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Maintaining the order: How social crowding promotes minimalistic consumption practice

Siyu Gong^a, Danni Suo^{b,*}, Peter Peverelli^c

^a School of Business, Nanjing Normal University, Nanjing 210023, China

^b School of Business and Management, Jilin University, Changchun 130012, China

^c Department of Management and Organization, Vrije Universiteit Amsterdam, 1105 1081 HV, the Netherlands

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ABSTRACT

Although minimalism has come to the forefront of contemporary consumer culture, neither its antecedents nor the psychological process that drives minimalistic consumption have been systematically established in the literature. This study documents a novel effect of social crowding, one common environmental cue, on minimalistic consumption practice. Across five experimental studies, we explore how exposure to social crowding motivates consumers to engage in minimalistic consumption as a means of coping with their experience of chaos and maintaining their psychological need for order. Furthermore, we demonstrate that the uncovered effects do not occur when a crowded environment is composed of familiar in-group members or when consumers have an interdependent self-construal. The findings therefore not only provide novel insights that extend the literature but also have certain implications for corporations seeking to promote minimalistic consumption practice.

1. Introduction

The dominance of consumerism and materialistic values has taken a severe environmental toll, but material consumption does not proportionately increase subjective well-being and happiness (Kang et al., 2021; Seegebarth et al., 2016). As one alternative to a materialistic orientation, a burgeoning consumer culture, namely, minimalistic consumption, has been gaining currency on a global scale. The concept of minimalism initially emerged from visual art in the 1960s and refers to a style of sparse, uncluttered and simplistic aesthetics (Minimalism.co, 2021). Today, the philosophy of minimalism has extended its influence from the modern arts to consumer culture, embracing a mindset that influences the entire consumption process (Pracejus et al., 2006). Notably, the phenomenon of minimalistic consumption involves limiting possessions, reducing excessive consumption, mindfully curating consumption, and improving personal life quality by not indulging in materialism (Lee & Ahn, 2016; McGouran & Prothero, 2016). It is necessary to distinguish minimalistic consumption from other conceptually related constructs such as frugality and sustainable consumption. Although the construct of frugality and minimalism overlap in terms of owning limited possessions, people mainly adopt frugality to achieve the goal of saving money, whereas minimalistic

consumption practice is not shaped by financial constraints (Nepomuceno & Laroche, 2015). Meanwhile, expressing environmental concern through consuming less is one important reason for sustainable consumption, but it is not a necessary aspect of minimalistic consumption (Kropfeld et al., 2018).

Since the COVID-19 pandemic has exerted economic shocks and stimulated financial crises, large groups of people have been shifting their focus to what truly matters rather than what they want in terms of their daily consumption, contributing to the increasing research interest in minimalistic consumption (Morgan et al., 2021). Minimalistic consumption not only contributes to achieving sustainability goals but also helps people achieve a happier and more fulfilled life (Lloyd & Pennington, 2020). Previous research has suggested that consumer minimalism is an intrinsic value orientation that dictates an individual's consumption and non-consumption choices (Wilson & Bellezza, 2022). However, little is known about its antecedents, especially the external situational factors that motivate consumers to adopt minimalistic consumption. Meanwhile, there is an urgent need to construct a comprehensive framework for exploring the psychological processes that drive minimalistic consumption. Given the important role of subtle environmental cues in consumption decisions (Huang et al., 2018), this study quantitatively investigates the effect of social crowding, a ubiquitous

* Corresponding author.

E-mail addresses: gongsy1993@163.com (S. Gong), 416335716@qq.com (D. Suo), p.j.peverelli@vu.nl (P. Peverelli).

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ambient factor in a shopping environment, on minimalistic consumption.

This research contributes to the current literature in the following ways: First, extending research on social crowding and compensatory consumer behavior-making, we demonstrate that consumers engage in minimalistic consumption as a compensatory strategy to cope with their experience of chaos and randomness when they shop in a crowded environment. Hence, our study provides a novel theoretical approach to understanding minimalistic consumption. Second, this study shows that the impact of social crowding on minimalistic consumption is driven by the psychological need for order, providing an alternative method to investigate the role of atmospheric shopping elements in consumer decision-making. Third, we identify two important moderators, group membership and consumer self-construal, which mitigate the effects of social crowding on the need for order as well as on minimalistic consumption. This finding enriches our understanding of the differential effects of social crowding on minimalistic consumption practice.

This study is structured as follows: First, we present the related literature on minimalistic consumption practice and social crowding, followed by our relevant hypotheses. Then, we report the methodology and the results of three experiments. Finally, we conclude by discussing the theoretical contributions and managerial implications of this study.

2. Conceptual framework and hypotheses

2.1. Minimalistic consumption

Minimalism is a paradigm that can be leveraged to realize the goal of embracing a simplistic and uncluttered life in pursuit of well-being and happiness (Peyer et al., 2017). It has been broadly expressed in consumption culture through design, fashion, and advertising (Pracejus et al., 2006). Research has thus far concluded that minimalistic consumption offers a number of well-being benefits, including satisfaction, happiness, fulfillment, and social relationship improvement (Meissner, 2019; Seegebarth, Peyer, Balderjahn, & Wiedmann, 2016). Although the prevalence of minimalistic consumption has gained momentum worldwide, it is still a relatively new construct that has not yet received a clear consensus in terms of its definition.

Pangarkar et al. (2021) distinguish four forms of minimalism in consumption practice, namely, voluntary simplicity, reduced consumption, anti-consumption, and inconspicuous minimalism. Specifically, voluntary simplicity involves reducing materialistic possessions and clutter to fulfill self-sufficiency and satisfaction (Alexander & Ussher, 2011; Hook et al., 2021). Reduced consumption is sometimes a temporary state characterized by limiting one's number of commodities, thoughtfully selecting products and curating one's collection of possessions (Kuanr et al., 2019; McGouran & Prothero, 2016). Anti-consumption is a unique type of non-consumption, a strong dislike and abhorrence of the consumption practices of certain products and services (Lee & Ahn, 2016; Zavestoski, 2002). The last type, inconspicuous minimalism, reflects the idea that individuals engage in minimalism when driven by social pressures and they normally prefer distinctive products with strong usability, functionality, and simplistic design (Meissner, 2019). Similarly, Wilson and Bellezza (2022) have developed a conceptual framework of consumer minimalism, identifying three key dimensions: quantity of possessions, aesthetics of scarcity, and mindfully curated consumption.

Over time, an individual's orientation toward minimalism may be trait-based, stable, and chronic. For example, Nepomuceno and Laroche (2017) suggest that consumers with self-control and a long-term orientation are inclined to voluntarily reduce consumption to conserve short-term monetary resources that will make them successful in the future. Drawing upon the notion of self-determination theory, other studies document that the gratification of autonomy, competence, and need for relatedness is a key motivation for actively engaging in minimalism (Rich et al., 2017). This is mainly because minimalism enables

individuals to shift their focus from extrinsic goals, such as acquiring material possessions to be wealthy and happy, to intrinsic goals that are more likely to fulfill their psychological needs (Hook et al., 2021; Ryan & Deci, 2000).

Temporal self-regulation theory posits that both intrinsic cognition and temporal valuation result in deliberation on whether to engage in a self-regulated behavior, such as pro-environmental behavior or calorie consumption (Dorina, Mullan, & Novoradovskaya, 2021; Elliston, Ferguson, & Schuz, 2017; Hall & Fong, 2007). Similarly, the minimalist consumption practice involves multiple aspects of a self-regulation process, including reducing material desires, maintaining mental spaces, and limiting excessive possessions (Pangarkar et al., 2021; Rebouças & Soares, 2020). This has led to the idea that an individual's intention to engage in minimalist consumption practice is driven by a desire for self-regulation and self-fulfillment, whether due to personal experience or as a response to environmental cues. Therefore, it is important to provide more insights by investigating how social factors, especially situational cues, lead consumers to value minimalism and impact their minimalistic consumption practice.

2.2. Social crowding

While the traces of research on crowding issues date to the early 1960s, the term "crowding" itself has attracted significant attention in consumer studies in the last two decades, often in terms of restricted movements imposed by limited spaces (Amo, 1975; Rapoport, 1975). Generally, crowding has been conceptualized in terms of social density, which can be distinguished as a physical state of crowding, defined merely in terms of spatial parameters, or an experienced state thereof, activated through the interaction of personal, social and spatial factors (Machleit et al., 1994; Thomas & Saenger, 2020). Recent research has considered the crowding resulting from physical proximity to others in a confined shopping space, which is also referred to as social crowding (Huang et al., 2018). Since restrictions on an individual's personal space are often aversive, social crowding generally results in a number of negative outcomes (Maeng & Tanner, 2013). In line with this view, some studies suggest that social crowding triggers undesirable emotions such as stress, anxiety, anger, sadness, or a lack of control, which promote one's need for avoidance and further decrease one's motivation to participate in social interaction (Harrell et al., 1980; Maeng et al., 2013; O'Guinn et al., 2015).

In a crowded situation, individuals are faced with a plethora of environmental stimuli that they are unable to cope with (Eroglu & Machleit, 1990). Crowding in a shopping environment lowers consumers' capacity to process information, which further depletes their cognitive resources (Michon et al., 2005). As a result, consumers become more willing to rely on lower-order affective processes than deliberative cognitive routes to make decisions. Moreover, crowding-induced distractions also motivate consumers to reassert their perceived self-control and evoke compensatory consumption behavior. For example, Andrews et al. (2015) suggest that consumers in a crowded environment are more willing to establish connections with nonhuman objects, such as brands, and increase their attachment to the brands that they frequently purchase (Andrews et al., 2015). Consequently, recent studies have largely treated social crowding as an undesirable experience that modifies consumer decision-making behaviors in a number of ways.

2.3. Social crowding and minimalistic consumption

While some individual and cultural differences certainly exist, individuals generally have basic psychological needs related to their personal space, uniqueness, and feelings of control (Landau et al., 2015). Conversely, a lack of regularities that govern one's outer environment and the perception of it as disordered and unmanageable have been regarded as aversive feelings triggering social avoidance and withdrawal (Puzakova & Kwak, 2017). To protect themselves from

unsettling negative emotions that their experience of chaos may induce, individuals tend to develop coping strategies to restore the structure and order of their environment (Chae & Zhu, 2014). In line with this research stream, consumers in cramped shopping situations attempt to reassert a feeling of control over their personal space and to restore their sense of comfort by engaging in compensatory consumption behavior (Cutright, 2012; Mandel et al., 2017). Specifically, we speculate that consumers strive for simplicity to counter a messy crowding state as a compensatory strategy. Indirect evidence from several studies lends support to this conjecture. For example, Wang et al. (2022a) find that individuals who experience scarce childhood resources show a preference for bright objects in adulthood as a means of psychological compensation for their dark childhood experience. Hence, Fennis and Wiebenga (2015) note that when contextual cues trigger an experience of chaos and disorder in a retail environment, consumers are likely to set and pursue simpler, clear, and well-defined goals as a compensatory strategy.

Consequently, we suggest that individuals exposed to a crowding space (compared to those in an organized condition) are motivated to psychologically insulate themselves from this chaotic state by showing an inclination toward simplicity in their perceptions, preferences, and choices. As previously discussed, minimalistic consumption not only provides psychological benefits to consumers by converting their state of stress, anxiety and confusion into a more tidy, organized and simple state but also supplies them with a comforting sense of freedom and calm (Hook et al., 2021; Mendonça et al., 2020). Therefore, it is reasonable to assume that consumers are more eager to pursue their satisfaction of psychological needs through minimalistic consumption when shopping in a crowded environment. We thus posit the following hypothesis:

H1. Consumers in a social crowding environment are willing to engage in minimalistic consumption.

2.4. The mediating role of the need for order

Individuals are strongly motivated to view the outside world as a structured and ordered place that is composed of a predictable system with rational relations (Heine et al., 2006; Kay et al., 2008). Generally, the need for order represents an individual's psychological desire for definite structure and aversion to unconstrained chaos in life (Webster & Kruglanski, 1994). Previous research has found that the absence of order threatens an individual's self-control and evokes a sense of stress and anxiety in various forms (Cutright, 2012). In contrast, faith in an order governing the environment we live in fosters both physical health and psychological well-being (Albrecht et al., 2017; Fennis & Wiebenga, 2015). Hence, individuals generally devote much effort to remedying and avoiding perceptions that their environment is random and disordered and further strive to maintain its order. The embodied cognition theory also lends some support to suggest that a crowded shopping environment significantly promotes consumers' need for order. The theory suggests that the cognitive process is biased and influenced by states of the body; therefore, bodily experiences, including physical states and sensory experiences, are an important source of one's subjective cognition (Park & Hadi, 2019; Williams et al., 2009). Consistent with embodied cognition theory, recent research on consumer behavior has also suggested that consumers often use bodily feelings as an important cue in forming their judgments and in their decision-making (Greifeneder et al., 2011; Krishna, 2012). For example, Hong and Sun (2012) suggest that the feeling of physical coldness activates consumers' need for warmth and further increases their fondness for romantic films (J. Hong & Sun, 2012). Cutright (2012) et al. find that an uncontrolled noisy and chaotic environment increases a consumer's need for personal control, which in turn leads to a preference for products with tangible or intangible boundaries. Accordingly, we speculate that invasive stressors, including personal space violation, ambient noise, and other subtle yet omnipresent signs of chaos in a crowded social environment, can induce

consumers' need for order.

