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Crowding in the time of COVID: Effects on rapport and shopping satisfaction

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ABSTRACT

Decades of research in marketing has established that crowding (human and spatial) in retail contexts significantly affects shopping satisfaction. Prompted by the profound changes in retail supply and demand due to the Covid-19 pandemic, this study expands knowledge in two ways: uncovering new relationships and replicating some of the critical findings previously demonstrated in the pre-pandemic context. Two studies (Study 1 scenario and Study 2 actual shopping trip) show that higher levels of human crowding results in lower levels of shopping satisfaction, and this effect is mediated by a new construct introduced into the crowding literature, namely, customer rapport with employees, emerging as a significant factor in the pandemic era. Importantly, the results show that these relationships differ according to customers': a) perceptions about the appropriateness of retailer precautions, b) beliefs about the severity of threat that the pandemic presents, and c) perceived vulnerability to Covid-19, all of them new to crowding dynamics during the time of Covid. Finally, with Study 2, we replicate and extend selected findings from prior research on crowding. Overall, the results expand our understanding of crowding effects and provide novel insights in the "new normal" retail context.

1. Introduction

With the onset of the Covid-19 pandemic, the world has seen the most severe restrictions on the freedom and social lives of individuals since WWII. At the time of this writing, the repercussions of restrictions still continue to affect all spheres of life on a global scale, notably the social environment. The concept of social distancing has moved to the forefront of consciousness all over the world, with implications that span a wide range of emotions and beliefs from hopeful to depressing, and from absolutely necessary to complete hoax.

This study focuses on a socially-rooted construct, human crowding, and its outcomes in the offline retail context during the time of the Covid-19 pandemic. We aim to detect possible changes in the relationship between human crowding and its critical outcome, satisfaction, notwithstanding the profound changes currently occurring in the behaviors of both retailers and consumers. In this inquiry, we are inspired by a timely study which, interestingly, just pre-dates the Covid-19 phenomenon. Researchers Wang and Ackerman (2019) contend that the concept of human crowding is undergoing a "re-birth" due to heightened socioecological and environmental influences, such as pathogen threats. We agree. At this time of extraordinary containment measures, traditional shopping deterrents such as retail crowding and waiting times are now embraced by some consumer segments while labeled as unnecessary or even a hoax by others (Igielnik, 2020; Jurkowitz and Mitchell, 2020). We believe that previously validated consequences of crowding in the retail context need to be re-visited in view of the "new normal" which has altered behaviors of both retailers and their customers.

Based on this rationale, our work has two objectives, namely, to *replicate* and *extend* selected previous findings under the new environment dictated by the pandemic. The replication goal is inspired by the recent calls to corroborate and re-examine findings in the marketing literature in pursuit of higher rigor (Babin et al., 2020; Hubbard, 2015; Hubbard and Carriquiry, 2019). Specifically, these calls encourage reproduction and replication efforts with "different contextual settings, populations, scale measurements and sampling units" (Babin et al., 2020, p.3). Thus, in this study we first aim to re-examine the well-established effects of a social-based environmental construct, retail crowding, and its impact on shopper satisfaction within the context of the new retail landscape defined by the pandemic. We replicate the previously demonstrated influencers (e.g., tolerance for crowding) and impact (e.g., on emotions, shopping values, shopping satisfaction) of

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human crowding within the context of the "new normal." The extension goal is realized, first, by exploring the role of retail crowding dynamics of another social construct, customer-employee rapport, which recent research has shown to be a strong determinant of shopper satisfaction and retailer success. Secondly, we extend existing knowledge by incorporating the possible impact of two new business context changes: the mitigation measures by retailers and changes in consumer behaviors due to the pandemic. Specifically, we include the potential influence of two new factors: customer perceptions about appropriateness of retailers' precautions, and beliefs about the seriousness of the virus threat. The addition of these variables is prompted by the findings of a recent study (Kellaris et al., 2020), the literature on crowding-perceived risk association (Becker et al., 2015; Kim and Lee, 2012), and reports on consumers' divergent reactions to retailer precautions to mitigate the virus spread (Freeman et al., 2020; Klein, 2020).

In sum, we seek to answer the following questions: 1) In light of the intense changes taking place in consumer/retailer interactions, what is the impact of retail crowding on shopping satisfaction directly and via mediation by customer-employee rapport? 2) What influence do shoppers' beliefs about appropriateness of retailer precautions and about the seriousness of the virus threat have on these relationships? 3) What, if any, changes are observed in some of the previously demonstrated retail crowding outcomes given the new business context imposed by the pandemic?

2. Theoretical framework

Fig. 1 presents the driving model of the study that is rooted in the work of Lazarus and colleagues (Lazarus, 1966, 1991, 1991; Lazarus and Folkman, 1984; Lazarus and Launier, 1978) on coping with stress. This theory contends that under stressful conditions, such as high perceived crowding, individuals engage in an appraisal to generate options in order to change the stressful situation. Their appraisal focuses on the availability of coping options that might alter the harm, threat or challenge in order to resume a more manageable environment.

Coping mechanisms are the psychological and behavioral moves that are used to manage the demands of the stressful situation (Lazarus and Folkman, 1984). There are two types of coping responses: problem-focused and emotion-focused. The former aims to obtain information and perform actions to alleviate or reduce the problem, such as making an action plan, scouting the physical environment and so forth. The emotion-focused coping seeks to regulate the emotions in order to overcome or reduce the impact of the situation on the individual's psyche. Examples of this type of coping response are engaging in distracting activities or seeking social support (as from the employees and/or customers).

Inspired with this conceptualization, we develop our study model and its hypotheses. To overview, we begin with a finding well-established in the literature, that the extent of human crowding stress customers experience in the store influences their shopping satisfaction. As suggested by the Lazarus et al. (1978, 1984) framework and previous findings in the crowding literature (Lucia Palacios et al., 2018; Rosenbaum and Montoya, 2007; Tombs and McColl-Kennedy, 2003), customers cope with this stress by developing responses that are rooted in both the physical and social environment of the venue. Of the two major sources of social resources available to customers in the retail context (Rosenbaum and Montoya, 2007), namely, employees and other customers, we focus on the former and hypothesize a mediation role for the construct of customer-employee rapport whose selection rationale is detailed later in this paper. In addition, given the Covid context of the study, we further propose that both of these links should be moderated by two factors, namely, customers' perceptions of how appropriate

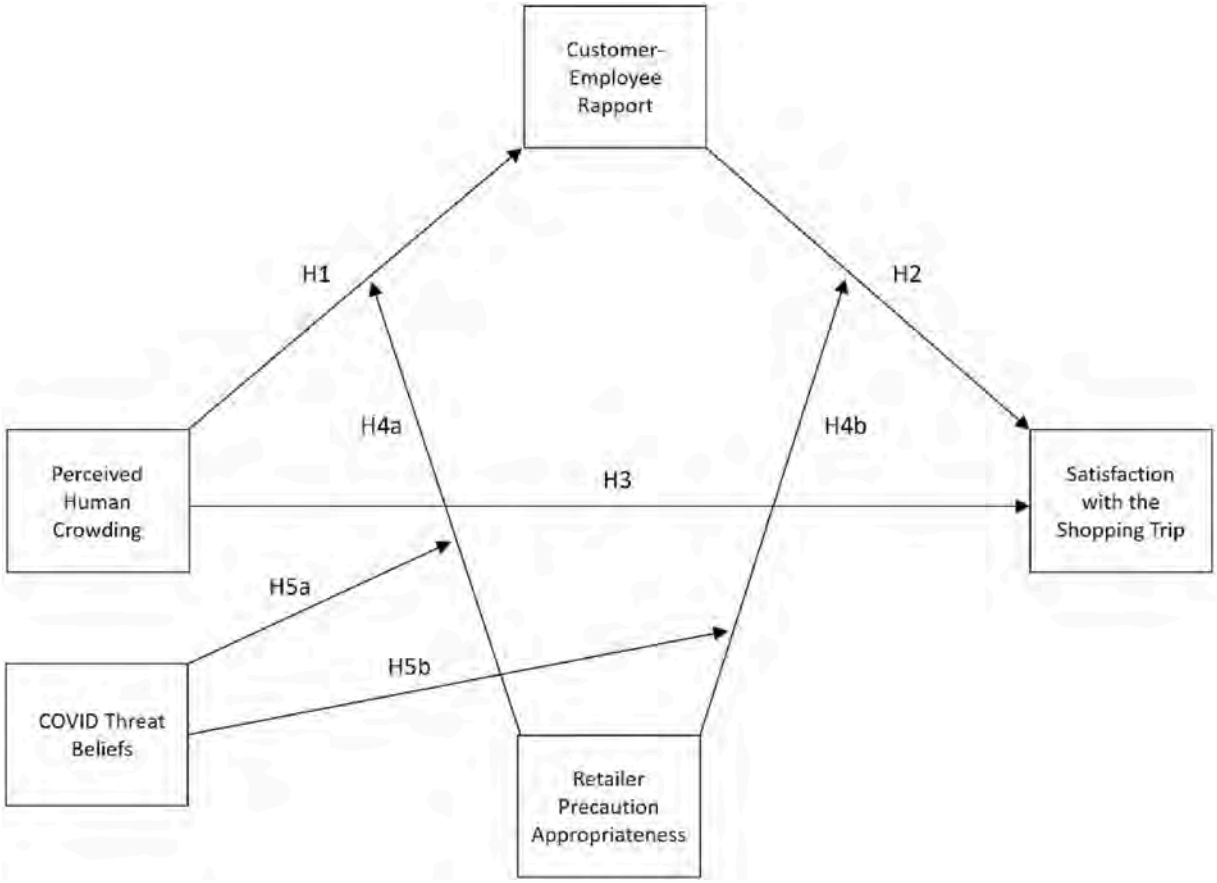


Fig. 1. Conceptual model and hypotheses.

