Choice Deprivation, Choice Overload, and Satisfaction with Choices Across Six Nations

Elena Reutskaja, Nathan N. Cheek, Sheena Iyengar, and Barry Schwartz

Abstract
Whether consumers have too little, too much, or the ideal amount of choice can have profound consequences. The present research explores patterns of choice deprivation (having less choice than desired) and choice overload (having more choice than desired) across six choice domains in six countries that together provide home to about half the human population (Brazil, China, India, Japan, Russia, and the United States; combined N = 7,436). In most domains in most countries, choice deprivation was the norm—only in the United States was choice overload commonly reported. Deprivation was also more strongly related to decreased satisfaction with choices than was overload, suggesting that choice deprivation can be both more common and more consequential than overload. The present research has implications for “inverted U-shape” theories of consumer choice experiences and underlines the need for more diverse samples, including cross-cultural samples, in research on choice deprivation and overload.

Keywords
choice, choice overload, choice deprivation, cross-cultural differences, well-being

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What makes a good life? The answer is complex: a vast body of research enumerates a sprawling list of factors related to life satisfaction and happiness. A central marketing insight from this literature is that because subjective well-being is shaped by such a wide array of sources—from political climate and local environment to relationship quality and income levels—it is important for researchers to study consumption experiences at “finer” levels beyond overall satisfaction with life (e.g., happiness with money or with the purchase of a good; Hsee et al. 2009). This article investigates one of these “finer” levels of satisfaction—namely, satisfaction with the number of options people encounter while making choices throughout their daily lives, both in mundane domains such as soft drinks and in vitally important domains such as jobs.

Satisfaction with the number of available options emerges as a crucial research question because of the modern proliferation of choice—in many contexts, consumers have more options than ever before (Schwartz 2016). A large body of literature in consumer research, economics, and psychology suggests that this proliferation is cause for both celebration and concern. On the one hand, because having too few options undermines happiness, motivation, satisfaction, and health, having more options can improve well-being (e.g., Reibstein, Youngblood, and Fromkin 1975; Ryan and Deci 2000; Schwartz 2016; Von Neumann and Morgenstern 1944). On the other hand, larger choice sets can prove overwhelming, increasing cognitive conflict and leading to negative subjective and objective consequences (e.g., Chernev, Böckenholt, and Goodman 2015; Iyengar and Lepper 2000; Reutskaja et al. 2020; Schwartz 2016). These findings are united in contemporary “inverted U-shape” perspectives on choice set size and satisfaction, which recognize that having either too little choice (choice deprivation) or too much choice (choice overload) can be detrimental to choosers (Grant and Schwartz 2011; Reutskaja and Hogarth 2009; Reutskaja et al. 2018; Shah and Wolford 2007).

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Despite the sustained theoretical and empirical interest in the effects of choice set size, research in both marketing and psychology has almost exclusively focused on lab and field experiments (see Chernev, Böckenholt, and Goodman 2015). Although this approach has provided a foundation for the construction and testing of important theories, it has also left two large gaps in the literature. First, the literature is essentially silent on how consumers experience choice overload and choice deprivation in their everyday lives outside the lab. Second, almost all of the work on choice set size has been conducted in the United States or other contexts that are relatively high on the cultural dimension of individualism (Hofstede 1980), leaving unanswered the question of how consumers from more collectivistic cultural contexts experience choice deprivation and choice overload. The present research begins to fill these gaps with a study of choice deprivation and choice overload in everyday life including more than 7,000 participants across six countries.

Motivating Research Questions

When experiments provide participants with assortments that systematically vary in the numbers of alternatives (e.g., Chernev 2003a; Iyengar and Lepper 2000; Reutskaja et al. 2011; Reutskaja et al. 2018), they necessarily make assumptions about how many options are reasonable to display and are likely to capture choice overload phenomena. They also risk creating somewhat artificial settings in which participants make choices from arrays they may not normally encounter. Accordingly, lab experiments cannot reveal whether and to what extent consumers feel like they have too much or too little choice in their everyday lived experience. To fully understand the implications of experimental findings on deprivation and overload for everyday life, researchers and marketers must have a sense of how commonly these experiences characterize consumers’ choices. This includes not only how often each is experienced but also whether deprivation or overload is more common (or whether they are equally common)—that is, their relative frequency.

A complete understanding of the effects of choice set size also requires that the study of choice deprivation and choice overload be situated within the cultural context of consumers. Culture plays a profound role in shaping consumption across the “consumer journey” (Nam and Kannan 2020), and perceptions of choices and their meaning vary across cultures (e.g., Iyengar 2010; Iyengar and Lepper 1999; Markus and Schwartz 2010; Savani, Markus, and Conner 2008). Almost all of the work on choice set size has been conducted in the United States or other contexts that are relatively high on the cultural dimension of individualism (vs. collectivism; Hofstede 1980). Indeed, in the most recent meta-analysis of the choice set size literature, most studies (72%) were conducted in the United States, and almost all (91%) were conducted exclusively in individualistic cultural contexts (Chernev, Böckenholt, and Goodman 2015). Although not atypical for marketing or psychological science (Cheek 2017; Markus and Schwartz 2010), this pattern leaves open questions about the generalizability of previous findings in this field. Thus, this article first assesses the frequency of overload and deprivation and then explores patterns of these choice experiences in six countries varying in individualism. Our first research questions are as follows:

RQ1a: How common are choice deprivation and choice overload in consumers’ everyday lives?

RQ1b: How does the frequency of choice deprivation and choice overload vary across countries?

Empirical work on choice set size often models the “average” participant’s satisfaction as a function of the number of alternatives by using a quadratic model, showing that satisfaction increases up to a certain point and then declines (see, e.g., Reutskaja and Hogarth 2009). Although this approach has the advantage of simplicity and can describe how many alternatives “on average” a certain population finds overwhelming, it fails to take into account individual differences in choice set size preferences. In contrast, the present work adopts an individual differences approach, assuming that the same number of options that produces overload for some individuals might satisfy or even feel like deprivation for others. Participants were surveyed about their choices in six domains to explore choice deprivation and overload in their everyday lives. These domains spanned different aspects of life, from the trivial to the consequential: soft drinks, automobiles, houses, physicians, education opportunities, and jobs. In each domain, consumers reported their actual amount of choice (i.e., how many options they perceived actually having in a given domain) and their individual ideal amount of choice (i.e., how many options they would ideally want in a given domain).

This method allows the calculation of individual deviations of actual number of choices from ideal number of choices. For each participant, there is a score in each domain reflecting whether they perceive having more choices than they would ideally want (actual choice > ideal choice) or fewer choices than they would ideally want (actual choice < ideal choice). This approach assumes there is no universal “ideal” set; rather, the “ideal” amount of choice depends on the individual. Thus, this article does not test the inverted U-shaped relationship between satisfaction and number of options at the “global” level using a quadratic function. Rather, we argue that satisfaction with choice—as well as feelings of deprivation and overload—should be considered at the individual level, and the statistical analyses reflect this argument.

Experimental demonstrations of the effects of choice set size also leave open the question of whether people’s satisfaction with choice is sensitive to the effects of having too little or too much choice relative to their ideal number of options. The logic of random assignment to either a “small choice set” or a “large choice set” in experimental studies obscures potential variation in choice set size preferences among individuals, instead assuming that most people find the “small” set insufficient and the “large” set overwhelming. Diverging from experimental
paradigms, this article instead investigates whether deviations from ideal amounts (i.e., having too little or too much) relate to choice satisfaction. We also assess this relationship for both Western and non-Western countries, providing a broader picture of how choice overload and deprivation affect satisfaction for countries where almost half of the world’s population lives. Specifically, participants from six countries reported their satisfaction with the choices available to them in each of the six domains, enabling us to examine the relation between having more or less choice than ideally desired and satisfaction with choice. Data from six countries also allows us to investigate whether the effects of choice overload and deprivation on satisfaction vary across countries.

**RQ2a:** Is consumers’ satisfaction with choices sensitive to deviations from ideal amounts of choice in their everyday lives?

**RQ2b:** Does the sensitivity described in RQ2a vary across countries?

Participants’ reports of their actual and ideal choice sets further afford the opportunity to study inverted U-shaped perspectives beyond the limitations of experimental paradigms. Experiments can show whether choice set size affects variables of interest, but without a reference point for how much choice individual participants would like to have, the effects of overload and deprivation cannot typically be compared with each other. In addition to having theoretical implications, knowing whether deprivation or overload is more harmful has potentially important implications for marketers and policy makers. For example, if deprivation is more harmful, then marketers and policy makers might be better off erring on the side of providing too many options, whereas if overload is more harmful, they should perhaps err instead on the side of providing too few options.

The present research design allows for a test of the relative effects of deprivation and overload because participants supplied the reference point of their ideal amount of choice, thus affording a comparison between satisfaction with choices when they report deprivation (actual < ideal) versus when they report overload (actual > ideal). In addition, because traditional approaches to studying choice set size rely on experimentally manipulating sets by assigning participants to choose from a pre-determined number of alternatives, it is difficult for researchers to assess whether the degree of overload or deprivation matters. That is, the extent to which experiencing more (rather than less) deprivation and overload is associated with satisfaction beyond the mere experience of these two binary states is still unknown. The continuous measures of deprivation and overload in the present research, however, are equipped to answer that question. Finally, as with previous RQs, this article also explores whether the effects of overload and deprivation vary across countries. Thus, three additional related research questions are:

**RQ3a:** Do choice deprivation and choice overload have equally strong negative effects?

**RQ3b:** Are the effects from RQ3a sensitive to the degree of deprivation and overload?

**RQ3c:** Are the effects from RQ3a–b different for different countries?

**Theoretical Background**

From the classic economic perspective of rational choice and utility maximization, having too few options from which to choose is more problematic than having too many. Choosers who are satisfied with fewer options can ignore new ones, while those who want more options will benefit from additional alternatives (Von Neumann and Morgenstern 1944). Moreover, too little choice thwarts people’s need for autonomy and control over their lives (Deci and Ryan 2002), and consumers are less likely to make a choice when they have very few options compared with a moderate number (Shah and Wolford 2007).

However, that some choice is good does not mean that more choice is always better. A large body of work has revealed the negative consequences, both behavioral and subjective, of too much choice (for meta-analytic reviews, see Chernev, Böckenholt, and Goodman [2015] and Scheibehenne, Greifeneder, and Todd [2010]; for a more recent review, see Reutskaja et al. [2020]). Behaviorally, being faced with too many options can overwhelm and paralyze consumers, leading them either to choose objectively worse options from larger sets (e.g., Hanoch et al. 2009) or to fail to make any choice at all (e.g., Iyengar and Lepper 2000). Subjectively, choosing from too many options creates frustration and confusion, increases regret, and reduces satisfaction with the chosen option (e.g., Chernev 2003b; Iyengar and Lepper 2000).

The notion that choice has both a light and a dark side poses an interesting theoretical puzzle with important managerial and policy implications. Perspectives by Reutskaja and Hogarth (2009) and Grant and Schwartz (2011) integrate the costs and benefits of choice by proposing that the net benefits of choice (satisfaction, motivation to buy, etc.) conform to an inverted U-shaped function. According to this theory, a moderate number of options that adequately meets choosers’ needs and goals is better than both too few and too many options. The present research builds on this theoretical foundation by investigating deprivation and overload in consumers’ everyday lives at an individual level.

A perusal of the literature might suggest that choice overload is more common than deprivation, as the former appears to have captured more attention from researchers in recent years. Considerable work has explored mechanisms and moderators of the effects of large choice sets, with recent work including very little theorizing about the mechanisms and moderators of the effects of small choice sets (see the systematic reviews by Chernev, Böckenholt, and Goodman [2015] and Misuraca et al. [2020]). Furthermore, popular general-audience books, policy recommendations, and even popular TV shows reference the effects of choice overload (Iyengar 2010; McLeod 2017; Schwartz 2016; Schwartz and Cheek 2017). Yet whether this
focus on choice overload reflects the reality of consumers’ lived experiences remains unexamined in the choice literature.

One of the goals of the present research is to investigate how consumers experience choice deprivation and choice overload across different cultural contexts (RQ1b). Because the meaning of choice differs across countries, and culture may moderate the effects of choice set size (e.g., Iyengar 2010; Markus and Schwartz 2010; Misuraca et al. 2020), we aimed to broadly explore whether experiences of choice overload and deprivation vary across countries in terms of frequency (RQ1b) and their influence on satisfaction (RQ2b, RQ3c). To do so, we moved beyond the Western context in which virtually all choice set size work has been conducted (Chernev, Böckenholt, and Goodman 2015) to sample participants from six countries where almost half of the world’s population lives. Whereas one country—the United States—has a very individualistic cultural context (a score of 91 on Hofstede’s measure), the other five countries—Brazil, Japan, Russia, India, and China—are characterized more by collectivism, with scores ranging from 20 to 48 on Hofstede’s measure (Hofstede 1980, 2001). This approach yields a much more diverse sample than in previous research, but it does use country as a proxy for culture. Cultures can differ within as well as between countries (Schaffer and Riordan 2003), however, and thus the present work is not the final word on the international study of choice deprivation and overload but, rather, the foundation for additional work in the future.

The international marketing literature suggests that overload may be more common in cultural contexts that place a higher value on individualism. Individualistic consumers in the United States expect larger choice sets than even their European counterparts (Rozin et al. 2006) and are often provided with more options (Iyengar and DeVoe 2003). Individualistic consumers also further increase the options at their disposal by seeking greater variety than consumers in more collectivistic cultural contexts (Hermann and Heitmann 2006; Kim and Drolet 2003). This greater variety seeking is driven by the fact that choice is viewed as more important in more individualistic contexts—as a fundamental means of pursuing a mature, good self (Markus and Schwartz 2010)—and because greater variety allows for greater expression of individual identity (Kim and Drolet 2003). This variety-seeking tendency may go too far, causing individualistic consumers to end up with choice sets so large they prove overwhelming, resulting in choice overload (Iyengar and Lepper 2000; Schwartz 2016). Thus, consumers in the U.S. cultural context often encounter abundance that they then increase through their own search for more alternatives, suggesting that individualism may be linked to a more frequent experience of choice overload relative to deprivation.

If people experience choice deprivation and choice overload with some frequency, these states may shape their consumption experiences in important ways, including satisfaction with the options available to them as a function of how much choice they would ideally like to have. A large body of work suggests that people readily compare reality with alternative worlds in which circumstances are better or worse. Indeed, counterfactual thinking is ubiquitous in everyday life (Summerville and Roese 2008), and such comparisons are useful for developing and pursuing consumer goals (Roese and Epstude 2017). One such comparison is that between the actual and the ideal—that is, reality versus what one imagines to be the best version of life—and people report lower subjective well-being to the extent that the actual diverges from the ideal (e.g., Higgins, Klein, and Strauman 1985; Landon 1974). Consumers have ideal choice set sizes (e.g., Cheek and Ward 2019; Reed, Mikels, and Simon 2008) and can therefore compare their actual and ideal amounts of choice. The present research examines consumers’ reported satisfaction with their choice options in everyday life when they report having fewer versus more options than they would want (RQ2a). If the pattern of previous work on actual–ideal discrepancies emerges, participants will report less satisfaction with choices when they do not have their ideal number of options (i.e., when experiencing deprivation or overload) compared with when their actual and ideal number of options align.

Examining ideal–actual discrepancies further provides an opportunity to test whether deprivation and overload are equally impactful, or whether one more negatively relates to choice satisfaction than the other (RQ3a). Existing theoretical accounts often assume, implicitly or explicitly, that choice deprivation and overload are similarly impactful. It could be, however, that choice overload has a stronger effect because it greatly taxes consumers’ cognitive resources, or it may be that choice deprivation is worse because people fail to meet their basic needs. In an exploratory forecasting study reported in the Web Appendix, laypeople from different cultural contexts—the United States and China—predicted that the experience of deprivation would have a worse impact on satisfaction than the experience of overload (see Web Appendices A–C and supplemental material on the Open Science Framework: https://osf.io/gfwzs/).

Consumers may also react to these experiences differently in different cultural contexts, though that may be more true for overload than for deprivation (RQ2b and RQ3c). In fact, it may be expected that choice deprivation is consistently negatively related to choice satisfaction in both individualistic and collectivistic cultures, because consumers who do not have as many options as they want may fundamentally lack what they require to fulfill their needs (whether utilitarian, hedonic, or expressive). Research reveals, for example, that consumers from a wide variety of cultural contexts (e.g., the United States, South Korea, Russia, Turkey, Belgium, China, Peru) need a sense of autonomy and to feel that they have some freedom to choose (Chen et al. 2015; Chirkov et al. 2003). Cultural context may shape the specific goals of choice, but the harmful effect of lacking the options consumers need to satisfy those goals may be universal, or least relatively consistent, across the different cultural contexts in the present study.

In contrast, the effects of choice overload for satisfaction with available choices may be more varied across different cultural contexts. Specifically, research in the international
marketing literature converges to suggest that overload may be more harmful for consumers in more individualistic settings. In highly individualistic cultural contexts such as the United States, choice is about the individual self—consumers’ focus is typically on their personal preferences and self-expression (Bellah et al. 1985; Kim and Markus 1999; Markus and Schwartz 2010; Nam and Kannan 2020). This focus causes excess choice to be a burden: consumers take on the task of identifying the right choice individually, with less help from others (Goodrich and De Mooij 2013). The self-expressive nature of individualistic choice also raises the stakes of even seemingly inconsequential consumer decisions—trivial choices become statements about personal identity, and consumers have only themselves to blame if choice goes wrong (Cheek, Schwartz, and Shafir 2022; Schwartz and Cheek 2017). These unsatisfying outcomes may then be magnified because they violate the high expectations of consumers in individualistic societies, who may both expect and strive to be able to make the best choice, rather than having to settle for “good enough,” when choosing from large assortments (Cheek and Schwartz 2016; Markus and Schwartz 2010; Schwartz 2016).

For consumers in more collectivistic cultural contexts, choice is less about satisfying personal preferences and more about choosing with reference to close others and important groups (Iyengar 2010; Iyengar and Lepper 1999; Kim and Markus 1999; Markus and Schwartz 2010). Indeed, for more collectivistic consumers, individual preferences may not always be considered during choice (Savani, Markus, and Conner 2008), and some decisions may be so constrained by group norms that they do not feel much like “choice” at all (Kouchaki, Smith, and Savani 2018). Compared with individualistic consumers, collectivistic consumers also make choices in conjunction with others more often and make more frequent other-focused choices (Evanschitzky et al. 2014; Goodrich and De Mooij 2013; Nam and Kannan 2020), and consumers who make other-focused choices are less susceptible to the negative effects of larger choice sets (Polman 2012). More broadly, choice satisfaction in collectivistic cultural contexts may be less about the satisfaction of personal preferences and more about interdependent goals and relational experiences—including the service provided by those offering the options (Donthu and Yoo 1998; Ozdemir and Hewett 2010)—suggesting that if the effects of choice overload vary across cultures, they are likely to be felt more strongly in the more individualistic cultural context of the United States than in more collectivistic culture contexts.

Finally, existing theoretical accounts of the effects of choice set size (Grant and Schwartz 2011; Reutskaja and Hogarth 2009; Shah and Woldford 2007) also often assume that deprivation and overload are best understood not simply as categorical states but as continuously varying, and the laypeople in the forecasting study made the same prediction (see Web Appendix A). The ideal–actual discrepancy approach in the present study provides continuous measures that afford testing whether, across different countries, the effects of deprivation and overload are best understood as categorical states or as continuously varying based on the distance between the actual and ideal amount of choice consumers encounter (RQ3b–c).

**Method**

**Participants**

Participants were 7,436 individuals from six countries: the United States (1,007, 52% female), China (1,003, 49% female), Japan (1,200, 51% female), Brazil (1,099, 54% female), Russia (2,176, 55% female), and India (1,041, 49% female) (for additional demographic information, see Web Appendix D). The sample size was defined as the largest sample we could obtain with the funding available (US $110,000).

Because of the importance of survey administration consistency for measurement invariance (Schaffer and Riordan 2003), a single company (GfK Marketing Research Company) collected all data, thereby reducing potential variance across the six countries from which participants were recruited. GfK has a well-established track record and ensured that measurement variance was minimized during the survey administration process by using survey back-translations, similar methods and timing for conducting surveys, and equivalent methods of recruitment of participants, all of whom had similar experience with measurement instruments. Moreover, interviewers in all countries were equivalently trained with clear instructions and examples to ensure similar rapport across contexts (Schaffer and Riordan 2003). We maintained sole control of developing the survey instrument itself and closely supervised GfK, which remained blind to the research questions and did not analyze the data prior to delivering them to us.

We directed GfK to recruit the most representative sample possible from each country (given limitations of budget and conducting data collection over the phone or in person) and tasked them with recruiting participants representing different age and gender groups, as well as education and income levels, from each country. Although the samples collected are not strictly “representative” on each possible demographic characteristic, they were the most diverse that the research company could obtain within budget constraints and are substantially broader than those used in previous research on choice set size (see Chernev, Böckenholt, and Goodman 2015).

**Procedure**

We took several critical steps to ensure measurement invariance and to decrease possible common method bias at the procedural level. First, we developed the survey after 21 focus groups and 11 interviews previously conducted across the United States, Europe, and Asia (not reported here), which we used to ensure that respondents across countries would understand the survey topic and question phrasing and could appropriately respond to all questions. An additional pretest in the United States helped us ensure that the survey length was appropriate. Second, participants were recruited in person or over the phone, rather than
online, to allow data collection from diverse populations typical for each country across both urban and rural areas.

Third, all survey administrators were trained to have a similar rapport with participants across countries, ensured that participants in all countries knew they could ask clarification questions (even though questions were concise and simple), and reduced evaluation apprehension by encouraging participants to answer as honestly as possible and by assuring them that there were no right or wrong answers. Each of these survey administration features has been shown to decrease common method bias (Jordan and Troth 2020; Podsakoff et al. 2003; Podsakoff, MacKenzie, and Podsakoff 2012; Schaffer and Riordan 2003). Fourth, the use of concrete rather than abstract questions should further reduce common method bias (Doty and Glick 1998). Fifth, the response scale varied across questions (i.e., some were free response, some were answered on Likert-type scales; see Web Appendix E), further minimizing common method bias (Johnson, Rosen, and Djurdjevic 2011; Jordan and Troth 2020; Podsakoff, MacKenzie, and Podsakoff 2012). Sixth, simultaneous data collection across all countries should have increased administrative invariance (Schaffer and Riordan 2003), and, seventh, anonymous participation should also have reduced common method bias (Podsakoff et al. 2003).

Finally, because the variables in this study are unidimensional and no latent factors with multidimensional scales are present, we used Harman’s (1967) single-factor test on all measures across countries and on all measures within each separate country to assess the possibility of common method bias. In this test, if a single unrotated factor explains the majority of the variance (i.e., >50%), it is concluded that common method bias is a likely problem (Harman 1967; Podsakoff and Organ 1986). As reported in Web Appendix F, there was no evidence that common method bias was a likely problem in the present study.

All participants were remunerated in accordance with the rates of the company that collected the data. Because of the costly nature of the survey, additional questions to test other research questions along with the measures reported here were included. For exact phrasing of the questions that are of interest to the current research, see Web Appendix E and the materials uploaded to OSF (https://osf.io/gfwzs/).

First, two questions assessed participants’ perception of the “actual” number of options available to them and the “ideal” number they would want in each of the six choice domains (referred to as “appropriate products” in the questions) described next (2 questions × 6 domains = 12 questions in total): (1) “In total, how many of (appropriate products) are available in your area?” and (2) “In an ‘ideal world,’ how many of the (appropriate products) would you want to be available in your area?” The answers were to be given for each of the following domains (“appropriate products”): soft drinks, automobiles, homes (apartments, houses, and condos), primary care physicians who have offices, educational institutions (equivalent of U.S. colleges, universities, and trade schools), and job opportunities. We aimed to select products and services that were specific enough so that respondents could estimate the number of options (e.g., soft drinks or automobiles instead of “consumer goods”) but also diverse enough to assess choice in different spheres of life (e.g., soft drinks would be a relatively “unimportant” choice, whereas jobs would be considered an “important” choice for many people). Participants could give any number in the range of 0–999,999 as a response to each of these questions.

Second, we measured participants’ satisfaction with the number of choices they currently have for different products and services in those six domains: “How satisfied are you with having the total number of (appropriate products) available in your area?” (six questions in total, one question for each of six different products). Responses were given on a ten-point scale (1 = “dissatisfied,” and 10 = “satisfied”).

The data delivered to the researchers by the company included missing data points coded in different ways. For example, for the variable “employment,” there could be only three possible levels: “full time,” “part time,” and “none.” However, the data set included data points that were coded as “4” or “9,” representing missing data for the employment variable. For analyses, the missing data were coded in the same way (as a “.” in Stata). No subject or data point was removed from analyses, and the final number of observations per regression is always reported. For data analysis, first, across different countries and domains, we created variables assessing the feelings of “having the ideal amount of choice,” “choice deprivation,” and “choice overload.” To do so, we calculated the following proportions: proportion of (1) people whose “ideal” choice matches the amount of choice they have (ideal = have; or those who perceive they have “the ideal amount of choice”), (2) people whose ideal amount of choice is greater than what they have (ideal > have; those who feel “choice deprivation” and want more choice than they currently have), (3) people whose ideal amount of choice is less than what they have (ideal < have; those who feel “choice overload” and want less choice than they currently have). These proportions reflect people’s perceptions about choice around the globe across different domains and provide the first evidence of how many people report perceiving “ideal amounts of choice,” “choice deprivation,” or “choice overload” in everyday life (RQ1a-b).

Second, we explored the influence of perceptions of choice on people’s satisfaction with choice (RQ2a-b). That is, the aim was to explore whether participants’ satisfaction with choices was sensitive to deviations from ideal amounts of choice. The next aim was to understand who is most satisfied with the choices available to them in their natural environment. We hypothesized that those who have “the ideal number of options” feel the most satisfied with the amount of choice available to them. In addition, the aim was to understand who suffers more from deviation from the ideal number of choices—people who experience choice overload or people who experience choice deprivation (RQ3a-b).

To answer these questions, we used regression analysis (both ordinary least squares [OLS] and hierarchical linear modeling [HLM]). There are various ways to conduct regression analyses. First, because the aim of RQ1a-b is to assess the frequency of choice overload and deprivation, it was important to examine
those data at country and domain levels. Thus, we present net results of individual OLS regressions at the country and domain level that offer the most elegant modeling and simplest interpretation of coefficients to readers. Next, we present HLM regressions with various model specifications. Finally, we present the results of robustness checks using additional model specifications.

First, consistent with theorizing and with research questions, we created an independent variable representing the difference between the ideal amount of choice people want and the actual amount of choice people perceive having, by country and domain:

$$\text{(Ideal} - \text{Have}) = \text{HowManyIdeal} - \text{HowManyActual}, \quad (1)$$

where HowManyIdeal is the number of choices in a certain domain that one wants to have and HowManyActual is the number of choices in a certain domain one perceives having.

Next, we ran the following regressions for each country and domain (36 regressions in total):

$$\text{Satisfaction with choice} = \alpha + \beta_1 |(\text{Ideal} - \text{Have})| + \beta_2 (\text{Have} < \text{Ideal})\text{dummy} + \beta_3 (\text{Have} > \text{Ideal})\text{dummy}, \quad (2)$$

where $(\text{Ideal} - \text{Have})$ is defined as in Equation 1, and $|(|\text{Ideal} - \text{Have}|)$ is an absolute number. $(\text{Have} < \text{Ideal})\text{dummy} = 1$ when HowManyActual $< \text{HowManyIdeal}$, and $=0$ otherwise, and $(\text{Have} > \text{Ideal})\text{dummy} = 1$ when HowManyActual $> \text{HowManyIdeal}$, and $=0$ otherwise.

In the regressions, coefficient $\beta_1$ indicates whether the distance of current choice from ideal matters for satisfaction. That is, if a person has only 1 item more/less than desired, would one feel the same as when they have 100 more/less than desired? Note that in these regression models, the degree of choice overload varies similarly to that of choice deprivation.

This is based on previously conducted analysis (reported in Web Appendix G), in which, for each country and domain, we regressed satisfaction with the number of choices on the difference between ideal and actual choice, choice overload and choice deprivation dummies, and the interaction term $[(\text{Ideal} - \text{Have}) \times (\text{Have} > \text{Ideal})\text{dummy}]$. The interaction term was significant only in 2 cases out of 36 (i.e., was not significant in 34 regressions), suggesting that there is little evidence that the degree of choice overload and deprivation varies differently (the probability of observing 2 or fewer cases of difference is $p < .001$ [binomial test]). In addition, the regression models with interaction terms did not improve much on goodness of fit ($R^2$ and F-statistics) relative to the reported models. Therefore, for simplicity of the model itself and ease of interpretation of the coefficients for the reader, we report the regression models without the interaction terms in the main text (i.e., where the degree of choice overload and deprivation is assumed to vary similarly) but report the regressions with interaction terms in Web Appendix G.

Coefficients $\beta_2$ and $\beta_3$ represent the influence of “choice deprivation” and “choice overload,” respectively. If satisfaction with choice is not affected by too little or too much choice, then whether one feels she has more or less choice than ideal should not matter, and coefficients $\beta_2$ and $\beta_3$ in Equation 2 should not be significant. However, if satisfaction with choice is relative to one’s perceived “ideal” choice offering, then satisfaction with choice should be influenced by “choice deprivation” or “choice overload,” and $\beta_2$ and $\beta_3$ should be significant. Which of the two—“choice deprivation” or “choice overload”—has a stronger effect on satisfaction (RQ3a,b) will by defined by which of the two coefficients—$\beta_2$ or $\beta_3$—is larger in absolute terms.

We performed several robustness checks of the model. In the regressions reported here, no controls for demographic characteristics were included. Thus, we ran all the regressions controlling for various demographic characteristics of the respondents. There is little evidence that any demographic characteristic systematically affected regression analyses across all countries and domains; therefore, to simplify reporting and interpreting the results, the main text includes only regressions without any demographic controls. However, regressions with demographics controls are reported in Web Appendix H. Overall, the regressions with demographic controls offer the same main conclusions as the regressions without demographic controls. In addition to the current analyses, we performed robustness analyses with the independent variable “ideal — Have” defined as a normalized difference rather than absolute difference, which offers a narrower distribution of the values for this variable (for details, see Web Appendix I). Moreover, we also ran HLMs at a “global” rather than domain- and country-specific level, merging countries and domains into a single model. We report and discuss the results of the HLMs after the results of country- and domain-level regressions. The main results replicate with all other model specifications.

**Results**

**Patterns of Choice Deprivation, Choice Overload, and Ideal Amounts of Choice**

Figure 1 shows the percentage of reports of choice deprivation, choice overload, and ideal number of options aggregated across all choice domains and countries studied. In the aggregate, participants reported experiencing choice deprivation—having fewer than the ideal number of options available—in half (51%) of all instances. A little over one-third (35%) of the time, participants reported having the ideal number of options. Somewhat surprisingly, given the focus on choice overload in modern consumer behavior research, participants reported experiencing choice overload—having more than the ideal number of options available—only 14% of the time. Thus, in answer to RQ1a, the data suggest that, in the aggregate, choice deprivation may be more common than choice overload.
Disaggregating the results, Figure 2 shows reports of choice deprivation, choice overload, and the ideal number of options for each country across all domains and separately in each domain (RQ1a–b). When aggregated across domains, choice deprivation was the most commonly reported experience in all of the more collectivistic countries. Indeed, about half of the time, participants in China (48%), Japan (48%), and Russia (53%) reported experiencing choice deprivation, whereas choice deprivation was reported on the majority of occasions in India (60%) and Brazil (65%). In these five countries, the second most commonly reported experience was having the ideal amount of options, with percentages of having the ideal varying substantially from a low of 22% in Brazil to a high of 41% in Russia. Choice overload was the least common experience in these five countries; reports varied from 5% in India to 22% in China.

Only in the more individualistic country in our sample—the United States—was choice deprivation not the most commonly reported experience. Instead, having the ideal number of options available was most commonly reported (40%), whereas choice deprivation and choice overload were reported at relatively equal rates, with deprivation being slightly more common than overload (32% vs. 28%). Thus, although more common than in other countries, choice overload was still reported on only a minority of occasions in the United States.

Even within the same country, patterns varied substantially across domain. Choice deprivation was common for the consequential domains of physicians, education, and, most frequently, jobs. Having the ideal amount of choice was more common in the commercial domains of homes, autos, and soft drinks. Only in these latter three domains was choice overload reported by a substantial minority of participants, and only by participants in the United States, China, Brazil, and Japan.

In summary, most people in most places experience choice deprivation in most domains (RQ1a). Yet, experiences with choice varied substantially within country (RQ1b) and domain, and in particular, when it comes to soft drinks, autos, and homes, substantial percentages of people in most countries have the ideal amount of choice and, somewhat less frequently, more choice than desired.

We explored the patterns of choice deprivation, choice overload, and ideal amounts of choice for subsamples of participants with different demographic characteristics (e.g., women vs. men; employed full-time vs. employed part-time vs. unemployed; high- vs. medium- vs. low-income participants). There was little evidence that the patterns of choice perceptions reported in Figures 1 and 2 differ systematically by demographics (for details, see Web Appendix J).

**Implications for Satisfaction with the Amount of Choice**

Despite the substantial variation in experiences of choice deprivation and overload across domains and countries, the impact of deprivation and—with two notable exceptions—overload on satisfaction with choice was relatively universal. Indeed, shedding light on RQ2a, the regression analyses showed that, across all six domains, people tended to feel most satisfied with choice offerings when the amount of choice they perceived having was equal to their “ideal” amount of choice (see Table 1).

In all domains in all countries studied, experiencing choice deprivation ($\beta_2$) predicted reduced satisfaction with choice (36 out of 36 cases; $p < .001$ [binomial test]). Accordingly, it is clear that having too little choice undermines choice satisfaction. In most cases, choice overload ($\beta_3$) also negatively predicted choice satisfaction: in 26 of 36 regressions (72%), $\beta_3$ was significant, which is greater than would be expected by chance ($p = .011$ [binomial test]).

Importantly, there appeared to be systematic variation across countries in terms of when and how having more than the ideal number of options related to choice satisfaction (RQ2b). First, although in most countries studied, choice overload predicted reduced choice satisfaction, for participants in Japan, choice overload never negatively predicted choice satisfaction. In fact, having more than the ideal number of options ($\beta_3$) positively predicted choice satisfaction in multiple cases for Japanese participants. Second, for the three less commercial domains (physicians, education, and jobs), having more options than ideal was unrelated to choice satisfaction for participants in China, suggesting, perhaps, that choice overload is mainly a problem for Chinese participants in more commercial domains. In the other four countries, however, choice
overload essentially always predicted reduced satisfaction with choice, with the exception of one domain in India (jobs). Thus, while the effect of choice deprivation is more universal, the effects of choice overload vary across countries, including among the different collectivistic countries in the sample.

These findings suggest that although both choice deprivation and choice overload can undermine choice satisfaction (RQ2a), deprivation is perhaps more broadly consequential than overload (RQ3a). The strength of the effect of overload versus deprivation also varied across countries (RQ3c), particularly in Japan and China, where choice overload was less reliably related to choice satisfaction. Overall, in 33 out of 36 cases, $\beta_2$ had a stronger effect on satisfaction than $\beta_3$ (i.e., $\beta_2$ was significant and $\beta_3$ was not, or $\beta_2$ was greater in absolute terms than $\beta_3$; $p < .0001$ [binomial test]). Even if we do a more conservative analysis and consider only instances in which both choice deprivation and choice overload significantly predicted choice satisfaction, the effect of deprivation ($\beta_2$) was typically greater than that of choice overload ($\beta_3$). Indeed, in the 30 cases in which the effects of both deprivation ($\beta_2$) and overload ($\beta_3$) were significant, the absolute value of the effect of deprivation $|\beta_2|$ was greater than that of overload $|\beta_3|$ in 27 cases (90% of the time; $p < .001$ [binomial test]).

Finally, there were few reliable effects of the absolute difference between ideal and perceived choice (i.e., the degree of deprivation or overload) on choice satisfaction (RQ3b). Across all domains in all countries, $\beta_1$ was not significant in 25 out of 36 cases ($p = .029$, [binomial test]) that is suggestive of a lack of evidence of meaningful effects of degree of overload or deprivation on satisfaction. Furthermore, in most of

Figure 2. Perceptions of choice across countries and domains.
Notes: Sample size is indicated below percentages.
The 11 cases in which $\beta_1$ was significant, the effect was arguably small (i.e., <.01). Indeed, in 33 cases, $\beta_1$ was either nonsignificant or significant but small ($p < .001$, binomial test), suggesting that the distance between participants’ ideal amount of choice and current perceived amount of choice did not tend to predict choice satisfaction. There was no evidence that the absolute difference between ideal and perceived choice was related to choice satisfaction for all of the domains in Brazil and China, and for all but one domain in Japan and all but two in the United States and India. For participants in Russia, the absolute difference was significant in all six domains, but in all but one, $\beta_1$ was trivially small (i.e., $|\beta_1| < .01$). When $\beta_1$
was significant and nonzero, it was always negative, indicating that the further the ideal amount of choice lies from the actual amount of choice, the more dissatisfied people feel, at least in India and Russia. In summary, the degree of deprivation or overload sometimes affects choice satisfaction, but it does so less consistently and less strongly than the experiences of deprivation or overload themselves (RQ2b–c).

As a robustness check, we report different variations of similar OLS models in the Web Appendix, including regressions with interaction terms, with demographics controls, and with normalized difference of the (Ideal – Have) independent variable. Overall, the main findings are replicated with different specifications of regression models (see Web Appendices G–I).

Robustness Checks and Country-Level Differences

So far, we have presented OLS individual-country and domain regressions to examine the effects of choice overload and deprivation. This approach, however, does not allow for assessment of whether the effects of choice perceptions are robust at a global level. The previous analyses also do not allow for tests of the differences in choice perceptions among the countries directly or assessing whether country is a moderator of these choice perceptions. There are two possible ways to tackle these issues. First, it is possible to conduct a hierarchical linear regression where all countries and domains are part of the single “global” regression and are presented as dummy variables. Second, it is possible to conduct regressions at domain level with countries as dummies but within each domain. We present the results of both of these types of analysis next. Because, in the current data, variables at one level (e.g., individual responses about different domains) can influence the variables at another level of analysis (e.g., countries), the most appropriate way to analyze those variables is through HLM regressions (Hofmann, Griffin, and Gavin 2000).

“Global” HLM. This “global” HLM merges all the data across countries and domains into a single regression. In such a regression, the domain responses are nested within individuals, and individuals are nested within countries. Countries and domains are included as dummies, and in some models, variables where countries interact with perception of choice overload and deprivation are also added. Table 2 presents the results of the “global” HLM with six model specifications including different dummies and controls.

The analysis suggests that the previous results are replicated with HLMs on a global level. First, HLMs show that deviations from the ideal number of choices negatively affect satisfaction with the amount of choice (RQ2a). That is, both participants who feel that they have more than the ideal number of choices (choice overload) and those who feel that they have fewer than the ideal number of choices (choice deprivation) feel less satisfied with their amount of choice than those who have exactly what they wish (Actual choice = Ideal). As in previous analyses, HLMs suggest that choice deprivation has a consistently stronger negative effect on satisfaction than does choice overload (RQ3a). In addition, HLMs suggest there is little evidence that the absolute difference from ideal choice matters much (RQ3c). This difference was either not significant or significant, but its value was small. These results suggest that previously reported results replicate and are robust at a global level.

In addition, the global HLMs reveal that country can be considered a significant moderator of the perceptions of choice overload and deprivation (RQ2b and RQ3b). Both the dummies for different countries and the interactions of country with choice overload or deprivation variables are mostly significant across different HLM specifications. The direction of those differences were already previously discussed in the text and are not repeated here. The global HLM reported herein treats the United States as a baseline, and thus coefficients should be interpreted as differences compared with the United States. HLMs with different countries as the baseline, which allow for pairwise comparisons of different countries, are presented in Web Appendix K.

Global HLMs also suggest that there are significant differences in choice perceptions by choice domain, with participants being least satisfied with the number of job choices and home choices. Finally, though most of the demographic controls remain nonsignificant, as in the previously reported results, there are two demographic variables that become consistently significant at a global level. First, participants living in urban areas show consistently higher satisfaction with choice than those living in rural areas. One can speculate that this is because urban areas usually offer both a higher number and a higher variety of choices across domains, from basic goods to more important choices (e.g., educational institutions). Thus, it is possible that people living in urban areas can better match their own preferences with available choices than can those living in rural areas. Second, medium- and lower-income people usually report lower satisfaction with the amount of choice available compared with those with relatively higher incomes. These differences might be explained by the fact that lower- and medium-income groups have access to fewer choices, have access to lower-quality choices, or can afford fewer options than higher-income people and thus feel at a disadvantage. Thus, the data show that these demographic variables might matter at a global level, but further research is needed to shed light on the underlying reasons for those differences.

In summary, the HLMs on a global level replicate previously reported results. Though this approach offers an elegant and simple model, it has at least three drawbacks. First, it is challenging to understand from the global HLM which countries or domains drive some of the significant differences (e.g., the effect of the “urban” variable might be driven mainly by Brazil, Russia, and Japan). Full interpretation requires country- and domain-level regressions as well. Second, the global HLM may not be optimal because this study has only six countries, but parameters summarizing country effects may not be reliable until there are over 25 countries (Bryan
Table 2. Global HLM (Baseline Country: United States; Baseline Domain, Where Applicable: Soft Drinks).

<table>
<thead>
<tr>
<th>Country</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
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<td>8.249***</td>
<td>9.082***</td>
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<td></td>
<td>b1 = −.000*</td>
<td>b1 = −.000*</td>
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<td>Brazil (β5)</td>
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<td>b5 = −.406**</td>
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<td>b5 = .655***</td>
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<td>b6 = -.213**</td>
<td>b6 = −.278**</td>
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<td>b7 = .524**</td>
<td>b7 = .145</td>
<td>b7 = .145</td>
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<td>b8 = −.579***</td>
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<td>Physicians (β10)</td>
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<td>Homes (β11)</td>
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<td><strong>Deprivation x Country</strong></td>
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<tr>
<td>Deprivation x Japan (β14)</td>
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<tr>
<td>Deprivation x Brazil (β15)</td>
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<td>Deprivation x Russia (β16)</td>
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<td>Deprivation x India (β17)</td>
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<td>Deprivation x China (β18)</td>
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<td><strong>Overload x Country</strong></td>
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<tr>
<td>Overload x Japan (β19)</td>
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<td>Overload x India (β22)</td>
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<td>Overload x China (β23)</td>
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<td>Overload x [Ideal – Have] (β24)</td>
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<td>Female (β25)</td>
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<td>Age 2: 25–34 years (β26)</td>
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<td>Age 3: 35–49 years (β27)</td>
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<td>Age 4: 50–64 years (β28)</td>
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<td>Age 5: 65+ years (β29)</td>
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<td>Relative income 2: Medium (β30)</td>
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<td>Relative income 3: Low (β31)</td>
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<td>Employment 2: Part-time (β32)</td>
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<td>Employment 3: None (β33)</td>
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<td>Education 2: Primary (β34)</td>
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<td>Education 4: Higher (β36)</td>
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<td>Education 5: University (β37)</td>
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<td>.689***</td>
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<td>.722***</td>
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</table>

*p < .05.
**p < .01.
***p < .001.

and Jenkins 2016). Third, the global HLM treats the questions about six domains as six versions of the same question, assuming that satisfaction with choice is a unitary concept that is domain-independent. People may apply some type of “choice metric” equivalently across different domains, but this assumption needs to be tested by future research. Treating questions in each domain as different questions and running HLMs for each domain separately—while still including countries and country interactions as dummy variables—avoids this assumption (though it leaves the aforementioned first and second issues unresolved).

**HLMs on domain levels.** Web Appendix L reports the HLMs at the domain level, which reveal the same pattern as previously
reported results. For all the domains, both choice deprivation and choice overload had a negative effect on satisfaction (RQ2a). The effect of deprivation was stronger than that of choice overload in most of the domains and across most regression specifications, confirming that deprivation is not only more frequently experienced than choice overload but also more consequential for choice satisfaction (RQ1a and RQ3a). Similar to previous results, the absolute difference of actual number of choices from the ideal did not affect satisfaction strongly: the coefficient of absolute deviation was either not significant or small in absolute terms (RQ3b). Domain-level HLMs also confirm that country can be considered a moderator of choice perceptions: country dummies and their interactions were significant for many regression specifications (RQ2b and RQ3c). Finally, the same regressions were replicated using OLS rather than log-likelihood estimation. The results obtained with HLM regressions at a domain level are similar to the results obtained with OLS regressions (see Web Appendix L). This suggests that the OLS regressions are relatively appropriate for model estimations. The similarity between OLS and HLM results also increases confidence in the robustness of the findings. Moreover, as yet another robustness check, all of the analyses were repeated with the normalized independent variables. Results of those regressions closely replicate the previous findings and are presented in Web Appendices M and N.

Discussion

A survey of over 7,400 participants from six countries representing nearly half of the world’s population explored experiences of choice deprivation and choice overload across six choice domains. The study revealed that deviations from participants’ ideal amount of choice affected participants’ satisfaction with the available choices. In addition, choice overload, at least in the domains and countries examined in this article, was a common problem only for people in the United States, and even there, mainly in commercial domains such as soft drinks or homes. In addition to being more common than choice overload, choice deprivation was also more problematic: the effect of choice deprivation on choice satisfaction was larger than that of choice overload, though both negatively predicted satisfaction.

Interestingly, these effects were not universal: in Japan and China, choice overload, unlike choice deprivation, was less reliably related to choice satisfaction, suggesting cross-country differences in the effect of having too many options. In addition, the degree of distance between participants’ ideal and actual number of options—that is, the extent of deprivation or overload—did not reliably predict choice satisfaction in most cases, emerging as a significant predictor only in India and Russia. Thus, at least in some contexts, experiencing more or less deprivation or overload may not be consequential above and beyond experiencing the categorical state of deprivation or overload. In addition, studies reported in Web Appendix A showed that participants from the United States and China accurately predicted that the effects of choice deprivation would be greater than those of choice overload but did not accurately predict the null effect of the distance between actual and ideal assortment size, instead predicting a continuous relationship.

Theoretical and Applied Implications

Perhaps the most salient contribution of the present research is the revelation that choice overload appears to describe only a relatively small portion of consumers’ choice experiences, at least in the countries we studied. In most countries and most domains, choice deprivation was a much more frequent problem. From a theoretical standpoint, this finding suggests that the dominance of choice overload relative to deprivation in the literature is perhaps somewhat misguided. Although theoretically and practically important, choice overload may emerge only in a restricted set of contexts. The much more common experience of choice deprivation needs greater theoretical attention in future research, as well as more applied investigations into its consequences and potential solutions.