Meanwhile, minimalism notably supplies the ability to maintain order in both psychological environment and mental space. Specifically, it provides individuals with the means to gain a feeling of space, clarity, lightness and clear-headedness within their mind (Lloyd & Pennington, 2020). In addition, other studies document how products with a simplistic design, characterized by limited ornamentation, plain colors and nonexcessive packaging, are able to provide consumers with a sense of order, particularly joy and peacefulness, thereby reducing their negative emotions in working life (Elgaaied-Gambier, 2016; Wilson & Bellezza, 2022). Based on these studies, we expect that a crowded environment activates a strong need for order, which promotes consumers to engage in minimalistic consumption.

H2. The need for order mediates the positive effect of social crowding on minimalistic consumption.

2.5. The moderating role of group membership

Social crowding is not always associated with aversive feelings and avoidance responses (Huang et al., 2018). In fact, the effect of a crowded environment on consumer judgment is determined not only by violations of physical space but also by group membership in a crowd (de Oliveira Santini et al., 2022). According to Stokols (1972), individuals generally categorize other social members as in-group or out-group members (Stokols, 1972). In-group members often have closer ties and more similarities in terms of their physical appearance, social background, behavior patterns, and other aspects compared to outgroup members (Lucia-Palacios et al., 2018). Specifically, individuals experience a higher level of uncertainty when they interact with unfamiliar out-group members, whereas they might feel positively toward in-group members. Moreover, Maeng and Tanner (2013) have suggested that individuals are less likely to perceive a crowded situation as aversive when the crowded social environment is composed of in-group members. Other studies have even observed that high density can exert a more positive influence on social behavior than low density for in-group members (Schultz-Gambard, 1979).

Complementing the above arguments, in-group members provide psychological support for coping with the threats and stress of a crowd. Specifically, in-group members may have similar backgrounds or congruence in their daily consumption preferences, strengthening their social ties (Lindsey-Mullikin & Munger, 2011). They experience self-confidence, comfort, and other types of emotional support when regulating uncertainty and stress due to crowding (Lucia-Palacios et al., 2018; Whiting, 2009). Conversely, when confronted by a group of strangers, a negative psychological state may appear due to loud ambient music, messy shelves, or long queues (Baker & Wakefield, 2012; Gelbrich & Sattler, 2014). Thus, when a crowded scene is composed of unfamiliar out-group members; consumers are more willing to engage in minimalistic consumption practice to psychologically cope with the stress, anxiety, and other negative emotions from this aversive situation. Conversely, when the outer environment is composed of familiar in-group members, the inconveniences from such spatial constraints are less likely to result in a great threat to an individual's mental space and induce one's need for order. Therefore, the effect of social crowding on consumers' psychological need for order is also mitigated or attenuated, which in turn may not motivate their minimalistic consumption practice. Accordingly, we propose the following hypothesis:

H3. The effect of social crowding on minimalistic consumption practice is mitigated when the crowding is composed of in-group members (vs. out-group members).

H4. Group membership moderates the mediating effect of consumers' need for order on the relationship between social crowding and minimalistic consumption practice.

2.6. The moderating role of self-construal

Self-construal refers to the constellation of ideas, experiences, and behaviors concerning the self as it relates to other members in the social environment and includes independent self-construal and interdependent self-construal (Singelis et al., 1999). Specifically, persons who are relatively high in independence focus more on their uniqueness, initiative, and self-expression, while persons who are relatively high in interdependence are more inclined to view themselves in an interpersonal environment and attach more value to their connections with other members (Escalas & Bettman, 2005; Kühnen et al., 2001; Sinha & Lu, 2016). As an important individual characteristic, self-construal subtly changes social interactions and their consequences. In other words, self-construal impacts the weight that individuals other group members when they make decisions (J. W. Hong & Chang, 2015).

Considering the differences in the perception of the same situation among consumers with different self-construal, prior studies have suggested that consumers also differ in terms of their brand evaluations and purchase decisions, including service message response, luxury consumption, impulse purchasing, and brand extension (Le Monkhouse et al., 2012; Z. Wang et al., 2022b). Specifically, Huang et al. (2018) suggest that crowding motivates consumers to avoid unwanted interactions and thus leads them to form stronger brand attachments as a substitute that fulfills their need for belongingness. However, this effect is weakened among consumers with interdependent self-construal because they are able to handle close social distances and thus perceive a crowded situation as less aversive. Following this logic, a boundary condition emerges: consumers with independent self-construal tend to be motivated by intrinsic goals of autonomy, differentiation, and freedom (Lalwani et al., 2009) and thus engage in minimalistic consumption practice. Conversely, consumers with interdependent self-construal actively regulate the crowding-induced stress; thus, they have less desire to engage in minimalistic consumption practice. In a similar vein, consumers who are relatively high in interdependence may react less negatively to the social crowding, and the effect of such an environment on consumers' mental space should be relatively less evident, which in turn is unable to motivate the compensatory behavior to cope with the unwanted disorder.

H5. The effect of social crowding on minimalistic consumption practice is mitigated among consumers with interdependent self-construal (vs. independent self-construal).

H6. Self-construal moderates the mediating effect of consumer's need for order in the relationship between social crowding and minimalistic consumption practice.

The overall theorization is demonstrated in Fig. 1.

1

2.7. Overview of the studies

We conducted a series of experimental studies to test the proposed hypotheses. Study 1 and Study 2 tested the basic hypothesis that social crowding increases minimalistic consumption practice (H1). Specifically, Study 1 examined whether social crowding affects consumers' preference for brands or products with minimalist designs. Study 2 examined whether consumers in a situation of social crowding voluntarily reduce the number of possessions. Study 3 further examined whether the above effect (H1) is driven by the need for order (H2). Furthermore, prior research suggests that an overload of information in the environment may hamper an individual's cognitive thinking resources. In addition, social crowding may activate an individual's avoidance system, which results in a stronger prevention focus. Study 3 examined these two alternative explanations. Study 4 and Study 5

showed two important boundary conditions (as specified in H3, H4, H5, and H6). Specifically, Study 4 suggested that the link between social crowding and minimalistic consumption practice is attenuated when the crowdedness is composed of in-group members, while Study 5 supported that the effect of social crowding also depends on self-construal.

3. Study 1

3.1. Participants and design

Two hundred American participants were recruited from MTurk to complete this study for a small monetary incentive. Extant research suggests that MTurk workers have demographical varieties and are suitable for behavioral studies. Seven responses were dropped as they failed an attention check question or reported a uniform response on all measures, reducing the valid responses to 193 ($M_{\text{age}} = 35.48$, 62.2% female)¹. The respondents were randomly assigned to one of two between-subject experimental conditions (social crowding: crowded vs. uncrowded).

3.2. Procedure and variable measures

To manipulate social crowding, participants were instructed to imagine shopping in a depicted scenario and briefly describe their feelings and thoughts in that space (Appendix A lists the stimulus images). Then, participants read about the following raffle: "Thanks for participating in this survey! We are holding a raffle where one randomly drawn participant will receive a \$100 gift card. If you are selected as the winner, you can use the gift card to purchase one of the following products." Based on the experimental design of Wilson and Bellezza (2022), the description of the minimalist-design product indicated a bedding product from a brand that is known for its simplistic design. Products with a simplistic design are characterized by muted styles and simple, linear designs free from ornamentation and excess colors. In contrast, the description of the non-minimalist design product indicated a bedding product from a brand that is known for its diversified designs. Products with diversified designs are characterized by excessive but curated styles, saturated colors and mixed patterns. Then, participants were asked to indicate which one they would choose a gift card for if they won the raffle. Finally, participants rated how they experienced crowding on a scale from 1 (not at all) to 7 (very crowded) and reported some demographic information.

3.3. Manipulation check and product choice

The results of an ANOVA analysis showed that participants in the crowded condition perceived the surrounding space to be more crowded than those in the uncrowded condition. ($M_{\text{crowded}} = 4.51$, $SD = 1.40$; $M_{\text{uncrowded}} = 2.36$, $SD = 1.03$; $F(1, 191) = 148.53$, $p < 0.01$, $\eta_p^2 = 0.44$). Furthermore, participants are more likely to choose the product and brand with minimalist design in the crowded condition (57.9%) than in the uncrowded condition (38.8%; $\chi^2(1) = 7.06$, $p < 0.01$). Using the preference for brands or products with minimalist design as a proxy for minimalistic consumption practice, Study 1 provided initial evidence for H1, demonstrating that social crowding promotes minimalistic consumption practice. See Table 1 for a summary of findings in Study 1 and 2.

4. Study 2

The purpose of Study 2 was to investigate whether consumers limit their number of possessions in a social crowding condition. The preference for brands or products with a minimalist design is one of several manifestations of minimalistic consumption. In this study, we also sought to generalize our findings by examining the effects of social crowding on another form of minimalism: minimizing the number of

¹ The attention question is "what is the value of the gift card for the winner?".

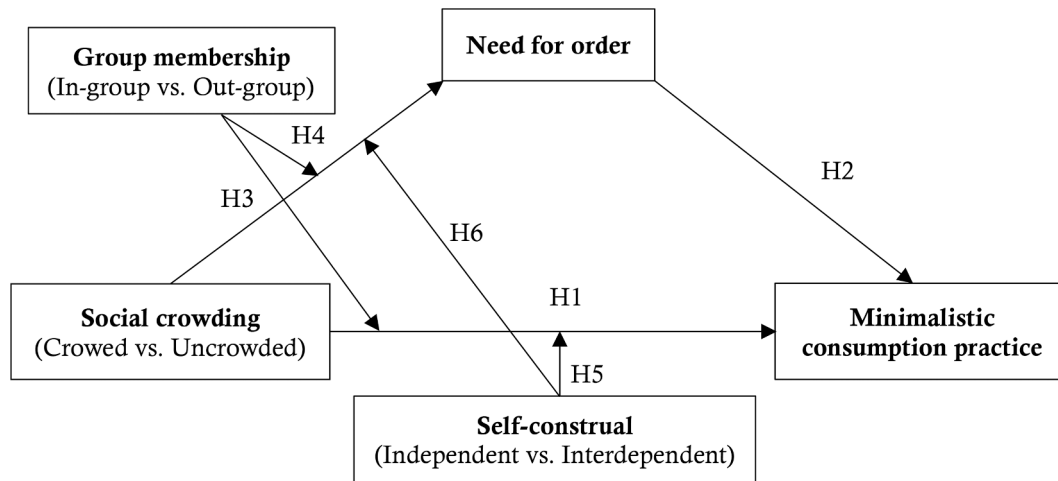


Fig. 1. Conceptual research model.

Table 1
Frequency distribution of participants' choices in Study1 and Study 2.

	Product preference				Total
	Minimalist design product	Non-minimalist design product			
Study1					
Uncrowded condition	38 (38.8%)	60 (61.2%)			98
Crowded condition	55 (57.9%)	40 (42.1%)			95
	Number of free products				
	No free item	One free item	Two free items	Three free items	
Uncrowded condition	4 (4.2%)	51 (53.1%)	34 (35.4%)	7 (7.3%)	96
Crowded condition	1 (1.0%)	9 (9.2%)	47 (48.0%)	41(41.8%)	98

possessions.

4.1. Participants and design

Two hundred American participants were recruited from MTurk to complete this study for a small monetary incentive. Six responses were dropped as they failed an attention check question or reported a uniform response on all measures, reducing the valid responses to 194 (M_{age} = 36.40, 44.3% female)². The respondents were randomly assigned to one of two between-subjects experimental conditions (social crowding: crowded vs. uncrowded).

4.2. Procedure and variable measures

To manipulate social crowding, a similar process to Study 1 was conducted. Participants were instructed to imagine shopping in a depicted scenario and describe their feelings and thoughts. Then, they were asked to respond to the following scenario: Imagine that you are registering for membership at an electrical appliance shop. When you are completing the sign-up process, you see the following information: "Thank you for choosing our products! To thank you for your registration, you are eligible to choose up to three of the following products for free!" We then presented participants with an image of an electric heated blanket with the description "stay warm all winter long," a power

² The attention question is: "Please indicate all the mentioned free products you could choose?" A. a vacuum insulated travel mug B. a power bank C. an electric heated blanket.

bank with the description "rapid charging of up to four devices simultaneously," and a vacuum insulated travel mug with the description "keeps drinks cold or hot for hours." Participants were told that these products are priced equally and that they could select up to three of the products being offered. Then, they were asked to indicate the free item (items) they would choose to receive. Finally, participants rated how crowded they experienced and reported some demographic information.

4.3. Manipulation check and product choice

The results of an ANOVA analysis showed that participants in the social crowded condition perceived the surrounding space to be more crowded than those in the uncrowded condition ($M_{crowded} = 4.51, SD = 1.44; M_{uncrowded} = 2.52, SD = 1.02; F(1, 192) = 122.65, p < 0.01, \eta_p^2 = 0.39$). Furthermore, as predicted, participants are more likely to choose fewer free items in the crowded condition than in the uncrowded condition ($M_{crowded} = 2.31, SD = 0.68; M_{uncrowded} = 1.46, SD = 1.07; F(1, 192) = 73.83, p < 0.01, \eta_p^2 = 0.28$) By operationalizing minimalistic consumption practice as consumers' interest in receiving fewer free products, Study 2 study further demonstrated that consumers would limit their number of possessions under a social crowding condition.

