

# **Socially responsible consumers and stockpiling during crises: the intersection of personal norms and fear**

## **Citation**

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# **Socially responsible consumers and stockpiling during crises: the intersection of personal norms and fear**

## **Abstract**

*Purpose* – Urging people to avoid stockpiling was a common declaration made by governments during the COVID-19 pandemic outbreak, yet empty supermarket shelves and supply shortages of basic products were observed worldwide. This study aims to: (a) identify the factors that activate consumer personal norms towards socially responsible behaviours, specifically resisting stockpiling, and (b) examine how fear moderates the link between personal norms and consumer engagement in stockpiling during public crises.

*Design/methodology/approach* – This study recruited a sample of US consumers who were responsible for household grocery shopping during the COVID-19 pandemic. A total of 593 individuals participated in the study, and the collected data were analysed using structural equation modelling.

*Findings* – The results show that awareness of the negative consequences of stockpiling and a sense of personal responsibility for those consequences activate personal norms towards responsible shopping during public crises. However, perceived fear has the opposite effect, encouraging stockpiling. Additionally, fear weakens the negative relationship between personal norms and stockpiling.

*Originality* – This study extends the norm activation model and indicates that personal norms may not always promote responsible behaviours when fear is high. It is unique in that it sheds light on non-mainstream responsible consumption behaviours (e.g., resisting stockpiling), and the interaction between consumption and social responsibility.

*Keywords:* Pride; Responsible consumer behaviour; Socially responsible consumption; Stockpiling; COVID-19; Norm activation model

## **1. Introduction**

Discussions around responsible consumption have taken place for a while, yet current speculation refers to COVID-19 as a potential transitional point (Cohen, 2020; Sarkis *et al.*, 2020). Responsible consumer behaviours reflect choices that meet a consumer's needs and consider the needs of others (Belz and Peattie 2009). