. (2013), "There Are Many Ways to See the Forest for the Trees: A Tour Guide for Abstraction," *Perspectives on Psychological Science*, Vol. 8 No. 5, pp. 501-520.
- Cheema, A. and Patrick, V. M. (2012), "Influence of Warm Versus Cool Temperatures on Consumer Choice: A Resource Depletion Account," *Journal of Marketing Research*, Vol. 49 No. 6, pp. 984-995.
- Chernev, A. (2003), "When More Is Less and Less Is More: The Role of Ideal Point Availability and Assortment in Consumer Choice," *Journal of Consumer Research*, Vol. 30, pp. 170-183.
- Chernev, A., Bockenholt, U. and Goodman, J. (2010), "Commentary on Scheibehenne, Benjamin, (2003), "When More Is Less and Less Is More: The Role of Ideal Point

- Availability and Assortment in Consumer Choice,” *Journal of Consumer Research*, Vol. 30 No. 2, pp. 170-183.
- Chernev, A., Bockenholt, U. and Goodman, J. (2015), “Choice Overload: A Conceptual Review and Meta-Analysis,” *Journal of Consumer Psychology*, Vol. 25 No. 2, pp. 333-358.
- Choi, I., Koo, M. and Choi, J.A. (2007), “Individual Differences in Analytic Versus Holistic Thinking,” *Personality and Social Psychology Bulletin*, Vol. 33 No. 5, pp. 691-705.
- Diehl, K. and Poynor, C. (2010), “Great Expectations?! Assortment Size, Expectations, and Satisfaction,” *Journal of Marketing*, Vol. 47 No. 2, pp. 312-322.
- Dijkstraa, K.A., van der Pligtt, J., van Kleeff, G.A. and Kerstholt, J.H. (2012), “Deliberation versus intuition: Global versus local processing in judgment and choice,” *Journal of Experimental Social Psychology*, Vol. 48 No. 5, No. 1156-1161.
- Eaton, B.C. and Lipsey, R.G. (1979), “Comparison Shopping and the Clustering of Homogeneous Firms,” *Journal of Regional Science*, Vol. 19 No. 4, pp. 421-435.
- Förster, J. (2009), “Relations between perceptual and conceptual scope: How global versus local processing fits a focus on similarity versus dissimilarity,” *Journal of Experimental Psychology: General*, Vol. 138 No. 1, pp. 88-111.
- Friedman, R.S., Fishbach, A., Förster, J. and Werth L. (2003), “Attentional priming effects on creativity,” *Creativity Research Journal*, Vol. 15 No. 2, pp. 277-286.
- Hayes, A.F. (2013), *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*, New York: Guilford.
- Hayes, A.F. (2015), “An index and test of linear moderated mediation,” *Multivariate Behavioral Research*, Vol. 50 No. 1, pp. 1-22.

- Hirschman, E. C. and Holbrook, M.B (1982), "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *Journal of Marketing*, Vol. 46 No. 3, pp. 92-101.
- Iyengar, S.S. and Lepper, M.R. (2000), "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?," *Journal of Personality and Social Psychology*, Vol. 79 No. 6, pp. 995-1006.
- Kahn, B.E. and Lehmann, D.R. (1991), "Modeling Choice among Assortments," *Journal of Retailing*, Vol. 67 No. 3, pp. 274-299.
- Kronrod, A., Grinstein, A. and Wathieu, L. (2011), "Enjoy! Hedonic Consumption and Compliance with Assertive Messages," *Journal of Consumer Research*, Vol. 39 No. 1, pp. 51-61.
- Kronrod, A. and Danziger, S. (2013), "'Wii Will Rock You!' The Use and Effect of Figurative Language in Consumer Reviews of Hedonic and Utilitarian Consumption," *Journal of Consumer Research*, Vol. 40 No. 4, pp. 726-739.
- Levav, J., N., Reinholtz and Lin. C. (2012), "The Effect of Ordering Decisions by Choice-Set Size on Consumer Search," *Journal of Consumer Research*, Vol. 39 No. 3, pp. 585-599.
- Levy, M. and Weitz, B.A. (2001), *Retailing Management*, 4th ed., Boston: McGraw-Hill.
- Lin, C. and Wu, P. (2006), "The Effect of Variety on Consumer Preferences: The Role of Need for Cognition and Recommended Alternatives," *Social Behavior and Personality*, Vol. 34 No. 7, pp. 865-875.
- Lurie, N.H. (2004), "Decision Making in Information-Rich Environments: The Role of Information Structure," *Journal of Consumer Research*, Vol. 30 No. 4, pp. 473-486.

- Oliver, R. L. (1997), *Satisfaction: A Behavioral Perspective on the Consumer*, New York: McGraw-Hill.
- Malhotra, N.K., Jain, A.K. and Lagakos, S.W. (1982), “The Information Overload Controversy: An Alternative Viewpoint,” *Journal of Marketing*, Vol. 46 No. 2, pp. 27-37.
- Melnyk, V., Klein, K. and Völckner, F. (2012), “The Double-Edged Sword of Foreign Brand Names for Companies from Emerging Countries,” *Journal of Consumer Research*, Vol. 76 No. 6, pp. 21-37.
- Mogilner, C., Rudnick, T. and Iyengar, S. (2008), “The Mere Categorization Effect: How the Presence of Categories Increases Choosers’ Perceptions of Assortment Variety and Outcome Satisfaction,” *Journal of Consumer Research*, Vol. 35 No. 2, pp. 202-215.
- Monga, A.B. and John, D.R. (2008), “When does negative brand publicity hurt? The moderating influence of analytic versus holistic thinking,” *Journal of Consumer Psychology*, Vol. 18 No. 4, pp. 320-332.
- Monga, A.B. and John, D.R. (2010), “What Makes Brands Elastic? The Influence of Brand Concept and Styles of Thinking on Brand Extension Evaluation,” *Journal of Marketing*, 74 No. 3, pp. 80-92.
- Newman, J. W. and Werbel, R. A. (1973), “Multivariate Analysis of Brand Loyalty for Major Household Appliances,” *Journal of Marketing Research*, Vol. 10 No. 4, pp. 404–409.
- Nisbett, R. E., Peng, K., Choi, I. and Norenzayan, A. (2001), “Culture and systems of thought: Holistic versus analytic cognition,” *Psychological Review*, Vol. 108 No. 2, pp. 291-310.
- Phillips, W.J., Fletcher, J.M., Marks, A.D.G. and Hine, D.W. (2016), “Thinking styles and decision making: A meta-analysis,” *Psychological Bulletin*, Vol. 142 No. 3, pp. 260-290.

- Polman, E. (2012), "Effects of Self–Other Decision Making on Regulatory Focus and Choice Overload," *Journal of Personality and Social Psychology*, Vol. 102 No. 5, pp. 980-993.
- Preacher, K. J., Rucker, D.D. and Hayes, A.F. (2007), "Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions," *Multivariate Behavioral Research*, Vol. 42 No. 1, pp. 185-227.
- Reutskaja, E. and Hogarth, R.M. (2009), "Satisfaction in Choice as a Function of the Number of Alternatives: When "Goods Siate," *Psychology & Marketing*, Vol. 26 No. 3, pp. 197-203.
- Rottenstreich, Y., Sood, S. and Brenner, L. (2007), "Feeling and Thinking in Memory-Based versus Stimulus-Based Choices," *Journal of Consumer Research*, Vol. 33 No. 4, pp. 461-469.
- Saini, R. and Thota, S.C. (2010), "The psychological underpinnings of relative thinking in price comparisons," *Journal of Consumer Psychology*, Vol. 20 No. 2, pp. 185-192.
- Scheibehenne, B. and Todd, P.M. (2009), "Introduction to the Special Issue on Assortment Structure and Choice," *Psychology and Marketing*, Vol. 26 No. 3, pp. 195-196.
- Scheibehenne, B., Greifeneder, R. and Todd, P.M. (2009), "What Moderates the Too-Much-Choice Effect?" *Psychology and Marketing*, 26 (3), 229-253.
- Scheibehenne, B., Greifeneder, R. and Todd, P.M. (2010), "Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload," *Journal of Consumer Research*, Vol. 37 No. 3, pp. 409-425.
- Schwartz, B. (2004), *The Paradox of Choice: Why More Is Less*, New York: Harper Collins.

- Smith, D., Menon, S. and Sivakumar, K. (2005), "Online Peer and Editorial Recommendations, Trust, and Choice in Virtual Markets," *Journal of Interactive Marketing*, Vol. 19 No. 3, pp. 15-37.
- Sorescu, A. and Sorescu, S. M. (2016), "Customer Satisfaction and Long-Term Stock Returns," *Journal of Marketing*, Vol. 80 No. 5, pp. 110-115.
- Spassova, G. and Isen, A.M. (2013), "Positive affect moderates the impact of assortment size on choice satisfaction," *Journal of Retailing*, Vol. 89 No. 4, pp. 397-408.
- Stanovich, K.E. and West, R.F. (2000). "Individual differences in reasoning: Implications for the rationality debate?," *Behavioral and Brain Sciences*, Vol. 23 No. 5, pp. 645-726.
- Thompson, D.V. and Hamilton, R.W. (2006), "The Effects of Information Processing Mode on Consumers' Responses to Comparative Advertising," *Journal of Consumer Research*, Vol. 32 No. 4, pp. 530-540.
- Townsend, C. and Kahn, B.E. (2014), "The "Visual Preference Heuristic": The Influence of Visual versus Verbal Depiction on Assortment Processing, Perceived Variety, and Choice Overload," *Journal of Consumer Research*, Vol. 40 No. 5, pp. 993-1015.