5. Study 3

The purpose of Study 3 was to replicate the findings of Study 1 and 2 by examining the effect of social crowding on three specific dimensions of minimalistic consumption (i.e. reducing number of possessions, preference for sparse aesthetics, and mindfully curated consumption). This study manipulated actual crowdedness to promote the external validity of the effect. Study 3 also sought to examine that a stronger need for order drives the impact of social crowding on minimalistic consumption practice. Furthermore, Study 3 ruled out prevention focus and cognitive load as plausible explanations.

5.1. Participants and design

Two hundred and ten participants from a large university in Southeast China were recruited for course credit. Three participants dropped the experiment halfway and eight participants reported a uniform response on all measures, reducing the valid responses to 199 (M_{age} = 20.64, 55.3% female). All participants were randomly assigned to one of two between-subject experimental conditions (social crowding: crowded vs. uncrowded).

5.2. Procedure and variable measures

We followed the procedure developed by Maeng et al. (2013) to manipulate social crowding in an experimental setting. Participants were assigned to either a crowded situation (12–14 participants per room) or uncrowded situation (3–4 participants per room), with all the sessions held in the same small laboratory setting. They were first asked to complete several unrelated writing tasks. Next, participants reported their agreement with minimalistic consumption using a seven-point scale adapted from Wilson and Bellezza (2022). Sample items include “I would avoid purchasing excess possessions”, “I prefer products with a simplistic design” and “It’s important for me to be thoughtful about what I choose purchase” (ranging from 1 = strongly disagree to 7 = strongly agree). The responses to these measure items were averaged to form an index of minimalistic consumption ($\alpha = 0.76$). Next, each participant’s need for order was assessed by a four-item need for order scale, a subset of the need for cognitive closure scale developed by Neuberg et al. (1997). These four measure items were chosen and adapted by academics and experts working on psychology or consumer behavior and have been used in previous studies on consumer decision-making (Bose & Ye, 2020; Fennis & Wiebenga, 2015; Van Kenhove et al., 2001). Sample items include “I prefer clear rules and order in life” and “I think establishing a consistent routine enables me to enjoy life more” (ranging from 1 = strongly disagree to 7 = strongly agree). Responses to these measure items were averaged to form an index of need for order ($\alpha = 0.79$).

To reveal the possible mechanisms, participants completed the measure of incidental prevention focus based on a four-item scale (e.g., “I am more oriented toward preventing losses at this moment”) adapted from Lockwood and Kunda (2002). Following the experimental procedure of Hock & Bagchi (2018), participants also reported how distracted they were by the other people in the room to assess their availability of processing resources (1 = not at all, 7 = very distracted). A higher number indicates that participants used more cognitive resources to make decisions. Finally, to check the manipulation of social crowding, participants indicated how much crowding they experienced in the room and reported some demographic information.

5.3. Results

5.3.1. Manipulation check

The results of an ANOVA analysis showed that participants in the social crowding condition perceived the surrounding space to be more crowded than those in the uncrowded condition. ($M_{crowded} = 4.67$, $SD = 1.37$; $M_{uncrowded} = 1.75$, $SD = 0.76$; $F(1, 197) = 349.20$, $p < 0.01$, $\eta_p^2 = 0.72$).

5.3.2. Minimalistic consumption practice

We conducted an ANOVA with minimalistic consumption practice as the dependent variable and social crowding as the independent variable. A significant main effect of social crowding emerged ($F(1, 197) = 53.24$, $p < 0.01$, $\eta_p^2 = 0.21$). An additional analysis of the three subscales of minimalistic consumption showed that those in the crowded condition expressed a higher intention to reduce their number of possessions ($M_{crowded} = 4.15$, $SD = 0.88$; $M_{uncrowded} = 3.33$, $SD = 0.69$; $F(1, 197) = 69.06$, $p < 0.01$, $\eta_p^2 = 0.26$), a stronger preference for sparse aesthetics ($M_{crowded} = 3.96$, $SD = 0.99$; $M_{uncrowded} = 3.37$, $SD = 1.13$; $F(1, 197) = 15.41$, $p < 0.01$, $\eta_p^2 = 0.07$), and a higher intention to mindfully curated consumption than those in the uncrowded condition ($M_{crowded} = 3.90$, $SD = 0.89$; $M_{uncrowded} = 3.33$, $SD = 0.82$; $F(1, 197) = 22.28$, $p < 0.01$, $\eta_p^2 = 0.10$).

5.3.3. Mediation analysis

A biased bootstrapping analysis with 5,000 samples was performed by the PROCESS Model 4 to estimate the indirect effect of need for order (Hayes, 2013). The results revealed a significant mediating effect of the

need for order, as the 95% CI for the indirect effect excludes zero (indirect effect = 0.29, $SE = 0.09$, 95% CI = 0.11 to 0.48). Furthermore, the indirect effects of social crowding on the three subscales of minimalistic consumption were also significant, as the 95% CIs for indirect effect excludes zero. These results provide evidence for Hypothesis 2.

5.3.4. Alternative explanations

The alternative mediators were non-significant. Specifically, the results of regression analyses showed that neither prevention focus nor cognitive overload had a significant effect on minimalistic consumption ($ps > 0.10$). However, social crowding had significantly effect on both prevention focus and cognitive overload ($\beta = 0.04$, $p < 0.01$; $\beta = 0.05$, $p < 0.01$). Furthermore, the results of bootstrapping analysis showed that 95% CIs for indirect paths through prevention focus and cognitive overload included zero (95%CI = -0.07 to 0.03; 95% CI = -0.05 to 0.11). These results suggested that the impact of social crowding on minimalistic consumption is driven by enhanced need for order.

6. Study 4

Study 4 sought to examine that the composition of a crowding moderates the influence of social crowding on minimalistic consumption. Specifically, in a social crowding situation that is composed of in-group members, the in-group members would provide psychological support to cope with the stress and threat from the crowding, and therefore the effect of social crowding on minimalistic consumption would be attenuated.

6.1. Participants and design

Two hundred thirty participants were recruited from Credamo, one leading survey platform in China to complete the online survey for a monetary incentive. Ten responses were dropped as they provided incomplete answers or failed an attention check question, reducing the valid responses to 220 ($M_{age} = 33.20$, 48.4% female)³. Participants were randomly assigned to one of four experimental conditions of a 2 (social crowding: crowded vs. uncrowded) \times 2 (group membership: in-group vs. out-group) between-subjects design.

6.2. Procedure and variable measures

To manipulate social crowding, participants were instructed to complete the picture perception task as in Study 2. In addition, we followed the procedure applied by Huang et al. (2013) to manipulate group membership. Specifically, participants in the in-group condition were told “you live in the same community with other customers, and you are personally familiar with them”. In contrast, participants in the out-group condition were told “you live in a different community from other customers, and you do not personally know any of them. To strengthen the manipulation, participants in the in-group (out-group) membership condition were asked to describe three ways in which they were similar to (different from) the customers in the picture. Then, they were asked to complete the measure items of minimalistic consumption and need for order employed in Study 3 ($\alpha = 0.83$, $\alpha = 0.90$). Finally, to check the manipulations, participants were also asked to indicate how crowded they experienced and how close they perceived their interpersonal relationship with other customers.

6.3. Results

6.3.1. Manipulation check

The results of an ANOVA showed that the participants in the crowded

³ Please respond with ‘strongly disagree’ for this item (1 = strongly disagree, 7 = strongly agree).

condition perceived their surrounding space to be more crowded than those in the uncrowded condition ($M_{crowded} = 4.75$, $SD = 1.68$; $M_{uncrowded} = 2.44$, $SD = 1.12$; $F(1, 218) = 143.36$, $p < 0.01$, $\eta_p^2 = 0.40$). Furthermore, the participants in the in-group condition indicated a closer interpersonal relationship with other customers than those in the outgroup condition ($M_{ingroup} = 4.05$, $SD = 0.87$; $M_{outgroup} = 2.31$, $SD = 1.03$; $F(1, 218) = 183.00$, $p < 0.01$, $\eta_p^2 = 0.46$). We have also conducted a two-way ANOVA to test the effects of social crowding and group membership on the perceived crowdedness. The result revealed the interaction of social crowding and group membership was not significant ($F(1, 216) = 1.08$, $p > 0.10$). The main effect of group membership was also not significant ($F(1, 216) = 2.01$, $p > 0.10$). These results indicated that in-group condition did not make participants perceive lower crowdedness.

6.3.2. Moderating role of group membership

One two-way ANOVA was conducted to test the effects of social crowding and group membership on the need for order. The results revealed a significant interaction of social crowding and group membership ($F(1, 216) = 18.04$, $p < 0.01$, $\eta_p^2 = 0.08$). We conducted another two-way ANOVA on minimalistic consumption, which showed a significant interaction of social crowding and group membership ($F(1, 216) = 33.52$, $p < 0.01$, $\eta_p^2 = 0.13$). Specifically, when other customers were out-group members, participants reported a higher minimalistic consumption intention under crowded condition than those under uncrowded condition ($M_{crowded} = 4.71$, $SD = 0.57$; $M_{uncrowded} = 3.31$, $SD = 0.67$, $p < 0.01$). In contrast, when other customers were in-group members, they showed no apparent difference in participants' minimalistic consumption intention for the crowded and uncrowded conditions ($M_{crowded} = 4.01$, $SD = 0.81$; $M_{uncrowded} = 3.73$, $SD = 0.81$, $p > 0.10$) (See Fig. 2). Collectively, these results provide evidence for Hypothesis 3.

6.3.3. Moderated mediation analyses

We conducted a moderated mediation analysis using PROCESS Model 8 with 5000 bootstrap resamples (Hayes, 2013). The results revealed a significant moderated mediation effect of the need for order as the 95% CI excluded zero (index = 0.21, SE = 0.12, 95% CI = 0.04 to 0.50). Specifically, within the out-group condition, the effect of social crowding on minimalistic consumption was mediated by the need for order, as the 95% CI excluded zero (indirect effect = 0.25, SE = 0.12, 95% CI = 0.06 to 0.54). However, there was no significant mediation in the in-group condition, as the 95% CI excluded zero (95% CI = -0.15 to

0.15). Collectively, these results provide evidence for Hypothesis 4.

7. Study 5

Study 5 determined whether participants' personal characteristics could moderate the effect of social crowding on minimalistic consumption. Specifically, individuals with interdependent self-construal consider a crowded situation as relatively less aversive, and therefore the effect of social crowding on minimalistic consumption is attenuated.

7.1. Participants and design

Two hundred and fifty participants from a large university in Southeast China were recruited through a campus advertisement. Five participants reported a uniform response on all measures, reducing the valid responses to 245 ($M_{age} = 28.64$, 55.3% female). Participants were randomly assigned to one of four experimental conditions of a 2 (social crowding: crowded vs. uncrowded) \times 2 (self-construal: independent vs. interdependent) between-subjects design.

7.2. Procedure and variable measures

We manipulated social crowding through the subjects' actual crowding experience similar to Study 3. Participants were assigned to either a crowded situation or uncrowded situation with all sessions being held in the same small laboratory setting. Meanwhile, following the experimental procedure of Aaker & Lee (2001) and Wang & Chen (2022), we manipulated self-construal by exposing participants to different ads. Participants were firstly provided some information about the product in an ad: "Happy Chips" is a popular product from a famous food company, which has three kinds of flavors. Participants in the independence condition saw an ad emphasizing "Give yourself a chance to a great taste", whereas those in the interdependence condition saw an ad emphasizing "Give your friends and family a chance to a great taste." Then they were asked to imagine they had tried the chips and the product was on a promotion.

A pretest with 120 participants from the same participant pool was conducted to check this manipulation. The results showed an effective manipulation, as participants in the independence condition thought more about themselves ($M_{independence} = 4.03$, $SD = 0.97$; $M_{interdependence} = 3.01$, $SD = 1.05$, $p < 0.01$) than those in the interdependence condition, whereas those in the interdependence condition thought more about the others ($M_{independence} = 3.05$, $SD = 1.17$; $M_{interdependence} = 4.26$,

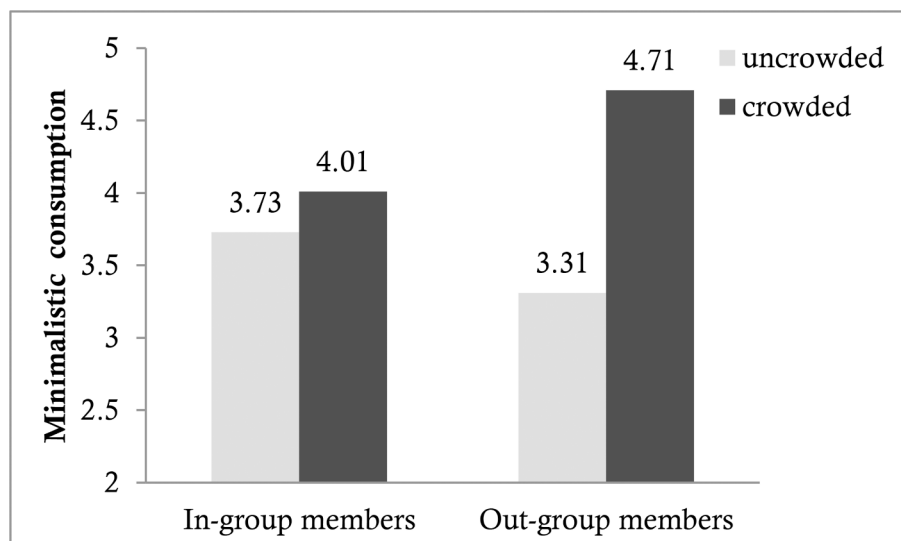


Fig. 2. The moderating role of group membership.