retailers' precautions (containment measures) are, and their beliefs about the seriousness of the virus threat. Below, we explain in detail the theoretical rationale which supports the proposed hypotheses.

2.1. Human crowding and shopping satisfaction

A store's social environment involves employees and other shoppers whose number and types profoundly influence the store atmosphere and shopping behaviors therein (Baker et al., 2002). The quantity of people in a store determines its human density, ultimately shaping the patrons' crowding experience. The significant impact of human crowdedness on consumer cognition, affect and behavior has been well-established in the marketing literature since its introduction into the field several decades ago by Harrell and Hutt (1976; reviews by Blut and Iyer, 2019; Mehta, 2013). Human crowding is a perceptual outcome of the number of people (density) and their interactions in the store. The distinction between density (number of people) and human crowding (a perception) is important to note, because individuals will vary on their perceptions of crowding given the same density. Evidence in marketing indicates that human crowding has significant effects on in-store shopping behaviors and outcomes. One particular outcome of human crowding examined here is customers' satisfaction with the shopping experience, a consequence whose significance is demonstrated in retail crowding research (see review by Blut and Iyer, 2020). Satisfaction is a major goal for retailers because it offers an overall and solid evaluation of the service provided, ultimately determining their success (Brexendorf et al., 2010).

Studies on the link between crowding and satisfaction have generally shown a negative relationship in the context of utilitarian shopping contexts (Li et al., 2009; Machleit et al., 1994, 2000), while this valence is reversed when shopping goals are non-utilitarian and hedonic (Eroglu et al., 2005a; Kim et al., 2016; Li et al., 2009). In some cases, this relationship depends on the interaction that crowding has with other atmospheric factors such as odors (Michon et al., 2005) and music (Eroglu et al., 2005b). Recent research shows many variables which moderate and mediate this relationship, such as emotions, expectations of and tolerance for crowding, and store type (see review by Mehta, 2013). In the first study, our research focuses only on the variables that are believed to be relevant to the study's focus under the new conditions imposed by the pandemic. Toward that end, we hypothesize three different associations between human crowding and satisfaction (direct, mediated and moderated) as detailed below.

2.2. Mediating role of customer-employee rapport

Previous research on the stress alleviating factors in servicescapes has typically focused on two types of cues to reduce customers' perceived crowding, namely, physical and social. In the latter domain, studies have shown that social support can help customers cope with stress by providing emotional support, empathy and guidance (Rosenbaum et al., 2007, 2017; Sengupta et al., 2015). However, missing in this body of work is the specific employee qualities that help regulate crowding stress and how this process ensues. Our study aims to address this void by positing a mediation role for a characteristic whose significant impact on customer affect and cognitions has been established in prior research (Kim and Baker, 2019; Delcourt et al., 2013); customer-employee rapport. We expect that high levels of human crowding experienced by customers negatively affect their rapport with employees, which ultimately results in lowering their satisfaction.

Rapport is defined as "a customer's perception of having an enjoyable interaction with a[n] employee, characterized by a personal connection between the two interactants" (Gremler and Gwinner, 2000, p.92). The reason for focusing on rapport is two-fold. First, despite the demonstrated impact of crowding on consumers' in-store interactions with employees (Dion, 2004; Mattilla and Wirtz, 2008), no study to date has directly tested this effect in the context of a crowding/rapport relationship. This is surprising, given the increased attention that rapport continues to receive in the marketing literature where it is shown to engender positive retailer image, favorable attitudes and loyalty (Biedenbach et al., 2011) as well as customer satisfaction (Kim and Baker, 2019; Delcourt et al., 2013). The second reason for exploring the concept of rapport is guided by the coping theory of Lazarus and colleagues. Because rapport emphasizes the more emotional and affective side of the customer-employee interaction (Biedenbach et al., 2011), it is a prime quality for stressed customers to access as they resort to their emotion-focused coping in the stressful environment of the crowded store. Recall that emotion-focused coping seeks to regulate the feelings in order to overcome or reduce the impact of the situation on the individual's psyche. Given that emotions are shown to be strong influencers of crowding outcomes (Blut and Iyer, 2019) and that salespeople can provide support for it as discussed above, we posit that the concept of rapport serves as a meaningful mediator for the crowding-satisfaction relationship. Thus, we hypothesize that higher level of human crowding should decrease customer-employee rapport while the latter increases the shopping satisfaction experienced in the store. Thus, we hypothesize that:

H1. Perceived crowding is negatively related to customer-employee rapport.

H2. Customer-employee rapport is positively related to shopping satisfaction.

H3. Perceived crowding negatively affects shopper satisfaction directly as well as indirectly through the mediating role of customer-employee rapport.

2.3. Moderation roles of perceived appropriateness and perceived threat

Given the pandemic context of the study and recent evidence (Kellaris et al., 2020; Freeman et al., 2020), we introduce two new variables into the crowding literature which we consider important for moderating the hypothesized relationships in the present context. They are customers' beliefs about the severity of threat associated with the Covid-19 virus, and their perceptions regarding the appropriateness of retailer precautions.

There seems to be a wide range of differences among people concerning how dangerous a health threat the coronavirus pandemic actually is. As recent research shows (Erev et al., 2020), on one hand, there are those who do not agree with the scientific and governmental census on the virus, think that they are invincible and who are, therefore, less likely to follow the recommended guidelines such as wearing masks and human distancing (Freeman et al., 2020). Indeed, the pandemic has shown how compliance to recommended, and even required, rules and recommendations can become a major problem for policy makers (Muller and Rau, 2021). On the other extreme are risk-averse consumers who think the dangers are grave and agree to conform to even the strictest guidelines (de Bruin and Bennett, 2020). Recent research by Kellaris et al. (2020) introduced a measure of threat belief that moderates the focal relationships in their study. They contend that people differ widely with respect to beliefs about the level of perceived threat the Covid-19 pandemic presents. Their sample represented a wide range from "Covid-19 is a hoax" denial to extreme concern about the seriousness of the threat.

A similar situation emerges with the second factor we introduce in our model, namely, customers' widely varying views about the appropriateness of retailer actions in response to the pandemic. Some are grateful for the cost and effort retailers have expended to make their stores safer for their patrons, while others are angry for the time and inconvenience imposed by rules such as mask and social distance enforcement, store entry phasing to manage human density levels, shorter hours, and so forth (WECT News, 2020). We believe that customers can access this factor when deploying the problem-focused coping mechanism in the Lazarus and Folkman (1984) model recalling

that this type of coping aims to perform actions to alleviate or reduce the problem via responses such as scouting the physical environment for solutions and so forth. If shoppers believe that they are safe (i.e., the retailer has taken appropriate precautions to protect them from virus transmission), they will be more likely to engage with an employee even when the environment is crowded. Hence, the perceived appropriateness of retailers' precautions should play a moderating role in that:

H4a. Perceived appropriateness moderates the crowding → rapport relationship such that crowding's negative effect on rapport weakens when retailer precautions are deemed appropriate.

H4b. Perceived appropriateness moderates the rapport → satisfaction relationship such that the positive effect of rapport on satisfaction strengthens when retailer precautions are deemed appropriate.

Further, we hypothesize that the moderating effects in H4 will occur only for those who believe Covid-19 is a threat. If shoppers feel there is no threat, then they will not value the precautions taken by the retailer.

H5a. Covid-19 threat beliefs moderate the moderating effect of perceived retailer precautions on the relationship between human crowding and rapport such that retailer precautions only moderate for those who believe Covid-19 is a threat. For those who do not believe Covid is a threat, retailer precautions will not moderate the crowding → rapport relationship.

H5b. Covid-19 threat beliefs moderate the moderating effect of retailer precautions on the relationship between rapport and shopping satisfaction such that retailer precautions only moderate for those who believe Covid-19 is a threat. For those who do not believe Covid is a threat, retailer precautions will not affect the rapport → satisfaction relationship.

3. Research methodology

3.1. Study 1

3.1.1. Participants

Data were collected in June 2020. Two-hundred and fifty-two participants were recruited through Prolific, an online participant recruitment platform for academic research. As an attention check, respondents were asked if the researchers should use their data and three individuals recommended their data not to be used in analysis. These respondents were removed, leaving a final sample of 248 participants (M_{age} = 34.59, SD = 12.383; 55.6% females).

3.1.2. Design and procedure

Conducted online, this study follows a 2 (Density: high vs. low) x 2 (Retailer precautions: present vs. absent) between-subjects design. Participants were randomly assigned to the conditions. The questionnaire began with a scenario where participants were asked to imagine that they are shopping for a new personal computer at a local tech store and need to go into the store and speak with an employee before making their purchase. This scenario guided participants through their shopping journey from their arrival in the parking lot to the beginning of their interactions with an employee. Depending on their assigned conditions, the scenario described a large (vs. small) number of customers in the store and detailed the store either explicitly taking precautions (i.e., requiring masks, reminders to stay six-feet apart, plexiglass barriers) or that they are conducting "business as usual without any visible changes per the recommended regulations for operating during the pandemic" (see Appendix A). Next, participants gave a brief description of their initial impressions of the scenario and then continued to the measures where they indicated their level of perceived crowding and what their level of employee rapport and shopping satisfaction would be in this scenario.

3.1.3. Measures

Perceived human crowding, rapport, satisfaction with the shopping trip, and Covid threat beliefs were measured with existing scales. Perceived human crowding was measured with a four-item, widely-used scale (Blut and Iyer, 2019; Machleit et al., 1994; Mehta, 2013; Pons et al., 2014). Coefficient alpha reliability for the scale is 0.97. Customer-employee rapport was measured with a five-item scale adapted from Gremler and Gwinner's (2000) enjoyable interaction dimension with a coefficient alpha of 0.92. Satisfaction with the shopping trip was measured with four items (Machleit et al., 1994; Pons et al., 2014) resulting in a high reliability of coefficient alpha equal to 0.93. Covid threat beliefs (Kellaris et al., 2020) were measured with following items on a seven-point Likert scale: "Most people need to take Covid-19 more seriously," "My chance of getting the Covid-19 virus is low, so I'm not going to live in fear of this" (reverse coded), "I see too many people not taking adequate precautions to protect the community from the virus," "The government is over-reacting because the chance of getting the Covid-19 virus is low" (reverse coded), and "The threat of Covid-19 to the lives of my family and friends is relatively small" (reverse coded; coefficient alpha of 0.90). Four semantic differential format items were developed to measure perceived appropriateness of the retailer's Covid accommodations. Respondents were asked "To what extent to you feel the following: The precautions that this retailer is taking to prevent Covid-19 are: Too little/Too much, Unnecessary/Necessary, Has nothing to do with protecting my health/Good for protecting my health, Not essential/Essential" (Coefficient alpha reliability 0.82). See Appendix B for a complete list of the scale items.

3.1.4. Results

3.1.4.1. Post measures. A 2 (high vs. low density) x 2 (present vs. absent retailer precautions) between-subjects analysis of variance reveals no significant differences in reported ease of imagination across the scenario conditions ($F(1, 244) = .07$, $p = .798$).

Manipulation checks for density and retailer precaution are supported. When asked to estimate how many people were in the store, those in the high-density condition estimated greater numbers ($M = 65.43$) compared to those in the low-density condition ($M = 8.15$; $t(244) = 101.47$, $p < .001$). Likewise, when asked to what extent they believe the retailer took specific precautions against Covid-19, participants in the precautions present condition reported significantly stronger perceptions of precautions being taken ($M = 6.21$) versus those in the absent precautions condition ($M = 2.25$; $t(244) = 690.28$, $p < .001$).

3.1.4.2. Treatment effects. First, we examine the effects of the density and precaution manipulations on the three key dependent variables: perceived human crowding, employee-customer rapport, and satisfaction with the shopping trip. A MANOVA illustrates significant main effects of density (Wilks' Lambda = .17, $F(3, 242) = 400.93$, $p < .001$), precautions (Wilks' Lambda = .57, $F(3, 242)$ 59.91, $p < .001$), and a density × precautions interaction (Wilks' Lambda = .96, $F(3, 242) = 3.61$, $p < .05$). As anticipated, and consistent with prior literature, density significantly increases perceived crowding and significantly decreases satisfaction. We also find that density significantly decreases rapport. When precautions are taken, perceived crowding is not as high as when precautions are not taken, and both rapport and satisfaction are higher when precautions are present.

Regarding the interaction effects, crowding perceptions are equal in the low-density condition, regardless of precautions taken. However, when density is high, crowding perceptions are higher when no precautions are taken. Rapport and satisfaction both decrease as density increases, but both decrease much more severely when retailer precautions are not taken.

3.1.4.3. Effects of covid threat beliefs and precaution appropriateness. We

asked respondents to evaluate the appropriateness of the precautions taken by the retailer in the scenarios. We hypothesize that when actions of the retailer to protect shoppers from contracting the Covid-19 virus are viewed as appropriate, then the effect of having more shoppers in the store should be lessened. In other words, precaution appropriateness should moderate the effect of perceived human crowding on rapport, such that when the adjustments to the retail environment are deemed appropriate, shoppers will continue to interact and establish rapport with employees, even when the store is perceived as crowded. However, for those shoppers who are highly threatened by Covid-19, we hypothesize that even with appropriate retailer precautions, they are less likely to interact with store employees. In addition, the relationship between rapport and satisfaction should also be similarly moderated: while increased rapport increases satisfaction, this relationship should also be affected by precaution appropriateness and Covid threat beliefs. In short, we expect that the rapport/satisfaction relationship will be weakest when precaution appropriateness is low and Covid threat beliefs are high.

First, we demonstrate that perceived human crowding affects rapport, which in turn influences satisfaction. Using PROCESS Model 4 (Hayes, 2018) we find that perceived human crowding negatively affects customer-employee rapport (b = −0.25, p < .001) and both rapport (b = .63, p < .001) and perceived human crowding (b = −0.13, p < .001) significantly affect satisfaction with the shopping trip, supporting H1 - H3.

PROCESS Model 72 is used to test the moderating effects in H4 – H5. Looking at the perceived human crowding/rapport relationship we find the following: a direct effect of human crowding on rapport (b = -.10, p < .05), direct effects of perceived appropriateness (b = .53, p < .001) and Covid threat beliefs (b = −0.33, p < .001) and a significant three-way interaction (b = −0.05, F(7, 240) = 24.74, SE = .02, p < .05) of human crowding, perceived appropriateness, and Covid threat beliefs on rapport. Rapport is highest when Covid threat beliefs are low and perceived appropriateness is high, and this doesn't change at different levels of crowding; in other words, the level of crowding doesn't matter to those with low Covid threat beliefs and who believe that the retailer has appropriately taken precautions to protect shoppers. However, when shoppers believe that the retailer precautions are not appropriate, rapport does drop off significantly as crowding increases, even for those who believe that Covid is less of a threat. For those who strongly believe Covid is a threat, when perceived appropriateness is low, rapport will be low, regardless of the level of crowding. These individuals, however, will engage in rapport development when perceived appropriateness is high, but only when crowding is low; as crowding perceptions increase, rapport decreases, even when these shoppers believe that the retailer precautions are appropriate.

Looking at the rapport/satisfaction relationship, we find the following: a direct effect of rapport on satisfaction (b = .48, p < .001), a direct effect of human crowding on satisfaction (b = −0.11, p < .001), direct effects of perceived appropriateness (b = .22, p < .001) and Covid threat beliefs (b = −0.09, p < .01) and a significant three-way interaction (b = .03, F(8, 239) = 117.25, SE = .01, p < .05) of rapport, perceived appropriateness and Covid threat beliefs on satisfaction. The effect of rapport on satisfaction is a positive relationship in all cases, with only slight increases in satisfaction across levels of perceived appropriateness for those with low or medium levels of beliefs that Covid-19 is a threat. The relationships change for those with strong beliefs that Covid-19 is a threat. Here we see the highest levels of satisfaction only for those with high rapport and high perceived appropriateness. For those who believe Covid is a threat, rapport will result in lower levels of satisfaction in the situation when perceived appropriateness levels are lower.

3.1.5. Limitations

While the scenario method has limitations of being an artificial task, it does allow for experimental control and, thus, is a frequently employed method in the crowding research stream. Respondents, however, did need to imagine the level of crowding, rapport, and satisfaction that might have happened during the shopping trip, which is a limitation of the scenario method. Another limitation is our sample in that it was not randomly selected. Finally, the scenario involved a hypothetical computer purchase. It is unknown whether the findings will generalize to other purchase contexts, such as a grocery shopping or a service encounter.

3.2. Study 2

Study 2 was created to address the Study 1 limitations and examine the hypothesized relationships from an actual shopping episode recalled by participants. Study 2 has two purposes: first, to replicate the Study 1 experimental findings with those from an actual shopping trip, and second, to replicate and extend findings from prior literature within the Covid shopping context. In prior crowding literature we have seen the role of a number of variables, namely, *shopping values* (hedonic vs. utilitarian per Babin et al., 1994), *tolerance for crowding* (Eroglu et al., 2005a) and *emotions* (Machleit et al., 2000), and we examine these in Study 2 as a replication of prior literature. Because we are interested in the influence of the pandemic on shopping behavior, another variable added to Study 2 was *perceived vulnerability* (Duncan et al., 2009), a new factor whose importance began to increase as the threat of the pandemic and the lockdowns intensified (De Coninck et al., 2020; Lin, 2020).

Data were collected in mid-November 2020, five months after the first study and well into the crisis resulting from the pandemic. Four hundred fifty eight participants were recruited through Prolific. One individual was removed upon their request, leaving a final sample of 457 participants (M_{age} = 35.2, SD = 12.3; 49.9% females). Respondents were asked to think back to the last time they were shopping in a store and questions were asked to help them recall the shopping experience. They reported the store type (59.3% shopped at a grocery store, 15.5% department store, 5.7% wholesale club), shopping intention (purchase something specific (44.2%) or browse (7.2%) or both (48.4%)), if they made a purchase (96.5% did), whether they interacted with a store employee (61.5%), if they wore a mask (98.2% affirmative) and whether masks were required (91.0% affirmative).

3.2.1. Measures

Perceived human crowding, rapport, satisfaction with the shopping trip, and Covid threat beliefs were measured using the same scales as Study 1 with coefficient alpha values ranging from 0.77 to 0.93 for these measures. Also included were measures of spatial crowding (Machleit et al., 1994), hedonic and utilitarian shopping value (Babin et al., 1994), personal tolerance for crowding (Eroglu et al., 2005a), and ten emotions experienced while shopping (Izard, 1977). Coefficient alpha values ranged from 0.72 to 0.93. Perceived retailer precaution appropriateness was captured with: "Please rate the extent to which the store attempted to protect shoppers from Covid-19: Inadequate Precautions 1 2 3 4 5 6 7 Extensive Precautions." In addition, a single item perceived Covid vulnerability (Duncan et al., 2009) measure was included ("When you think about the possibility of catching the Covid-19 virus, how vulnerable do you feel?). See Appendix C for a complete list of the scale items.

3.2.2. Results

3.2.2.1. Replication of study 1. Like Study 1, the Study 2 analysis via PROCESS Model 4 supports H1 - H3 and demonstrates that perceived human crowding affects rapport, which, in turn, impacts on satisfaction. Perceived human crowding negatively affects customer-employee rapport ($b = -0.16$, $p < .01$) and both rapport ($b = .28$, $p < .001$) and perceived human crowding ($b = -0.09$, $p < .004$) significantly affect satisfaction with the shopping trip. Here the Study 1 results are replicated.

PROCESS model 72 was used to test the moderating effects of perceived appropriateness and Covid threat beliefs (H4 - H5; see Fig. 1) but, unlike Study 1, there were no significant interactions. Here, perceived appropriateness has a strong, direct effect on rapport (b = .39, p < .001) and dominates the effect of human crowding on rapport which is no longer significant (b = −0.07, p = .227). Perceived appropriateness also directly affects satisfaction (b = .07, p = .039), as do human crowding (b = −0.08, p = .014) and rapport (b = .26, p < .001). While the moderating tests of perceived appropriateness and Covid threat beliefs were not significant, it is notable that perceived appropriateness has positive, direct effects on rapport and satisfaction, indicating that it is important to shoppers that the retailer take precautions to prevent virus spread while shopping. H4 and H5 are not replicated in Study 2; instead of moderating effects, we find only direct effects of perceived appropriateness and Covid threat beliefs. These direct effects are certainly of importance to retailers, who should take note that perceived appropriateness of the precautions that they take to keep shoppers safe will have a direct effect on the rapport that shoppers have with store employees and on their overall satisfaction with their shopping experience.

While not all of the Study 1 results were verified completely by Study 2, we suspect that this is likely due to the time frame when the data were collected. Study 1 data were gathered early in the pandemic when many did not fully appreciate the threat that Covid presented. Yet, Study 2 data were collected at a height of the pandemic when the Covid threat could no longer be denied. Thus, our data were more highly skewed to those who believed that Covid is a threat.

3.2.2.2. Replication and extension: shopping values, tolerance for crowding and emotions. Do the relationships verified in prior crowding literature still hold in the new Covid shopping environment? In Study 2, we re-test several of these as a replication exercise, and include formal hypotheses only for those relationships which are new to the literature. Specifically, we examine three variables which have been previously shown to play a role in pre-pandemic crowding studies: shopping values, tolerance for crowding, and emotions, and we extend this literature to include the new relationships with customer-employee rapport that we hypothesize.

3.2.2.2.1. Shopping values. Shopping values are classified as Hedonic and Utilitarian (Babin et al., 1994; Jones et al., 2006). Their antecedents and outcomes are frequently examined under conditions of retail crowding (Chebat et al., 2014; Eroglu et al., 2005b). Hedonic shopping value refers to the enjoyment that the shopper experiences, while Utilitarian value concerns shoppers' success in completing their intended shopping tasks. Note that shopping value is different than shopping intention. While individuals may have, for an example, a hedonic shopping intention (they plan to go to the store simply for enjoyment and entertainment), shopping value is an evaluation of any shopping trip, regardless of intention. For example, someone might have an intention to go to the store to buy a specific item (a utilitarian intention), but can still evaluate that shopping trip on the value obtained on both hedonic and utilitarian shopping dimensions (shopping value). The inclusion of shopping values here has two objectives: to re-test the previously demonstrated impact of shopping values on crowding outcomes, and to explore the potential effect that customer-employee rapport has on these values. Because store employees are vital in supporting both types of shopping values, we expected that customer-employee rapport would lead to increased shopping value, which in turn, will promote increased satisfaction (Fig. 2).

H6a. As customer-employee rapport increases, hedonic shopping value will increase.

H6b. As customer-employee rapport increases, utilitarian shopping value will increase.

PROCESS model 81 was used to test the hypothesized relationships in Fig. 2. Considering these sequentially, we first see that human crowding perceptions significantly affect rapport (b = −0.16, p = .010), supporting H1. Next, rapport significantly influences hedonic shopping value (b = .41, p < .000) supporting H6a, and utilitarian shopping value (b = .15, p < .001) supporting H6b. Finally, all variables significantly affect shopping satisfaction: human crowding (b = −0.06, p = .041), rapport (b = .18, p < .001), hedonic shopping value (b = .17, p < .001), and utilitarian shopping value (b = .22, p < .001). Note that rapport has direct effects on shopping satisfaction beyond what is mediated by shopping values, indicating that the construct should be a key concern of retailers and their store managers.

Similar results are found when replacing human crowding with spatial crowding in the model. Spatial crowding perceptions significantly affect rapport (b = −0.27, p < .000, H1 supported) and, as above, rapport significantly influences hedonic shopping value (b = .41, p < .000, H6a supported) and utilitarian shopping value (b = .13, p = .001, H6b supported). Again, all variables significantly influence shopping satisfaction: spatial crowding (b = −0.19, p < .001), rapport (b = .17, p < .001), hedonic shopping value (b = .16, p < .001), and utilitarian

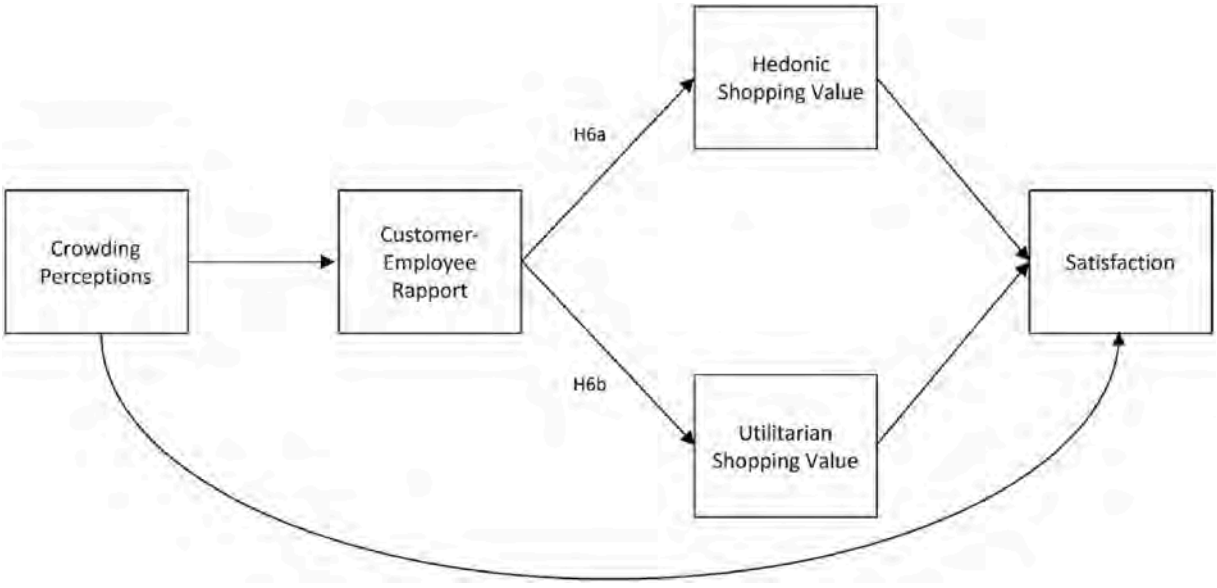


Fig. 2. Study 2 model.

shopping value (b = .18, p < .001). Overall, these results demonstrate the importance of customer-employee rapport in increasing positive shopping outcomes, and indicate the necessity of adding rapport to the nomological network of variables examined in the retail crowding literature.

3.2.2.2.2. Tolerance for crowding. Next, we attempt to replicate the effects of another construct that has been found to have significant effects in prior literature. Machleit et al. (2000) and Eroglu et al., (2005a) examined the "tolerance for crowding" that exists within individuals and demonstrated its moderating effect. Their research shows that for those with a low tolerance for crowds, the negative effects of human crowding on utilitarian shopping value (whether purchase goals were achieved), hedonic shopping value (whether the shopping trip was enjoyable), and satisfaction are stronger. In Study 2, we test for replication of the moderating effect of tolerance for crowding on this sequence of effects simultaneously using PROCESS model 59 where human crowding affects utilitarian shopping value, and both human crowding and utilitarian shopping value affect satisfaction, with tolerance for crowding moderating the three relationships. Here we find that tolerance for crowding does not moderate the effect between human crowding and utilitarian shopping value (p = .391) indicating that regardless of the ability of the individual to tolerate a crowd, the negative relationship between human crowding and utilitarian shopping value remains unchanged. Given that crowds impede one's ability to accomplish a task (utilitarian shopping value), it is understandable that a crowded store would negatively affect accomplishment of a task, regardless of one's ability to tolerate that crowd. Tolerance for crowding, however, does moderate the relationship between utilitarian shopping value and satisfaction (p = .004) such that satisfaction is highest for high levels of utilitarian shopping value and high ability to tolerate crowds (while satisfaction decreases significantly for those with a low ability to tolerate crowding).

Interestingly, in examining the significant moderating effect between human crowding and satisfaction (p < .001), there is a crossover effect for the different levels of tolerance for crowding. At high levels of human crowding, satisfaction is highest for those with high tolerance for crowding. But at low levels of human crowding, satisfaction is highest for those with a low tolerance for crowding. Said differently, the shoppers who are most satisfied are those who do not like crowds and find themselves in an uncrowded store. Yet, those who find themselves in an uncrowded store and can tolerate crowds are *less* satisfied than those who cannot tolerate. This is consistent with literature that has found that in some situations, there can be positive effects of having more people in an environment (Blut and Iyer, 2020; Kim et al., 2016).

To complete the analysis, when examining hedonic shopping value, tolerance for crowding continues to moderate (p < .001 for the relationship between human crowding and hedonic shopping value). There is a negative relationship between human crowding and hedonic shopping value, but for those who can tolerate crowds, human crowding has no effect on hedonic shopping enjoyment. Tolerance for crowding does not moderate the relationship between hedonic shopping value and satisfaction, which remains positive for all tolerance levels.

3.2.2.2.3. Emotions. We now turn our attention to replicating the findings surrounding crowding and the emotional reactions that shoppers experience in the store because this relationship has been demonstrated by various studies (Blut and Iyer, 2020; Byun and Mann, 2011; Jones et al., 2010). Among them, the Machleit et al. (2000) research reports significant correlations among human crowding perceptions, spatial crowding perceptions, and Izard's ten emotions across three studies and various store formats thus allowing for the most direct comparison with our Study 2 data. Table 1 compares the findings from Machleit et al. (2000) and our Study 2 data collected at the height of the pandemic. Note that most of the Study 2 correlations are near the range of correlations reported in prior research, except for human crowding and anger, spatial crowding and guilt, and, most notably, both types of crowding perceptions and fear. This is not surprising because the highly contagious and sometimes fatal nature of the coronavirus is likely to increase fear.

Table 1
Correlations between perceived crowding and emotion.

	Range from Prior Research		Study 2	
	HC	SC	HC	SC
Joy	n.s.	-.16 _ -.27	-.159**	-.268**
Interest	n.s.	n.s. _ -.17	-.019	-.178**
Surprise	n.s. _ .08	n.s.	.184**	.096*
Anger	.17 _ .25	n.s. _ .36	.376**	.373**
Disgust	n.s. _ .17	.16 _ .38	.213**	.285**
Contempt	n.s. _ .21	.21 _ .28	.154**	.219**
Shyness	n.s. _ .10	n.s. _ .11	.152**	.165**
Guilt	n.s. _ .10	n.s. _ .09	.125**	.202**
Sadness	n.s. _ .25	n.s. _ .34	.209**	.265**
Fear	n.s. _ .15	n.s._ .12	.270**	.241**

Note. (HC) human crowding perceptions; (SC) spatial crowding perceptions. **p < .01, *p < .05.

Next, we focus on replicating the relationship between emotions, shopping values and satisfaction found in prior literature. Eroglu et al. (2005a) examine crowding perceptions and emotions as antecedents to utilitarian and hedonic shopping values, which in turn, affect satisfaction. We complete a similar analysis, but also include rapport as an additional antecedent. Table 2 presents standardized coefficients obtained from LISREL 10.2 with the ten emotions, human and spatial crowding perceptions, and rapport as antecedents of utilitarian and hedonic shopping value, and the two shopping value variables as antecedents of satisfaction. High residuals exist between some of the antecedents and satisfaction, indicating additional significant relationships that were unaccounted for by the initial model; thus, interest, contempt, spatial crowding and rapport were included as additional predictors of satisfaction. This final model had excellent fit to the data (χ^2 = 30.33, df = 22, p = .11, RMSEA = .029, CFI = .99, RFI = .95, AGFI = .95). These results are similar to Eroglu et al. (2005a) in that contempt has strong, direct effects on satisfaction. Here we observe a significant negative effect of spatial crowding on satisfaction that was not observed in the Eroglu et al. research yet has been demonstrated extensively elsewhere (Jones et al., 2010; Kim et al., 2016; Li et al., 2009; Machleit et al., 1994). Likely, the pandemic has heightened sensitivity to the space surrounding the shopper and the ability to be able to spread out and stay six feet away from others in the store. Of particular note is the strong effects of customer-employee rapport on *all* three shopping outcomes: utilitarian shopping value, hedonic shopping value, and satisfaction. Clearly, employees can assist shoppers with accomplishing their shopping task, and make the shopping experience more pleasant and enjoyable, especially during these stressful times. Once again, we see

Table 2
Standardized coefficients.

	USV	HSV	SAT
Joy	0.00	**0.59**	
Sadness	**−0.22**	0.04	
Interest	**0.09**	−0.03	**0.13**
Anger	0.02	**−0.25**	
Guilt	0.00	**0.11**	
Shyness	0.07	−0.01	
Disgust	0.03	**0.14**	
Contempt	**−0.12**	**−0.09**	**−0.30**
Surprise	0.00	**0.17**	
Fear	0.02	−0.05	
Human crowding	−0.08	0.01	
Spatial crowding	**−0.14**	0.00	**−0.19**
Rapport	**0.15**	**0.11**	**0.28**
USV			**0.15**
HSV			**0.24**

Note. (USV) utilitarian shopping value; (HSV) hedonic shopping value; (SAT) shopping satisfaction. Bolded values significant at p < .05.

just how important rapport is to shoppers.

3.2.2.2.4. Perceived covid vulnerability. Extending this literature, we explore the role that perceived Covid vulnerability plays within the context of crowding. This variable refers to the chronic concern that an individual has regarding their susceptibility to an infectious disease (Duncan et al., 2009). Paralleling the analysis considering moderating effects of tolerance for crowding, we use PROCESS model 59 to test for the moderating effects of perceived vulnerability and find two strong moderating effects. First, we find that perceived vulnerability moderates the relationship between utilitarian shopping value and satisfaction ($p = .013$). While satisfaction increases as utilitarian shopping value increases, those who feel more vulnerable are less satisfied. In addition, vulnerability moderates the relationship between human crowding and hedonic shopping value ($p = .014$) such that hedonic shopping value is high across all levels of human crowding for those who do not feel vulnerable. However, for those who feel vulnerable, hedonic shopping value (enjoyment of the shopping experience) drops sharply as human crowding increases.

Finally, we explore whether the high correlations between crowding perceptions and fear observed in Table 1 could be due to, or exacerbated by, the level of vulnerability felt by shoppers. PROCESS Model 1 illustrates direct effects of human crowding ($b = .21$, $p < .001$) and of perceived vulnerability on fear felt while shopping ($b = .13$, $p < .001$) and a non-significant interaction effect of vulnerability with human crowding. However, for spatial crowding, there are both direct and interactive effects; spatial crowding ($b = .23$, $p < .001$) and perceived vulnerability ($b = .13$, $p < .001$) both have direct effects on fear, and they interact ($p = .028$) such that the relationship between spatial crowding and fear is much stronger for those with higher perceived vulnerability. We conclude that for the most vulnerable shoppers, offering enough space to social-distance in the store is a critical consideration for the retailer. Also note from Table 1 that the highest correlations are between crowding perceptions and anger. Could vulnerability play a role here as well? Indeed, vulnerability has a direct effect on anger ($b = .25$, $p < .001$) and there is an interactive effect of vulnerability with human crowding perceptions ($p = .010$) such that the relationship between human crowding and anger is stronger for those who feel more vulnerable. When considering spatial crowding perceptions, we find similar results: a direct effect of vulnerability on anger ($b = .31$, $p < .001$) and an interactive effect ($p = .042$) such that higher spatial crowding creates stronger anger for those who are feeling most vulnerable. While it is easy to understand why increased crowding creates higher levels of fear among shoppers during the pandemic, it is curious to understand why there is increased anger for the most vulnerable shoppers. Is this feeling due to other shoppers and their behaviors or due to reasons emanating from the retail store management? Considering the reasons for these feelings and the attributions shoppers make for them is a question for future research.

4. Discussion

We set out to explore potential changes that might ensue in the area of retail crowding effects in view of the significant behavioral changes observed in both consumers and retailers due to the pandemic disaster. To do so, we conduct two studies rooted in a well-established literature supporting the impact of retail crowding on customer satisfaction. Table 3 summarizes the findings.

In Study 1 we introduce a new construct into this research stream: customer-employee rapport. We consider the implications of the pandemic by examining shopper beliefs about the threat that Covid poses, and shopper perceptions about the appropriateness of the steps the retailer is taking to mitigate the threat. After manipulating density and in-store precautions in the Study 1 experiment, we demonstrate three different effects of human crowding perceptions on customer shopping satisfaction: direct, mediated and moderated. First, the direct and negative association shows that higher levels of human crowding result in lower levels of shopping satisfaction. Second, the mediated relationship indicates that customers' human crowding experience weakens their rapport with employees, ultimately lowering the overall shopping satisfaction. Finally, the moderated effects show that these relationships differ according to customers' a) perceptions about appropriateness of retailer precautions, and b) beliefs about the severity of threat that the pandemic presents. Notably, Study 1 introduces the notion that crowding can affect customer rapport and illustrates the importance of integrating this construct into future research that investigates in-store shopping activities.

Table 3
Summary of findings.

	Study 1	Study 2
Hypotheses		
H1	supported	supported
H2	supported	supported
H3	supported	supported
H4	supported	direct effects only, no moderating effects
H5	supported	direct effects only, no moderating effects
H6	n/a	supported
Replication of Prior Research		
Tolerance for Crowding moderates Crowding → Emotions		partially replicated
		replicated (stronger correlations for fear, anger, guilt)
Replication and Extension of Prior Research		
Crowding, Rapport, Emotions → HSV & USV → Satisfaction		replicated and extended to include rapport which is shown to have significant effects
Perceived Vulnerability to Covid		direct and moderating effects

Study 2, a recollection of an actual shopping trip, addresses the limitations of the Study 1 experiment, and aims to replicate its findings as well as replicate/extend some previously demonstrated crowding dynamics. Like Study 1, we see the strong impact of salesperson-customer rapport across all the relationships, be it human vs. spatial crowding or hedonic vs. utilitarian values. With respect to our replication efforts, we focus specifically on three findings from previous literature: shopping values (hedonic and utilitarian), tolerance for crowding and emotions. We re-test these findings to see if and how they hold in the current pandemic context. Confirming previous findings, our results show that both types of crowding influence the utilitarian shopping value and impede the ability of the shopper to accomplish their shopping task. Yet, unlike prior research, we find that neither crowding type impacts the hedonic shopping value, indicating that shopping enjoyment is not influenced by perceived crowding in the store. We speculate this is because most of the shopping done during the pandemic is utilitarian-based (nearly 93% of our sample said that the purpose of their shopping trip was to make a specific purchase). As a result, closer examination must be paid to the significant relationship that has been found in prior literature as our sample could not accurately reflect hedonic shopping experiences. Consistent with previous studies, perceived crowding, utilitarian and hedonic shopping value, and some emotions significantly affect shopping satisfaction, indicating that they should continue to be key concerns of a retailer. We highlight the newly-identified strong effect of rapport on satisfaction and again emphasize the need to consider this key shopping interaction in future research. Customer-employee rapport consistently shows strong effects across both studies and warrants attention by researchers and retailers.

With respect to tolerance for crowding, we find that within the pandemic context, tolerance for crowding still plays a significant moderating role, thus verifying past research that initially demonstrated the significance of this individual difference. It is important for retailers to understand the emerging sensitivities of their customer base and adapt the store environment and service levels accordingly. Not

considered in Study 2, however, is the demonstrated moderating role of store type and shopping intention (Blut and Iyer, 2020) which, we believe, could have an impact within the pandemic context and should be examined in future studies.

The last replication effort in Study 2 concerned the role of emotions in the shopping context, something that is well-established in the existing crowding literature. Here, we first examine the crowding perceptions → emotions relationship and find that most of the correlations are near the range of those reported in prior research, with two exceptions. Notable is the fact that both types of crowding perceptions (spatial and human) are highly correlated with fear and anger, and perceived vulnerability interacts with crowding to increase levels of these emotions. We then examine the emotions-shopping satisfaction link and see that these results are similar to Eroglu et al. (2005a) in that contempt has strong, direct effects on satisfaction. However, we do observe a significant negative effect of spatial crowding on satisfaction that was not found in the Eroglu et al. (2005a) study. Most likely, the pandemic has heightened sensitivity to the space surrounding the shopper and the ability to be able to spread out and stay six feet away from others in the store. Of particular note is the strong effects of customer-employee rapport on *all* three shopping outcomes, namely, utilitarian shopping value, hedonic shopping value, and satisfaction.

Finally, we introduce a new variable, perceived Covid vulnerability, and uncover its strong moderating role. First, we find that those who feel the most vulnerable are the individuals that will feel the highest levels of fear and anger while shopping. Vulnerability also moderates the relationship between utilitarian shopping value and satisfaction. While satisfaction increases as utilitarian shopping value increases, those who feel more vulnerable are less satisfied. In addition, vulnerability moderates the relationship between human crowding and hedonic shopping value such that hedonic shopping value is high across all levels of human crowding for those who do not feel vulnerable. While our findings regarding the direct link between human crowding and satisfaction is consistent with past research, the additional evidence we find regarding these mediated and moderated associations expand our knowledge in the crowding literature and opens new avenues of research.

4.1. Future research directions

The adverse impact of in-store human crowding on shopping satisfaction has been well-demonstrated in the marketing literature (Mehta, 2013). Our findings in the new pandemic context concur with it and, thus, need no elaboration. They do, however, take existing knowledge a step further by showing that this relationship can be mediated by another socially-rooted construct, namely, customer-employee rapport. Indeed, past research confirms the negative influence of human crowding on outcomes such as time spent in the store as well as the quality and quantity of customer social engagement with others in the venue (Mehta, 2013). We find that higher human crowding also affects customer-employee rapport, a new evidence in this research stream. Because rapport has been shown to affect a number of positive retail outcomes such as favorable attitudes, re-patronage intensions, loyalty (Biedenbach et al., 2011) and satisfaction (Gremler and Gwinner, 2000; Kim and Baker, 2019), we encourage additional research regarding this construct. It is clear that rapport, with its defining features of an enjoyable interaction and connection between two individuals (Gremler and Gwinner, 2000), touches an affective and emotional side of the customer-employee interaction, and may be able to counteract the demonstrated link between increased crowding and negative emotions. We contend that with its rich meaning and influence potential, the construct of rapport might be examined within the context of emotion-focused coping responses (Lazarus and Folkner, 1984) not only in the retail setting but across all sales milieu. A powerful construct that begets research attention, it is laden with important theoretical and managerial implications.

Another future research step in this realm is to explore the role of perceived control in the relationship between crowding and rapport because control is germane to both of them. Lack of perceived control lies at the heart of crowding: when density increases, so does the feeling of diminished control which then results in the crowdedness experience (Bateson, 1985). In retail situations where customers can predict and control events, higher control leads to higher predictability and, thus, higher probability of customer satisfaction (Solomon et al., 1985). Increasing perceived control in the retail environment can therefore serve to enhance customer satisfaction by working its way through both crowding and rapport. Further research can examine the underlying dynamics of these relationships which work to ultimately shape customer satisfaction.

The findings on the moderated relationships are particularly interesting. We introduce two variables that are prompted by the pandemic disaster: perceived Covid threat and perceived Covid vulnerability, both of which moderate relationships between crowding, rapport, and satisfaction. These results give rise to interesting future research questions that seek to uncover the explanation for these findings. Also of interest is the role that perceived control could play in these dynamics. Perceived control is a commonly used construct in the crowding literature and may help to explain the vulnerability created by Covid if a loss of control underlies the feelings of vulnerability.

Similarly, the significant moderator role of perceived appropriateness deserves more research attention. One potential inquiry is to explore this concept within the context of person-environment fit theory (Kristof-Brown et al., 2005) which focuses on the interaction between characteristics of the individual and the environment. The adequacy of this fit between a person and the environment can affect the person's motivation, behavior, and overall health. If the fit is optimal, the individual's functioning may be facilitated; if not, this may result in mis-adaptation. In the present context, which factors increase or decrease perceived appropriateness of retailer actions? Are these store environmental factors that are mostly under management control, are they individual (customer-based) factors, or are there other external factors that are outside of the retailer's reach? What is the relationship, if any, between perceived appropriateness and problem-focused coping response? What roles do prior expectations and familiarity with the retailer play in determining the valence and intensity of customers' appropriateness evaluations? The research options are wide open.

In conclusion, this study revisited the previously demonstrated impact of retail human crowding in the "new normal' conditions imposed by the Covid-19 pandemic, introduced new variables that have emerged due to the new business context shaped by the pandemic, and replicated some previous research findings in this light. We hope our study encourages additional re-examination of some of our established knowledge in view of the evolving changes, opens new avenues of research, and aids strategies for public health and retail management in the face of current and potential threats worldwide.

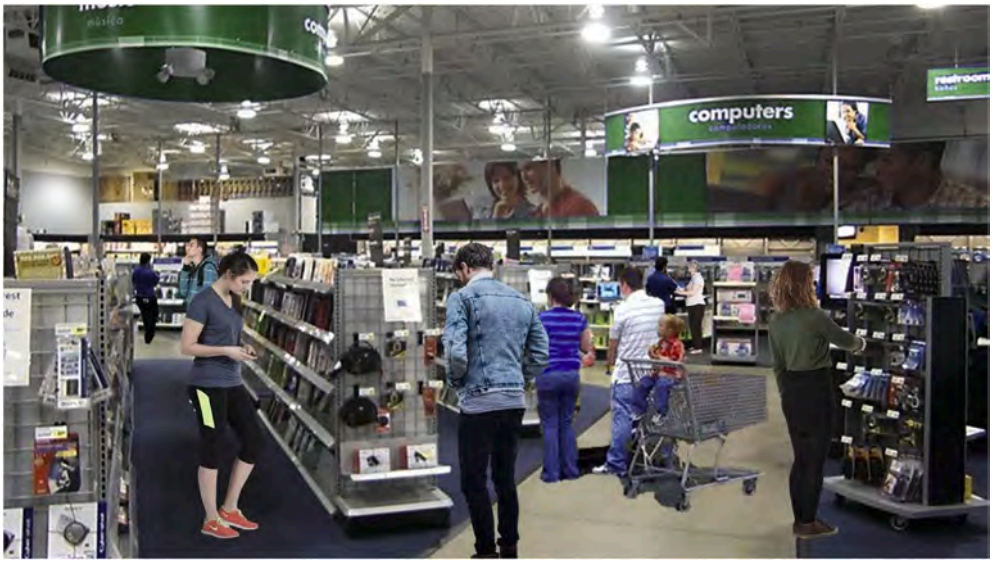
Declaration of competing interest

None.

Appendix: A. Study 1 Scenario Manipulations

A.1 High density, retailer precautions absent scenario

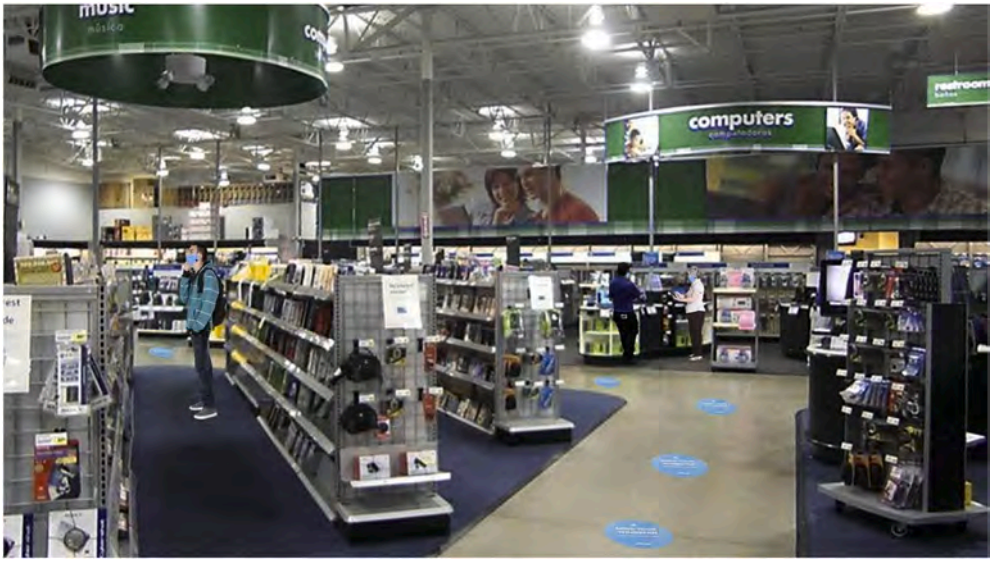
Imagine you are shopping for a new personal computer at a local technology store. You have done a bit of research but are still not sure which computer you should purchase. In order to make this decision, you have decided to go into the store and talk with an employee before making your final decision.



When you arrive at the store, you notice that the parking lot is nearly full which is surprising given the Covid-19 pandemic situation. Walking in, you stop at the door to read an advertisement for the store. In the front of the store, there is one employee who is rearranging shopping carts and another passing out advertisements. As you make your way through the busy aisles to the computer department in the back of the store, you notice multiple endcap sales as well as countertop displays in front of each of the customer-service agents and cashiers. The check-out lines also appear relatively long. The store looks to be functioning business as usual without any visible changes per the recommended regulations for operating during the pandemic. When you get to the computer department, you encounter a large number of other customers before locating an employee, who is adjusting a display. You go and ask for help. The employee is wearing a nametag and stands close to you as you begin to discuss your options for a computer.

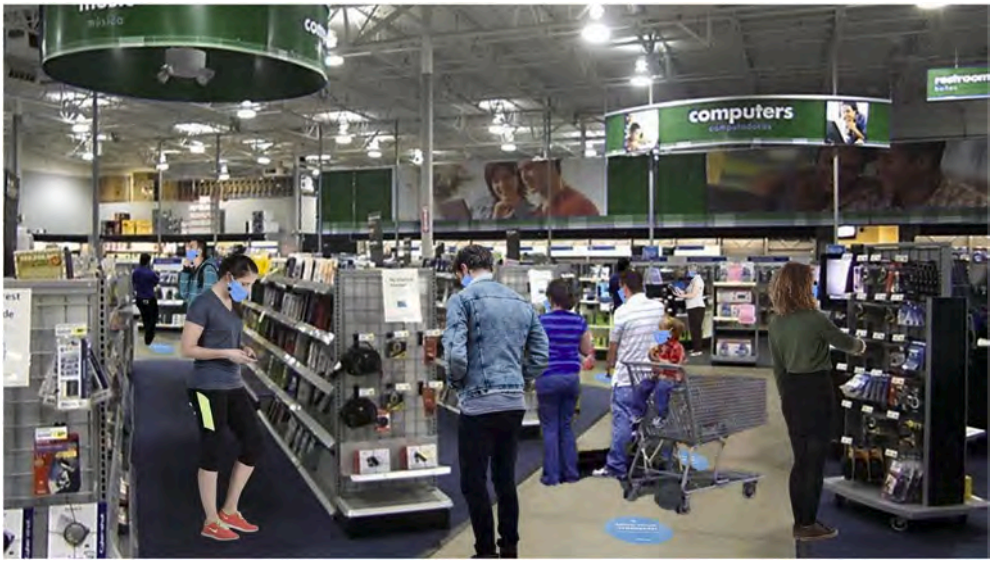
A.2 Low density, retailer precautions present scenario

Imagine you are shopping for a new personal computer at a local technology store. You have done a bit of research but are still not sure which computer you should purchase. In order to make this decision, you have decided to go into the store and talk with an employee before making your final decision.

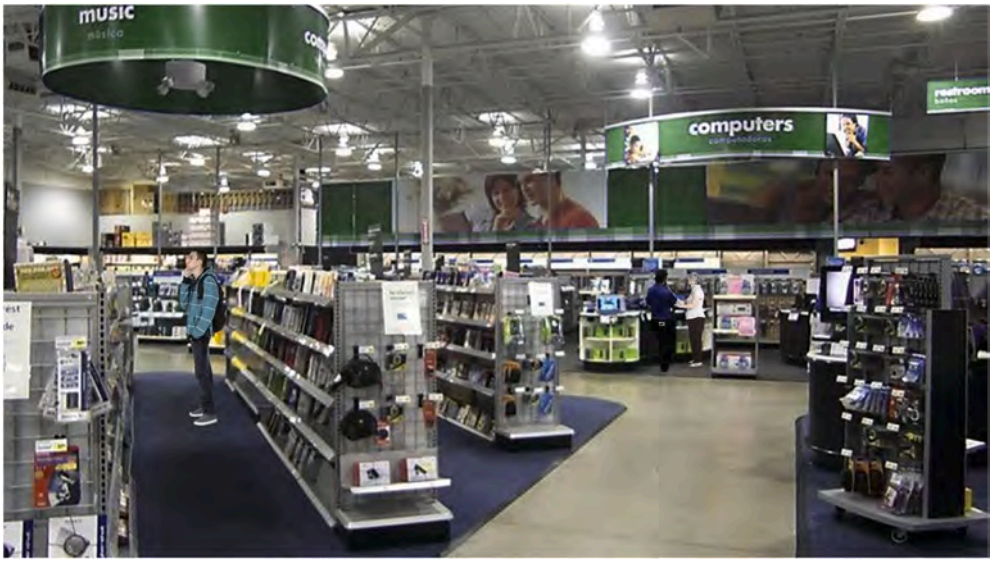


When you arrive at the store, you notice that the parking lot is nearly empty which is not surprising given the Covid-19 pandemic situation. Walking in, you stop at the door to read a sign saying that anyone in the store must wear a mask to protect both themselves and others around them and those who do not have a mask will be provided one. In the front of the store, there is one employee who is constantly wiping down shopping carts after each use and another passing out masks. As you make your way through the deserted aisles to the computer department in the back of the store, you notice that the floor has stickers reminding people to stay 6-feet apart at all times as well as clear plexiglass walls separating customer-service agents and cashiers from the customers. The check-out lines also appear relatively short. The store looks to be following all recommended regulations for operating during the pandemic. When you get to the computer department, you encounter almost no other customers before locating an employee, who is cleaning a display. You go and ask for help. The employee is wearing a mask and stands an appropriate distance from you as you begin to discuss your options for a computer.

A.3 High Density, Retailer Precautions Present Visual Stimuli



A.4 Low Density, Retailer Precautions Absent Visual Stimuli



Appendix B. Study 1 measurement items

Items	Reference	Alpha
Perceived Human Crowding:	Machleit et al. (1994)	.97
The store seemed very crowded to me.		
The store was a little too busy.		
There wasn't much traffic in the store during my shopping trip.*		
There were a lot of shoppers in the store.		
Customer-Employee Rapport:	adapted from Gremler and Gwinner (2000)	.92
To what extent could you see yourself interacting with this person?		
To what extent do you perceive your interaction with this person would be enjoyable?		
To what extent do you perceive this person would create a feeling of "warmth" in your relationship?		
To what extent do you perceive this person would relate well to you?		
To what extent do you perceive you will be comfortable interacting with this person?		
Shopping Satisfaction:	Machleit et al. (1994)	.93
I enjoyed shopping at the store.		
I was satisfied with my shopping experience at the store.		
Given a choice, I would probably not go back to the store.*		
I would recommend the store to other people.		
Covid Threat Beliefs:	Kellaris et al. (2020)	.90
Most people need to take Covid-19 more seriously.		
My chance of getting the Covid-19 virus is low, so I'm not going to live in fear of this*		
I see too many people not taking adequate precautions to protect the community from the virus		
The government is over-reacting because the chance of getting the Covid-19 virus is low*		
The threat of Covid-19 to the lives of my family and friends is relatively small*		
Perceived Appropriateness:		.82
The precautions that this retailer is taking to protect shoppers from Covid-19 are …		
Too little/Too much		
Unnecessary/Necessary		
Has nothing to do with protecting my health/Good for protecting my health		
Nonessential/Essential		

*Reverse-coded.

Appendix C. Additional measures used in study 2

Items	Reference	Alpha
Perceived Spatial Crowding:	Machleit et al. (1994)	.84
The store seemed very spacious.*		
I felt cramped shopping in the store.		
The store had an open, airy feeling to it.*		
The store felt confining to shoppers.		
Hedonic Shopping Value:	Babin et al. (1994)	.91
I continued to shop, not because I had to, but because I wanted to.		
Compared to other things I could have done, the time spent shopping was truly enjoyable.		
I enjoyed being immersed in exciting new products.		
I enjoyed this shopping trip for its own sake, not just for the items I may have purchased.		
I had a good time because I was able to act on the "spur of the moment."		
While shopping, I was able to forget my problems.		
Utilitarian Shopping Value:	Babin et al. (1994)	.85
I accomplished just what I wanted to on this shopping trip.		
I couldn't buy what I really needed.*		
While shopping, I found just the item(s) I was looking for.		
I was disappointed because I had to go to another store(s) to complete my shopping.*		
Personal Tolerance for Crowding:	Eroglu et al. (2005a)	.81
I avoid crowded stores whenever possible.*		
A crowded store doesn't really bother me.		
If I see that a store is crowded, I won't even go inside.*		
It's worth having to deal with a crowded store if I can save money on the things I buy.		
Differential Emotions Scale:	Izard (1977)	
Interest:		.73
Attentive		
Alert		
Interested		
Joy:		.93
Happy		
Delighted		
Cheerful		
Surprise:		.73
Astonished		
Surprised		
Disappointed		
Sadness:		.89
Sad		
Gloomy		
Depressed		

(*continued on next page*)

(*continued*)

Items	Reference	Alpha
Anger:		.85
Angry		
Mad		
Irritated		
Disgust:		.91
Disgusted		
Feeling of Distaste		
Disregard		
Contempt:		.84
Contempt		
Scornful		
Defiant		
Fear:		.87
Fearful		
Nervous		
Anxious		
Shame:		.79
Ashamed		
Bashful		
Shy		
Guilt:		.86
Guilty		
Repentant		
Blameworthy		
Perceived Appropriateness:		NA
Please rate the extent to which the store attempted to protect shoppers from Covid-19.		
Perceived Covid Vulnerability:	Duncan et al. (2009)	NA
When you think about the possibility of catching the Covid-19 virus, how vulnerable do you feel?		

*Reverse-coded.

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