




## The Effects of Human Crowding and Store Messiness on Consumer Visit Intention: A Post Pandemic Study

Syed Muhammad Fauzan Ali<sup>1</sup> \*, Karamatullah Husseiny<sup>2</sup>  and Aamir Adam<sup>3</sup> 

1-KASB Institute of Technology, Karachi, Pakistan

2-SZABUL, Karachi, Pakistan

3-Hamdard University, Karachi, Pakistan

\*Corresponding Author: [saiyedfauzan@gmail.com](mailto:saiyedfauzan@gmail.com)

### ABSTRACT

Attraction towards decorated and tidy places is an innate human trait. The visit to well-organised places is more frequent whether for shopping or regular outings. This study aims to determine how environmental cues, such as human crowding and disorganised isles and shelves, influence the consumer intention to visit a departmental store in Pakistan in the post-covid era. The study investigates the mediating role of consumer-perceived contamination. The data was gathered from 298 participants in Karachi, who frequently shopped at the departmental stores. The collected data was analysed using PLS-SEM, and the results indicated that store messiness has a negative impact on consumer visit intention, which is mediated by perceived contamination. The results also showed that human crowding has a direct negative relationship with consumer visit intention, regardless of the consumer perceived contamination. It was suggested that managers should focus on enhancing the environment of the store to provide an exclusive shopping experience to the consumers and make use of strategies centered on improving environmental cues to mitigate the challenges associated with perceived contamination in the post-covid era.

Article Type: Original

OPEN ACCESS



Copyright © 2023 The Authors

Received:  
9 September, 2022

Revised:  
7 October, 2022

Accepted:  
16 November, 2022

Published:  
31 March, 2023

**Keywords:** *human crowding, store messiness, perceived contamination, departmental stores, Pakistan, Covid-19*

**JEL Classification:** *M31, L81, P46*

**How to cite this article (APA):** Ali, S. M. F., Husseiny, K., & Adam, A. (2023). The Effects of Human Crowding and Store Messiness on Consumer Visit Intention: A Post Pandemic Study. *JISR management and social sciences & economics*, 21(1), 51–68.

<https://doi.org/10.31384/jisrmsse/2023.21.1.3>

## INTRODUCTION

The pandemic largely affected the retail industry, especially retail stores operating in a brick-and-mortar setup (Ali et al., 2020). Moreover, statistics have revealed that the size of the e-commerce market has increased to Rs. 96 billion in the first quarter of 2021 compared to the first quarter of 2020, which was Rs. 71 billion (Abbas, 2021). This implies that the covid-19 led people towards online purchases (Castro, 2018), and the emergence of applications like Panda Mart and Krave Mart have created challenges for brick-and-mortar grocery retailers (Rafique et al., 2022). Hence, to survive in the market, it has become crucial for brick-and-mortar departmental stores to bring the consumers back to the outlet by devising strategies to enhance the consumer experience.

In person, grocery shopping becomes a trial when the store is overcrowded, especially in the post-pandemic era. Moreover, the aisles in the departmental store are often untidy and disorganised, resulting in a messy ambience (Gupta & Coskun, 2021). Hence, the question that needs to be answered is whether overcrowded and messy store ambience fuels consumers' fear of returning to the brick-and-mortar setup for grocery shopping, especially with the emergence of a new Covid variant called omicron. This study was conducted in the post-pandemic era to investigate the role of crowded and messy store ambience in stimulating negative consumers' intention to visit and to examine the mediating effect of perceived contamination.

Previous research studies have explored the role of retail situational cues, including shelf displays, product packaging, and product attractiveness, in stimulating perceived contaminations and intention to purchase (Baek & Oh, 2021; Castro, 2018; Hazée & Vaerenbergh, 2020). However, there are limited studies on role of environmental cues like human crowding and store messiness in stimulating consumers' visit intention (Gupta & Coskun, 2021). Hence, this study significantly contributes to the existing literature and provides important managerial implications because departmental stores are often messy and crowded (Bossuyt et al., 2016). Previous studies have not explored the influence of these environmental cues on consumers' visit intention in the grocery context, especially in the post-pandemic era. Henceforth, this study addresses these gaps by exploring the influence of human crowding and store messiness on visit intention with the mediation effect of perceived contamination in the Pakistani context.

## OBJECTIVES

This study aims to investigate the impact of human crowding and store messiness on consumers' fear of returning to the brick-and-mortar setup. It

examines whether perceived contamination mediates the inverse relationship between store environmental cues (such as messiness) and consumer visit intention and also explores whether perceived contamination mediates the inverse relationship between human crowding and consumer visit intention.

## LITERATURE REVIEW

### Environmental cues

Retail outlet environmental cues stimulate consumers' intention and purchasing behavior (Gupta & Coskun, 2021). The environmental cues and atmospherics comprise retail outlet features which creates an image that attracts potential customers (Baek & Oh, 2021). These aspects directly contribute to consumer experience, which is crucial in developing a strong and positive brand perception among consumers (Parsad et al., 2019). On the contrary, human crowding and store messiness can cause potential challenges regarding consumer intention to purchase (Castaldo et al., 2021). In this study, we have adopted the social impact theory to support the role of human crowding and store messiness in stimulating consumer behavior. According to the social impact theory, the influence of perceived contamination is increased by three important factors: proximity, number of people, and strength (Coskun et al., 2020). Hence, social impact theory suggests that in the presence of human crowding, the inference of perceived contamination will be greater because consumers will most likely perceive that the product has been touched by others who might be infected, thus contaminating the product (Wann & James, 2018). Moreover, when the shelves are cluttered with products and appears messy, the contamination cue will be higher (Pantano et al., 2021).

### Human Crowding, Store Messiness, and Consumer Visit Intention

Past research suggests that negative environmental cues like human crowding, messiness, and type of products can lead to a negative experience which reduces the consumer's intention to purchase (Coskun et al., 2019; Lucia-Palacios et al., 2018). Likewise, previous psychological studies have revealed that stores having high crowding conditions result in excess of informational cues leading to cognitive overload, which disrupts the cognitive process of the consumer, thus reducing their ability to achieve the shopping task, stimulating anxiety and stress, and encouraging risk circumvention (Coskun et al., 2019; Lucia-Palacios et al., 2018). Moreover, In a disorganised and crowded store, consumers tend to have reduced perceptions regarding the products' quality, value, and service (Yang et al., 2022). Likewise, recent literature also suggests that the consumer's attention is often disrupted due to overcrowding and messiness

in the stores, which hinders their processing of the environment, resulting in reduced behavioural intention to visit (Moharana & Pradhan, 2019). Moreover, consumers have been found to complain that crowded departmental store implicates incompetent task execution by the frontline employees resulting in disorganised shelves and dissatisfied consumers. In contrast, task competence is important in increasing consumer satisfaction when stores are crowded and disorganised (Lucia-Palacios et al., 2020).

While some studies have found that store messiness negatively affects consumer visit intention, other studies have found no significant relationship between these variables. For instance, a study by Park and Han (2021) found that store messiness did not significantly impact consumer revisit intentions in a clothing store. The authors suggest that store managers should focus more on improving other factors, such as product quality and customer service, rather than solely addressing store cleanliness. These findings suggest that the relationship between store messiness and consumer visit intention may not always be negative and may vary across retail types. Hence, the following hypothesis has been postulated.

*H1: Human crowding reduces consumer visit intention.*

*H2: Messy shelves reduce consumer visit intention.*

According to Bossuyt et al. (2016), store messiness negatively influences consumer behavior, cognition, and emotions. Hence, their perceptions regarding the value and quality of the merchandise reduce. Likewise, messy stores harm the consumer fluency in information processing which further negatively influences the consumer pleasure and attractiveness of the store; hence, stimulating negative consumer behavior (Du et al., 2020). A study by W. G. Kim and Mattila (2018) investigated the effect of physical environmental cues on consumer behavior in a grocery store. They found that although human crowding was associated with negative emotions such as frustration and stress, it did not significantly effect consumer perception of contamination. The authors suggested that other environmental cues such as store cleanliness, layout, and design, may have a more significant impact on perceived contamination in grocery stores. Overall, these findings suggest that a range of factors may influence the relationship between human crowding and perceived contamination in grocery stores, and further research is needed to understand these complex relationships better.

However, through the social impact theory and past literature, we propose that due to human crowding, consumers perceive that others have touched and contaminated the product which will lead to an avoidance response from the consumer. Hence, such environments can promote a confused mind and alter

the direction of consumer destination (Li et al., 2021). Therefore, the following hypotheses have been postulated.

*H3: Human crowding in a grocery store increases the perceived contamination.*

*H4: A messy and disorganised grocery store increases the perceived contamination.*

### **Human Crowding, Store Messiness, and Consumer-perceived Contamination**

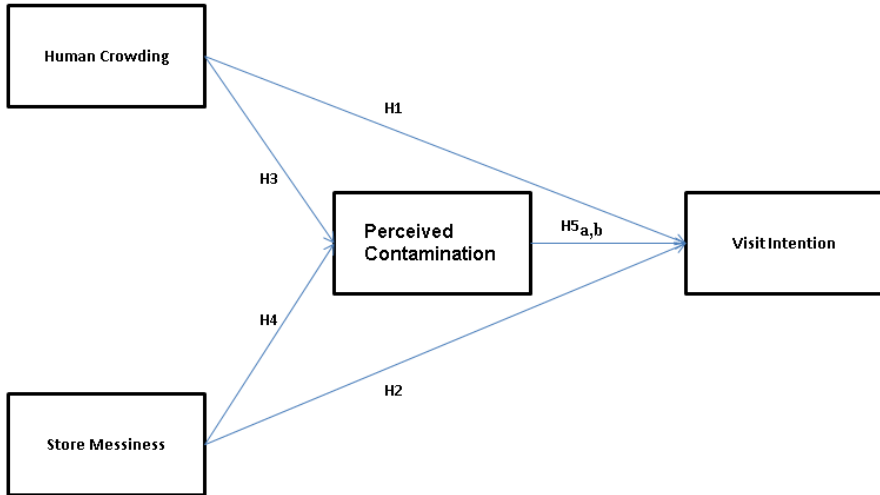
When there are a larger number of people at a store, based on the social impact theory, the inference for contamination is higher (Nunes et al., 2021). Thus, this would affect the consumer's evaluation process for that product, resulting in reduced intention to purchase (Meersseman et al., 2021; Tanwar & Nangia, 2018). Likewise, messy store shelves can also produce negative environmental cues, resulting in the consumer's reduced intention to purchase (Castaldo et al., 2021; Gupta & Coskun, 2021). Dangelico et al. (2022) studied the influence of the Covid-19 pandemic on consumer environmental concerns and purchase behaviour. The study revealed that the Covid-19 pandemic resulted in consumers growing attention towards environmental issues and was likely to shift towards sustainable purchasing. A study by J. Kim and Mattila (2021) found that perceived contamination significantly mediated the relationship between store cleanliness and consumer trust, ultimately influencing their intention to revisit the store. Similarly, a study by Furrer et al. (2020) found that perceived contamination fully mediated the relationship between crowding and evasive behaviour in departmental stores. These findings suggest that store managers should restrict over-crowding and improve cleanliness in order to address the customers' perceived contamination to enhance their visit intention.

While many studies have found perceived contamination to mediate the relationship between human crowding and consumer visit intention, there are also studies that have found this mediating role to be insignificant. For example, a study by J. Kim and Mattila (2021) found that while perceived crowding had a significant negative effect on consumer visit intention, perceived contamination did not mediate this relationship. The authors suggested that this may be because consumers are more concerned with the physical proximity of others (i.e., crowding) than perceived contamination in crowded situations. Therefore, while perceived contamination may be an important factor in certain retail settings, it may not always play a significant mediating role in the relationship between human crowding and consumer visit intention. Given the mixed results found in previous studies on the mediating role of perceived contamination in the relationship between human crowding and consumer visit intention and the relationship between store messiness and consumer visit intention, this

study aims to investigate whether perceived contamination mediates these relationships.

*H5a: Perceived contamination mediates the inverse relationship between human crowding and consumer visit intention.*

*H5b: Perceived contamination mediates the inverse relationship between store messiness and consumer visit intention.*



**Figure 1:** *Conceptual Framework*

## METHODOLOGY

An explanatory research approach was adopted for this study. We intended to assess the effects of human crowding and store messiness on consumer visit intention with the mediating effect of consumer-perceived contamination. A quantitative approach to the study was adopted, followed by a deductive method where hypotheses were postulated in light of the past literature and verified through data collection and analyses.

A convenience-based sampling technique was adopted, and 298 responses were collected from consumers living in Karachi who frequently visited top departmental stores such as Imtiaz Store, Canteen Store Department (CSD), Chase-Up, Naheed, Bin Hashim, and Hyderi Supermarket (HSM). The questionnaire was adopted from past literature (Gupta & Coskun, 2021), the face reliability was verified through a market and language expert, and inter-item reliability was checked using Cronbach's alpha. We used Smart PLS

to analyse the data using the Structure Equation Modeling technique. The convergent validity was checked to assess how closely the new scale relates to other variables. The discriminant validity was also assessed to ensure that the measures of the construct that should not be theoretically related are unrelated. Likewise, the model estimation relevance was evaluated using the stone-giesser's test (Geisser, 1974; Stone, 1974), and bootstrapping technique was utilised to assess the study's hypotheses and verify the relationships amid the latent variables of the constructs.

## DATA ANALYSIS AND RESULTS

### Respondent Profile

**Table 1.**

Respondent Frequencies and percentages

Item	Frequency	Percentage
<b>Gender</b>		
Male	176	59.07
Female	122	40.93
Total	298	100
<b>Age Bracket</b>		
25 - 35	98	32.88
35 - 45	156	52.35
45 - 55	32	10.74
55 and above	12	4.03
Total	298	100
<b>Which Departmental Store do you visit often?</b>		
Intiaaz Store	109	36.57
Chase-Up	97	32.55
Hyderi Supermarket	40	13.42
Naheed	25	8.39
Bin Hashim	14	4.70
CSD	13	4.37
Total	298	100

The survey was distributed among the respondents online using various social media platforms such as LinkedIn, Facebook, and Twitter. This helped the authors to reach a wide pool of untapped respondents cost-effectively. A link to the online questionnaire was shared along with a cover letter with the

respondents. A total of 500 respondents filled out the questionnaire; however, 298 questionnaires were deemed acceptable to conduct the analysis, while 202 were rejected due to response bias. These respondents were frequent visitors of departmental stores and clearly understood store environmental cues.

Table 1 reflects the respondent frequencies of the 298 responses collected. Male respondents were higher in frequency when compared to female respondents. Likewise, most of the respondents who completed the survey belonged to the age bracket of 35 to 45 years. Similarly, most of the respondents, who completed the study, were shopping from Imtiaz Supermarket. Next, the majority were those who frequently visited the Chase-Up departmental store. In the third position, in terms of frequency, were respondents shopping in Hyderi Supermarket. The remaining few were visiting Naheed, Bin Hashim, and CSD.

### Convergent Validity and Reliability

**Table 2.**

Outer loadings

	Human Crowding	Perceived Contamination	Store Messiness	Visit Intention
HC1	0.959			
HC2	0.957			
HC3	0.951			
HC4	0.920			
PC1		0.887		
PC2		0.910		
PC3		0.891		
PC4		0.915		
SM1			0.965	
SM2			0.957	
SM3			0.840	
SM4			0.845	
VI1				0.848
VI2				0.919
VI3				0.741

The outer model was assessed in the first phase of the structured equation modelling. The purpose is to examine how well the scale items, i.e. the questions load on the theoretical construct. Hence, we assessed the reliability of individual scale items using outer loadings against the acceptable threshold value, i.e. 0.70 (J. Hair et al., 2014).



Table 2 indicates that all the items load on their respective variables, and the values are well above the acceptable threshold value, i.e. 0.70. Hence, the first criteria to assess the reflective outer model was met.

### Table 3.

Internal consistency and convergent validity

	Cronbach Alpha	Composite Reliability	(AVE)
Human Crowding	0.962	0.972	0.897
Store Messiness	0.945	0.947	0.816
Visit Intention	0.796	0.876	0.704
Perceived Contamination	0.922	0.945	0.811

In the second step in assessing the outer model, checked the internal consistency using Cronbach's alpha and Composite Reliability. We evaluated the reliability based on the interrelationship among the observed items. Here, the values are systematised according to their indicator's separate reliability, and the higher value indicates higher reliability levels (J. Hair et al., 2014). Likewise, the convergent validity was also checked using average variance extracted (AVE) to assess the correlation of various indicators of the construct which are in agreement. Hence, values higher than 0.50 were deemed acceptable to confirm convergent validity (Henseler et al., 2009).

Table 3 reflects the values verifying internal consistency through Cronbach's alpha and Composite Reliability and convergent validity through AVE. The values indicate that convergent validity and internal consistency for the outer model are confirmed.

### Discriminant Validity

In the third step, the degree to which the construct empirically differed from one another was assessed to confirm the discriminant validity. We utilised two major criteria to check the outer model's discriminant validity, i.e. Fornell and Larcker and HTMT criterion (Fornell & Larcker, 1981; Henseler et al., 2015).

In Table 4, we matched the square root of the AVE, i.e. shown in diagonal, with the correlation of the latent constructs. A latent construct explains the variable of its indicators much better when compared with other latent constructs. Hence, the values shown in diagonal, i.e. AVE for each construct, were more significant than the correlations of other constructs (J. Hair et al., 2014). Therefore, discriminant validity was established through the first criterion.

In the final stage of assessing discriminant validity, we used the HTMT criterion. Henseler et al. (2009) proposed that this criterion was far superior

**Table 4.**

Fornell and Larcker Criterion

	<b>Human Crowding</b>	<b>Store Messiness</b>	<b>Visit Intention</b>	<b>Perceived Contamination</b>
Human Crowding	<b>0.947</b>			
Store Messiness	0.466	<b>0.904</b>		
Visit Intention	-0.198	0.053	<b>0.839</b>	
Perceived Contamination	0.141	0.352	0.458	<b>0.901</b>

**Table 5.**

Heterotrait-Monotrait Ratio (HTMT)

	<b>HC</b>	<b>SM</b>	<b>VI</b>	<b>PC</b>
Human Crowding				
Store Messiness	0.569			
Visit Intention	0.221	0.171		
Perceived Contamination	0.185	0.268	0.491	-

HC: human crowding, SM: store messiness, VI: visit intention, and PC: perceived contamination

through the Monte Carlo simulation study due to its capabilities to secure higher sensitivity and specificity rates when compared to Fornell and Larcker. Any value closer to 1 indicates a lack of discriminant validity. Table 5 indicates that all values are less than 0.90 i.e. the threshold value as proposed by Gold et al. (2001). Hence, the HTMT criterion also confirmed discriminant validity for the outer model.

## Hypothesis Testing

Lastly, we applied a non-parametric technique called bootstrapping to assess the statistical significance of the path coefficients. The p-value <0.05 was deemed satisfactory to confirm the validity of the hypothesis (J. F. Hair et al., 2022).

## Findings

The results in Table 6 show that three of our hypotheses were accepted, while three were rejected. The beta value of -0.270 indicates a negative relationship between human crowding and consumer visit intention in the departmental stores of Pakistan. This means that as human crowding increases, consumer

**Table 6.**  
Bootstrapping - T-value, and p-value

	$\beta$ - values	T- value	p- value	Deci- sion
Human crowding -> Visit Intention (H1)	-0.270	4.246	0.000	Accepted
Store Messiness -> Visit Intention (H2)	-0.005	0.069	0.945	Rejected
Human Crowding -> Perceived Contamination (H3)	0.016	0.334	0.739	Rejected
Store Messiness -> Perceived Contamination (H4)	0.357	2.867	0.005	Accepted
Human Crowding -> perceive contamination -> Visit intention (H5a)	-0.007	0.336	0.738	Rejected
Store messiness -> perceive contamination -> Visit intention (H5b)	-0.178	2.958	0.003	Accepted

visit intention decreases. The p-value of 0.000 suggests that this negative relationship is statistically significant. However, the beta value of 0.016 suggests a weak positive relationship between human crowding and consumer-perceived contamination. This means that as human crowding increases, consumer-perceived contamination also increases slightly, but this relationship is not strong. The p-value of 0.739 indicates that this relationship is not statistically significant. Therefore, we cannot conclude that there is a significant relationship between human crowding and consumer-perceived contamination. These findings suggest that other factors may be more important in influencing consumer-perceived contamination in this context.

The beta value of -0.005 indicates a very weak negative relationship between store messiness and consumer visit intention. This suggests that as store messiness increases, consumer visit intention may decrease slightly. The p-value of 0.945 indicates that this relationship is not statistically significant, suggesting that it may have occurred by chance. Therefore, we cannot conclude that there is a significant relationship between store messiness and consumer visit intention in the departmental stores of Pakistan. Other factors such as product availability, store layout, and customer service may influence consumer visit intention more in this context. However, the beta value of 0.357 suggests a moderate positive relationship between store messiness and consumer-perceived contamination. This indicates that as store messiness increases, consumer-perceived contamination also increases moderately. The p-value of 0.005 is statistically significant, indicating that this relationship is not likely to have occurred by chance. These findings suggest that during the pandemic, store messiness can significantly influence consumer perceived contamination. It is; therefore, important for store managers to prioritise cleanliness and organisation in order to reduce consumer concerns about contamination and

improve their shopping experiences.

Likewise, the beta value of -0.007 and p-value of 0.738 suggests that the indirect effect for the relationship between human crowding and consumer visit intention with perceived contamination as a mediator is not statistically significant. However, the direct relationship between human crowding and consumer visit intention was statistically significant and inverse. This means that as human crowding increases, consumer visit intention decreases, even after controlling for the effect of perceived contamination.

Taken together, these findings suggest that the direct effect of human crowding on consumer visit intention is more important than the indirect effect of human crowding on consumer visit intention through perceived contamination. Therefore, store managers in the grocery stores of Pakistan may need to focus on reducing human crowding in order to improve consumer visit intention, regardless of whether perceived contamination plays a mediating role in this relationship.

The beta value of -0.178 and p-value of 0.003 suggest that the indirect effect for the relationship between store messiness and consumer visit intention with perceived contamination as a mediator is statistically significant. This means that perceived contamination mediates the relationship between store messiness and consumer visit intention. As the beta value is negative, this indicates that as store messiness increases, perceived contamination increases, leading to a decrease in consumer visit intention.

Interestingly, the direct relationship between store messiness and consumer visit intention was statistically insignificant, which means that store messiness alone may not significantly impact consumer visit intention. These findings suggest that store managers may need to focus on maintaining clean and well-organized stores to reduce perceived contamination and improve consumer visit intention.

## DISCUSSION

The following section discusses in detail the results of the study and derives a conclusion along with implications of the research and also suggests future directions for researchers willing to explore the topic further.