$SD = 1.22, p < 0.01$) than those in the independence condition. After that, participants were asked to complete the measure items of minimalistic consumption and need for order employed in above studies ($\alpha = 0.87, \alpha = 0.89$). Finally, to check the manipulations, participants indicated the extent to which they thought about (1) themselves and (2) others, as well as the extent of the crowding they experienced using a seven-point scale (1 = not at all, 7 = a lot).

7.3. Results

7.3.1. Manipulation check

The results of an ANOVA showed that participants in the crowded condition perceived the surrounding space to be more crowded than those in the uncrowded condition. ($M_{crowded} = 4.40, SD = 1.88; M_{uncrowded} = 2.71, SD = 1.24; F(1, 243) = 84.24, p < 0.01, \eta_p^2 = 0.26$). Furthermore, participants in the independence condition thought more about themselves ($M_{independence} = 3.75, SD = 1.10; M_{interdependence} = 2.93, SD = 1.01, F(1, 243) = 34.19, p < 0.01, \eta_p^2 = 0.12$), whereas those in the interdependence condition thought more about the others ($M_{independence} = 2.58, SD = 1.02; M_{interdependence} = 4.22, SD = 0.92, F(1, 243) = 174.26, p < 0.01, \eta_p^2 = 0.42$). These results indicate that the manipulations of social crowding and self-construal were effective. We have also conducted a two-way ANOVA to test the effects of social crowding and self-construal on perceived crowdedness. The result revealed the interaction of social crowding and self-construal was not significant ($F(1, 241) = 0.29, p > 0.10$). The main effect of self-construal was also not significant ($F(1, 241) = 0.21, p > 0.10$). These results indicated that the interdependent self-construal condition did not make participants perceive lower crowdedness.

7.3.2. Moderating role of self-construal

One two-way ANOVA was conducted on need for order, which revealed a significant interaction of social crowding and self-construal ($F(1, 241) = 18.75, p < 0.01, \eta_p^2 = 0.07$). We conducted another two-way ANOVA on minimalistic consumption, which also revealed a significant interaction of social crowding and self-construal ($F(1, 241) = 16.97, p < 0.01, \eta_p^2 = 0.07$). Planned contrast revealed that in the independence condition, participants reported a higher minimalistic consumption intention under crowded condition than those under uncrowded condition ($M_{crowded} = 4.38, SD = 0.67; M_{uncrowded} = 3.28, SD = 0.65, p < 0.01$). In contrast, in the interdependence condition there was no apparent difference in participants' minimalistic consumption intention for the crowded and uncrowded conditions ($M_{crowded} = 3.91, SD = 0.95;$

$M_{uncrowded} = 3.69, SD = 0.97, p > 0.10$.) (See Fig. 3). Collectively, these results provide evidence for Hypothesis 5.

7.3.3. Moderated mediation analyses

We conducted a moderated mediation analysis using PROCESS Model 8 with 5000 bootstrap resamples (Hayes, 2013). The results revealed that self-construal moderated the indirect effect of social crowding on minimalistic consumption via need for order (index of moderated mediation = 0.32, SE = 0.12, 95% CI = 0.13 to 0.61). Specifically, within the independence condition, the effect of social crowding on minimalistic consumption was mediated by need for order, as the 95% CI excluded zero (indirect effect = 0.32, SE = 0.10, 95% CI = 0.15 to 0.55). However, there was no significant mediation in the in-group condition, as the 95% CI excluded zero (95% CI = -0.13 to 0.10). Therefore, these results provide evidence for Hypothesis 6.

8. General discussion

Minimalistic consumption has been gaining considerable attention globally over the last two decades. Although minimalism sometimes reflects a belief that dictates judgment and behavior, it also encompasses different facets related to value orientations, practices, and relationships both with other members and with the environment (Wilson & Bellezza, 2022). Specifically, social contexts as well as personal experiences likely drive varying concerns and emphases on different forms of minimalism. Such minimalistic practice may be expressed in different forms, depending on specific situational cues. For example, Kuanr et al. (2019) empirically demonstrate how the voluntary simplicity intention of their participants is activated by situationally induced materialism (i.e., the exposure to a luxury goods stimulus). Wilson and Bellezza (2022) state that individuals alter their preferences for monetary resources as well as personal space after suffering a contraction; thus, they infer that both financial and space constraints are likely to result in a subsequent embrace of minimalism. Other studies also suggest that when people suffer stress and anxiety in their outer environment, they tend to actively engage in minimalism to gain a sense of calmness and to avoid exterior clutter (Alexander & Ussher, 2011; Lloyd & Pennington, 2020).

Previous studies have widely explored the positive relationships among minimalism and happiness and fulfillment and personal well-being. However, the extant research on minimalist consumption has mainly centered on identifying its various forms and establishing scales for measuring an individual's motivation and interest in engaging in minimalist consumption (Pangarkar et al., 2021; Wilson & Bellezza,

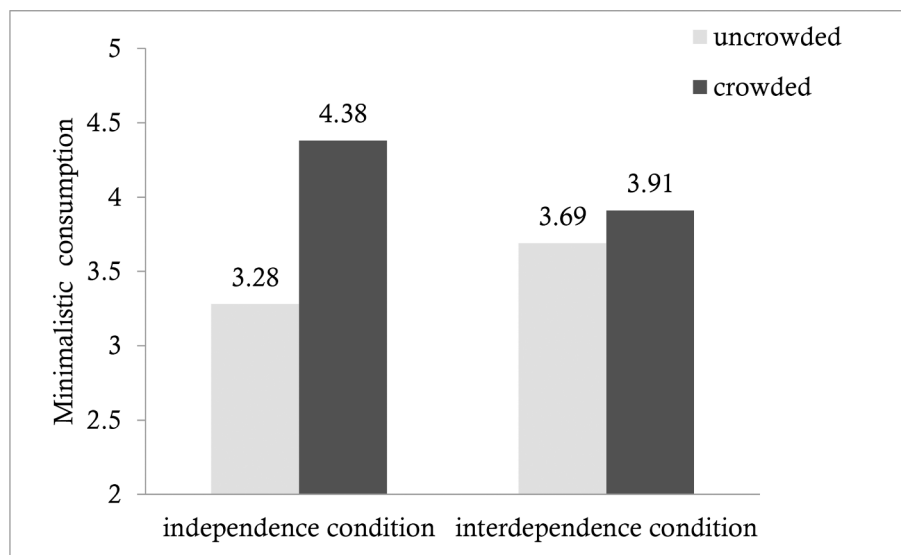


Fig. 3. The moderating role of self-construal.

2022). Hence, there is a lack of empirical studies exploring the influential factors as well as the psychological mechanisms of minimalist consumption practice. This study specifically investigates the effect of a common environmental cue, social crowding, on minimalistic consumption practice.