Recent theoretical proposals have converged on an inverted U-shaped perspective, which posits that people are more satisfied when they have a moderate, ideal amount of choice than when they have too little or too much choice (Grant and Schwartz 2011; Reutskaja and Hogarth 2009). The present research develops this perspective in several ways. First, it makes the novel contribution of demonstrating that “overload,” “deprivation,” or “the right amount of choice” can only be fully understood by taking individual differences into account. What one consumer considers an “optimal choice” might be too much or too little for another. In line with this individual-differences framework, we did not attempt to predict satisfaction across participants as a quadratic function of number of choices at a generalized level. Rather, to account for individual differences in choice perceptions, the analyses included the difference between the two terms necessary to understand individual differences—the “ideal number of choices” one wants to have in a certain domain and the “actual number of choices” one perceives having in that domain. This approach can assess the relationship between the number of options and choice satisfaction at an individual—and thus more precise—level of choice perception.

Second, the inverted U-shaped function is often assumed, implicitly or explicitly, to be relatively symmetrical—that is, it is assumed that the effects of deprivation and overload are relatively equivalent. Yet, the present study suggests that choice deprivation has a greater negative effect on choice satisfaction than does choice overload. Thus, the effects of too little versus too much choice may not be symmetrical but rather steeper on the deprivation side. This asymmetry suggests that, if deprivation and overload are both a problem in a particular context, marketers and policy makers should be more concerned about the former than the latter. Marketers should focus more on providing enough options for consumers than on preventing oversized assortments, and policy makers should focus more on alleviating the deprivation facing those who live in scarcity than on addressing the overload facing those living in abundance.
Third, the inverted U-shaped function is typically assumed to be continuous, but the distance between ideal and actual assortment size rarely mattered for choice satisfaction. Accordingly, in at least some situations, the inverted U-shape may be better understood as describing three categorical states—deprivation, satisfaction, and overload. This possibility suggests that both marketers and policy makers may need to more directly assess how they can meet individual consumers’ ideal needs. For example, websites should be tailored to display only the number of options a customer selects to see, with the optional ability to expand or shrink the assortment as desired. Interestingly, however, it also suggests that, in some cases, the addition or removal of a few options may not have meaningful consequences if people are already in states of deprivation or overload. For example, if the number of health care plans is already too high, but policy makers want to slightly increase the number of options in order to add plans that better meet some consumers’ needs, doing so may not have many negative effects. Similarly, companies may not suffer by slightly expanding product lines to better satisfy a wider range of consumer preferences.

Fourth, the findings highlight cross-country, and potentially cross-cultural, differences in perceptions of overload and deprivation, as well as the need to include non-Western samples in future research. In Japan, and to a lesser extent in China, choice overload did not negatively affect choice satisfaction. In fact, in multiple domains in Japan, the relationship between overload and satisfaction was positive—and may therefore not be “overload” at all. In Japan and China, then, there may not be an inverted U-shaped relationship between choice and satisfaction; rather, satisfaction may continue to increase or eventually level off as the number of options increases.

Importantly, although we framed potential cross-cultural differences in relation to variation across the dimension of individualism–collectivism, there was substantial variation among the more collectivistic countries: in India, Russia, and Brazil, choice overload did consistently undermine satisfaction, unlike in Japan and China. In addition, the relationship between the number of options and satisfaction may be more continuous in India and Russia, where the distance between ideal and actual assortment size mattered more for choice satisfaction than in the United States, China, Japan, or Brazil. These findings reveal substantial nuance in the cross-cultural variation in the effects of choice overload and call for future research to investigate such differences beyond the broad dimension of individualism–collectivism.

**Limitations and Future Directions**

Although broader in its sampling than most previous research on choice experiences, and spanning countries with about 50% of the global population, this research was conducted in a limited number of countries and across a limited number of domains. We also used country as a level of analysis, which is not necessarily equivalent to comparisons of specific cultural contexts and might not capture (sub)cultural factors that go beyond country borders (Schaffer and Riordan 2003). Thus, this work provides initial evidence that perceptions of choice overload and deprivation are not universal, but more research is needed on the specific mechanisms underlying cross-cultural differences. For example, differences in the quality of choices available or in historical conditions across the countries (e.g., very limited choice in Russia until fairly recently vs. abundant choice in the United States for a longer time) might also affect perceptions of the number of choices. Individual histories may similarly matter for choice perceptions—do consumers who grew up in a state of deprivation, for instance, perceive their current options as more satisfying than consumers who grew up in a state of abundance? Future work could also study consumers who recently moved to a given country compared with those who have lived there a long time to disentangle the immediate contextual effects of a particular country or culture from the effects of having adapted to the number or quality of options available in that context.

In the present research, we tried to avoid measurement variance and common method bias, mainly through the careful preparation and design of the questionnaire and carefully planned, equivalent administration of an in-person survey. However, it is challenging to statistically assess measurement invariance after data collection because of the structure of the data, an issue that similarly limits the options for post-data collection assessment of common method bias. Though the use of Harman’s (1967) single-factor test to assess common method bias in the present data is justifiable with current data structure (i.e., there are no latent factors or factors using multidimensional scales), Harman’s test has also been shown to have several drawbacks (Podsakoff et al. 2003). In this study, both the dependent and independent variables were measured using unidimensional scales. Thus, more advanced and modern tools to assess common method bias (Podsakoff et al. 2003; Podsakoff, MacKenzie, and Podsakoff 2012) in cross-cultural research are not applicable to the specifics of the current data. Replicating the present findings with data including variables measured with multidimensional scales could help better address measurement invariance and common method bias.

The current analyses relied on difference scores, an approach that is justified because the main goal was to assess the frequency and effects of deviations from one’s ideal choice. However, future research should address the potential limitations of difference scores (Edwards 1994, 2001) with different designs and models (e.g., polynomial regression analysis; see Lee and Antonakis 2014; Shanock et al. 2010). In addition, our proposed model assumed that the actual and ideal number of options impacted satisfaction with the same weight, which future research should test more precisely. Web Appendices O and P report initial attempts to test whether the ideal and actual number of options had similar effects on satisfaction (per domain and country). Overall, the data suggest that for the United States, Japan, Brazil, and China, the weights with which linear variables of actual and ideal choices impact satisfaction are similar. However, there is some preliminary evidence that the weights of ideal and actual number of choices could differ for India and Russia (though the coefficients and difference between these coefficients are relatively small).
Thus, future models should perhaps incorporate such weights, though they should be assessed in strictly representative samples before formally incorporating them into models.

In conclusion, the present research provides insight into the importance of the size of the choice sets consumers encounter in their everyday lives. Choice deprivation and choice overload both undermine satisfaction with choices, though choice deprivation may be more frequent and more consequential. Future research should continue to study the relationship between satisfaction with everyday choices and well-being, and this research should be conducted in a global context that takes into account differences across nations and cultures, as well as different choice domains. Most broadly, marketers and policy makers should consider the larger implications of the assortments they provide—the well-being of their customers and constituents may depend on it.

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