In the past, crowded, disorganized, and cluttered stores were considered a consumer engagement strategy adopted by retailers like Walmart because it gave the consumers a perception of lower pricing (Underhill, 2011). However, in the post-covid-19 era would the same strategy work? This study intended to answer this question. The study found that during Covid-19, while crowded

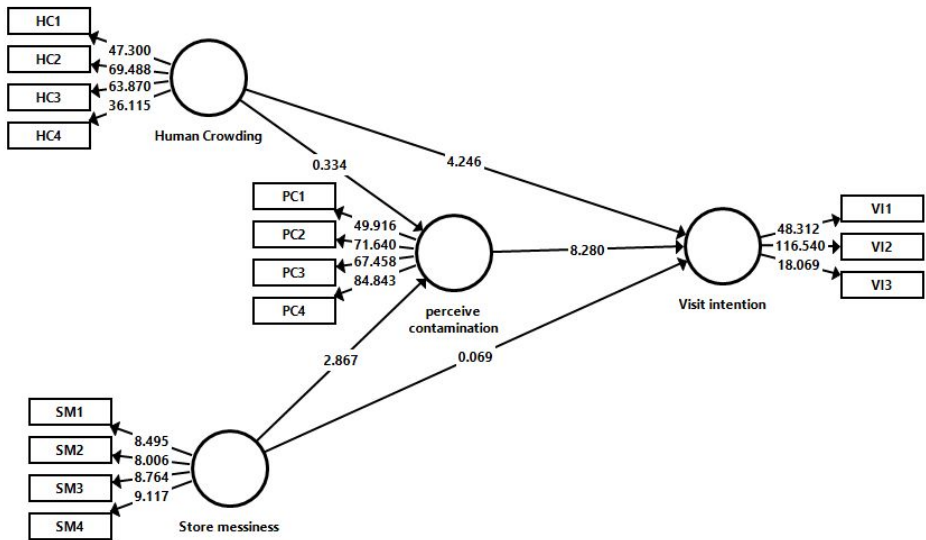


Figure 2: Path Model

stores had a significant negative effect on consumers' intention to visit, the effect of disorganisation alone was not statistically significant. In other words, consumers were less likely to visit a grocery store if it was crowded. Still, the level of disorganisation alone did not significantly impact their intention to visit. This study findings supported hypothesis (H1), which stated that crowded stores negatively affect consumers' intention to visit, consistent with Moharana and Pradhan (2019) findings that overcrowding and messiness in stores can disrupt consumers' attention and processing of the environment, resulting in reduced visit intention. However, hypothesis (H2) was not supported, which aligns with Park and Han (2021) study that found store messiness did not significantly impact consumers' revisit intentions in a clothing store.

Furthermore, the results of this study indicated that Hypothesis (H3), which proposed that human crowding has a significant positive relationship with consumer-perceived contamination during the Covid-19 period, was not supported. This means that during the pandemic, human crowding did not significantly influence consumers' perception of contamination in grocery stores. These findings are in line with the findings of W. G. Kim and Mattila (2018). However, Hypothesis (H4), which stated that store messiness has a significant positive relationship with perceived contamination, was supported. These results are congruent with the findings of Bossuyt et al. (2016). This suggests that store messiness during the pandemic is likely to increase consumer's

perceived contamination levels in grocery stores. These findings can have significant implications for grocery store managers who must pay attention to the cleanliness and tidiness of their stores during the pandemic to alleviate consumers perceived contamination levels.

The results suggest that perceived contamination did not mediate the relationship between human crowding and consumer visit intention, meaning that the perceived contamination did not explain the negative effect of human crowding on consumer visit intention. Hence, hypothesis (H5a) was rejected. This result could indicate that other factors may explain the negative impact of human crowding on consumer visit intention. These findings are congruent with the findings of [J. Kim and Mattila \(2021\)](#). On the other hand, the mediating role of perceived contamination was supported in the relationship between store messiness and consumer visit intention. Hence, our hypothesis (H5b) was accepted. These findings align with the findings of [Furrer et al. \(2020\)](#). Overall, these findings indicate that the impact of environmental factors such as crowding and messiness on consumer behaviour can be complex. The underlying mechanisms may differ depending on the specific context.

## CONCLUSION

Messy stores and human crowding have become a considerable challenge for departmental stores operating in a brick-and-mortar setup, especially in the post-covid-19 era. Online applications such as Panda Mart, Airlift Express, and Krave Mart have further increased the challenge of staying competitive in this fast-paced industry. Crowded stores have become so common today in Pakistan, negatively affecting the consumer's intention to visit the department store in person. Perceived contamination due to Covid-19 has increased the negative effects of store messiness. Therefore, stores should focus on providing consumers with a clean and organised environment and enhancing consumer experience during the purchase process. Store managers should effectively control the flow of human traffic by redesigning the architectural features. Likewise, the stores should enhance the environmental cues to provide a memorable experience to the consumers.

## POLICY RECOMMENDATIONS

This study findings have some managerial recommendations for brick-and-mortar departmental stores in Pakistan. This would affect the consumer visit intention and result in higher sales. To address the issue of crowded and disorganised stores, managers can take following steps:

- **Implement physical distancing measures:** Store managers can set up markers or barriers to ensure that customers maintain a safe distance from each other. This can be achieved by creating one-way aisles or limiting the number of people allowed in the store simultaneously.
- **Enforce mask and glove usage:** Store managers can require that customers and staff wear masks and gloves to prevent the spread of the virus. This can be achieved by providing masks and gloves at the entrance of the store, or by denying entry to those who refuse to wear them.
- **Increase cleaning and sanitation protocols:** Store managers can increase the frequency of cleaning and sanitation to ensure that surfaces are disinfected regularly. This can be achieved by assigning staff to clean high-touch surfaces such as shopping carts, baskets, and counters, using disinfectant sprays or wipes.
- **Promote online ordering and delivery:** Store managers can encourage customers to order online and have their groceries delivered to their homes. This can be achieved by offering incentives such as free delivery or discounts on online orders.
- **Improve store layout and design:** Store managers can redesign their stores to reduce congestion and improve traffic flow. This can be achieved by rearranging shelves, widening aisles, and improving the overall layout of the store.

By implementing these strategies, store managers can reassure customers and promote a safer shopping environment, leading to increased foot traffic and higher sales. Additionally, managers can communicate these measures to customers through in-store signage, social media, and email to reduce the perception of contamination and improve customer confidence in the safety of the store.

## LIMITATIONS AND IMPLICATIONS

Besides our contributions to the research around the subject, this study has a few limitations. The study has only targeted the population from Karachi, Pakistan, and our investigation is focused on departmental stores. Future research can include other cities and test the framework in the retail clothing industry. Likewise, future studies can also assess the effects of perceived contamination on the time a consumer spends in the store. Lastly, this study will serve as a yardstick for managers and policymakers in the departmental store business to enhance their market growth strategically.

## CONFLICT OF INTEREST STATEMENT

The authors have declared no conflict of interest.

## REFERENCES

- Abbas, G. (2021). *Pakistan's e-commerce market size was up Rs25bn YoY in Q1FY21*. [online]. Retrieved from <https://profit.pakistantoday.com.pk/2021/02/11/pakistans-e-commerce-market-size-up-rs25bn-yoy-in-q1fy21/>
- Ali, S., Khalid, N., Javed, H. M. U., & Islam, D. M. Z. (2020). Consumer Adoption of Online Food Delivery Ordering (OFDO) Services in Pakistan: The Impact of the COVID-19 Pandemic Situation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 10–10. <https://doi.org/10.3390/joitmc7010010>
- Baek, E., & Oh, G. E. G. (2021). Diverse values of fashion rental service and contamination concern of consumers. *Journal of business research*, 123, 165–175. <https://doi.org/10.1016/j.jbusres.2020.09.061>
- Bossuyt, S., Kenhove, P. V., & Bock, T. D. (2016). A dirty store is a cost forever: The harmful influence of disorderly retail settings on unethical consumer behavior. *International Journal of Research in Marketing*(1), 225–231. <https://doi.org/10.1016/j.ijresmar.2015.12.005>
- Castaldo, S., Penco, L., & Profumo, G. (2021). Cruising in the COVID-19 pandemic era: does perceived crowding really matter? *International Journal of Contemporary Hospitality Management*, 33(8), 2586–2612. <https://doi.org/10.1108/IJCHM-07-2020-0688>
- Castro, I. A. (2018). Customer purchase intentions and choice in food retail environments: a scoping review. *International journal of environmental research and public health*, 15(11), 24–93. <https://doi.org/10.3390/ijerph15112493>
- Coskun, M., Gupta, S., & Burnaz, S. (2019). Human crowding and store messiness: Drivers of retail shopper confusion and behavioral intentions. *Journal of Consumer Behaviour*, 18(4), 313–331. <https://doi.org/10.1002/cb.1772>
- Coskun, M., Gupta, S., & Burnaz, S. (2020). Store disorderliness effect: shoppers' shoppers' competitive behaviors in a fast-fashion retail store. *International Journal of Retail & Distribution Management*, 48(7), 763–779. <https://doi.org/10.1108/IJRDM-06-2019-0193>
- Dangelico, R. M., Schiaroli, V., & Fraccascia, L. (2022). Retrieved from <https://doi.org/10.1002/sd.2322> <https://doi.org/10.1002/sd.2322>
- Du, W., Fang, D., Ye, Y., & Qiu, S. (2020). The influence of disorderly environment on consumers' reference for boundaries: The mediating effect of personal control. *Journal of Contemporary Marketing Science*, 3(1), 17–31.
- Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382–388. <https://doi.org/10.1177/002224378101800313>
- Furrer, O., Liu, B. S. C., & Sudharshan, D. (2020). The effect of store atmospherics and



- crowding on customer behavior: Mediating role of perceived contamination. *Journal of Retailing and Consumer Services*, 55, 102102–102102. <https://doi.org/10.1016/j.jretconser.2020.102102>
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*(1), 101–107. <https://doi.org/10.1093/biomet/61.1.101>
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational organisational capabilities perspective. *Journal of management information systems*, 18(1), 185–214. <https://doi.org/10.1080/07421222.2001.11045669>
- Gupta, S., & Coskun, M. (2021). The influence of human crowding and store messiness on consumer purchase intention-the role of contamination and scarcity perceptions. *Journal of Retailing and Consumer Services*, 61. <https://doi.org/10.1016/j.jretconser.2021.102511>
- Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles: SAGE Publications.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd Ed ed.; and others, Ed.). Sage: Thousand Oaks.
- Hazée, S., & Vaerenbergh, Y. V. (2020). Customers' Customers' contamination concerns: an integrative framework and prospects for service management. *Journal of Service Management*, 32(2), 161–175.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. of the Acad. Mark. Sci.*, 43, 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *New challenges to international marketing*.
- Kim, J., & Mattila, A. S. (2021). The mediating role of perceived cleanliness on the relationship between store design and trust. *Journal of Business Research*, 126, 74–82. <https://doi.org/10.1016/j.jbusres.2021.04.011>
- Kim, W. G., & Mattila, A. S. (2018). Understanding the effect of physical environmental cues on consumer behavior in grocery stores. *Journal of Retailing and Consumer Services*, 41, 177–185. <https://doi.org/10.1016/j.jretconser.2017.12.009>
- Li, X., Dahana, W. D., Ye, Q., Peng, L., & Zhou, J. (2021). How does shopping duration evolve and influence buying behavior? The role of marketing and shopping environment. *Journal of Retailing and Consumer Services*, 62, 102607–102607. <https://doi.org/10.1016/j.jretconser.2021.102607>
- Lucia-Palacios, L., Pérez-López, R., & Polo-Redondo, Y. (2018). Can social support alleviate stress while shopping in crowded retail environments. *Journal of Business Research*, 90, 141–150.
- Lucia-Palacios, L., Perez-Lopez, R., & Polo-Redondo, Y. (2020). How situational circumstances modify the effects of frontline employees' competences on customer satisfaction with the store. *Journal of Retailing and Consumer Services*, 52, 101905–

- 101905.
- Meersseman, E., Geuens, M., & Vermeir, I. (2021). Take a Bite! The Effect of Bitten Food in Pictures on Product Attitudes, Purchase Intentions, and Willingness to Pay. . *Foods*, *10*(9), 2096.
- Moharana, T. R., & Pradhan, D. (2019). Shopping value and patronage: when satisfaction and crowding count. *Marketing Intelligence & Planning*, *38*(2), 137–150.
- Nunes, M. F., Park, C. L., & Shin, H. (2021). Corporate social and environmental irresponsibilities in supply chains, contamination, and damage of intangible resources: A behavioral approach. *International Journal of Production Economics*, *241*, 108275–108275.
- Pantano, E., Pizzi, G., Bilotta, E., & Pantano, P. (2021). Shopping with (out) distancing: modeling the personal space to limit the spread of contagious disease among consumers in retail stores. *Journal of Marketing Management*, 1–19.
- Park, J. Y., & Han, J. K. (2021). The impact of in-store shopping experiences on the store loyalty of apparel retail customers. *Sustainability*, *13*(3), 1081–1081. <https://doi.org/10.3390/su13031081>
- Parasad, C., Prashar, S., Vijay, T. S., & Sahay, V. (2019). Role of In-Store Atmospherics and Impulse Buying Tendency on Post-Purchase Regret. *Journal of Business & Management*, *25*(1).
- Rafique, A., Akram, N., Talha, U. S. M., Khan, M. U., Zia, R., & Aamir, M. (2022). Retrieved from <https://www.researchsquare.com/article/rs-1716250/latest.pdf>
- Stone, M. (1974). Cross-Validatory Choice and Assessment of Statistical Predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, *36*(2), 111–133. <https://doi.org/10.1111/j.2517-6161.1974.tb00994.x>
- Tanwar, D., & Nangia, R. (2018). Retail store atmospherics in India. *IAHRW International Journal of Social Sciences Review*(6), 2049–2051.
- Underhill, P. (2011). *What women want: The science of female shopping?* Simon and Schuster.
- Wann, D. L., & James, J. D. (2018). *Sports fans: The psychology and social impact of fandom*. Routledge.
- Yang, J., Luo, J. M., & Yao, R. (2022). How fear of COVID-19 affects the behavioral intention of festival participants-A case of the HANFU Festival. *International Journal of Environmental Research and Public Health*, *19*(4). <https://doi.org/10.3390/ijerph19042133>