Across five studies, we have theorized and empirically tested that social crowding induces the minimalist consumption practice. Specifically, Study 1 and Study 2 suggest that consumers show a preference for products with a minimalist design and limit their number of possessions under the condition of social crowding. Study 3 confirms the mediating role of the need for order in the effects of social crowding on minimalist consumption and rules out two alternative accounts. Study 4 and Study 5 explore relevant moderators such as group membership and self-construal and show when and why the above effects are attenuated.

8.1. Theoretical contributions

This study makes three significant contributions to the literature: First, we extend the ongoing research on minimalistic consumption by demonstrating that a particular subtle environmental cue, social crowding, can induce minimalistic consumption. Previous research on minimalism has mainly regarded it as a distinct value orientation and distinguished its various expressions in consumer behavior. There are few empirical studies exploring the antecedents, especially the situational factors, of minimalistic consumption practice. By integrating a compensatory strategy perspective, this study shows that a crowded environment elicits an experience of disorder and chaos, thereby motivating consumers to engage in minimalistic consumption to cope with this chaotic experience. Moreover, prior studies have indicated that social crowding triggers consumer's innate psychological needs and affects their product and brand preferences, such as calorie consumption, social avoidance behavior, or positive brand attachment (Hock & Bagchi, 2018; O'Guinn et al., 2015; Puzakova & Kwak, 2017). The current study adds new insights to these findings by demonstrating how exposure to crowding can lead consumers to engage in various forms of minimalistic consumption practice.

Second, this study reveals the underlying mechanism by which the need for order mediates the impact of social crowding on minimalistic consumption. Atmospheric elements such as temperature, noise, color and layout have been found to impact affective states and psychological comfort, which automatically change consumption behavior. Crowding, as an omnipresent condition, induces negative emotions, evokes affective processing, and intensifies the need for affiliation, which further leads to specific consumer decisions and preferences. However, none of these explanations effectively illustrate the driving mechanism of minimalistic consumption. Therefore, this study proposes an alternative account that can clarify the process by which atmospheric conditions affect consumption behavior. Furthermore, this research enriches the growing literature on why consumers adopt distinct consumption manners to buffer and respond to self-threatening situations.

Finally, this study sheds light on the important moderating role of group membership and self-construal via our uncovered effect. Specifically, a single boundary condition has been demonstrated, i.e., a crowded environment motivates consumers' need for order and further induces their minimalistic consumption only when a crowd is composed of unfamiliar outgroup members. This study also supports and extends earlier research by suggesting that consumers with interdependent self-construal are more tolerant of close social distances and are less likely to exhibit minimalistic consumption. Although consumer self-construal varies across cultures, it is also a personal trait that can be regarded as a segmentation tool to account for consumer heterogeneity in compensatory consumption. These findings collectively enhance the understanding of the differential effects of social crowding on minimalistic consumption.

8.2 Managerial implications

This study also provides several significant marketing implications. As crowded situations are quite common in everyday life, marketing practitioners could effectively capitalize on their possibilities in their efforts to promote minimalistic consumption. Specifically, managers of brands that pursue minimalism in their designs and materials could consider locating their store in a densely populated area, such as the ground floor of a shopping mall. Moreover, corporations might emphasize their objective of "quality over quantity" to build a positive image and strengthen consumer relationships when developing marketing campaigns in high-traffic areas, such as busy urban street intersections and city centers. Furthermore, the findings of this study also show the significance of considering both the level of social density and the configuration of social crowding when capitalizing on a crowded atmosphere to attract consumers. To be more specific, it is more effective to launch products with a minimalistic design in mundane crowded spaces, but it might be ineffective to apply such strategies in crowded environments that are designed for festivals and other shared consumption situations. Sellers and manufacturers of minimalist brands should consider targeting consumer's self-construal and inducing their independent self-construal through marketing messages.

8.3 Limitations and future directions

There are some theoretical and methodological limitations associated with our study. Firstly, our research indicates that minimalistic consumption serves as compensation behavior that maintains the psychological need for order in crowds. However, it also implies that information cues and physical proximity in a crowded environment may not only lead to overstimulation but also threaten individual uniqueness. Given that minimalistic consumption practice, especially the preference for fewer possessions and more simplistic designs, may help individuals cope with overstimulation and reassert their freedom, future studies should further investigate other parallel psychological mechanisms (e.g., the need to reduce overstimulation and the need for uniqueness) and their differential impacts on the discrete dimensions of minimalistic consumption. Furthermore, we have conducted five experimental studies of hypothetical situations to examine our hypotheses, which may have limited the ecological validity of our research findings. Future studies ought to conduct field experiments in real consumption situations to promote the generalizability and robustness of the crowding effects in minimalistic consumption.

CRedit authorship contribution statement

Siyu Gong: Writing – original draft, Formal analysis, Data curation, Conceptualization. **Danni Suo:** Writing – review & editing, Methodology, Conceptualization. **Peter Peverelli:** Writing – review & editing, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A. . Study 1: Stimuli

Crowded condition:

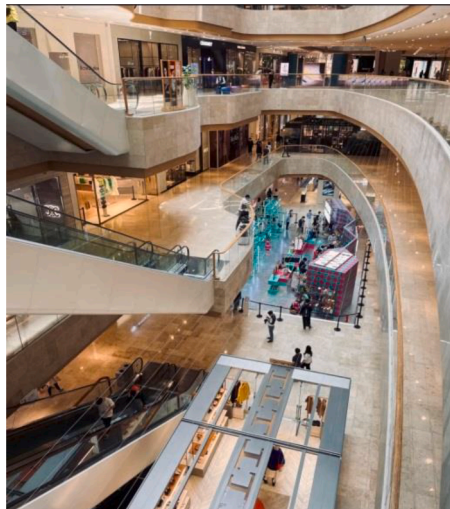
Imagine that you are shopping in the picture scenario. Please briefly describe your feelings and thoughts in the space.



Your feelings and thoughts:

Uncrowded condition:

Imagine that you are shopping in the picture scenario. Please briefly describe your feelings and thoughts in the space.



Your feelings and thoughts:

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- Dr. Siyu Gong** is a Lecturer from School of Business, Nanjing Normal University, Nanjing, China. She graduated from Jilin University and was a joint PhD candidate at Vrije Universiteit Amsterdam. Her research interests include consumer behaviour and consumer psychology.
- Danni Suo** is a PhD candidate from School of Business and Management, Jilin University, Changchun, China. Her research studies focus on enterprise development, corporate social responsibility and green innovation.
- Dr. Peter Peverelli** is an assistant professor from the Department of Management and Organization at Vrije Universiteit Amsterdam. He completed his first PhD in Literature from Leiden University. He also holds a Doctoral degree in Business Administration from Erasmus University Rotterdam. His research interests include management and organization theory and cross-culture human right.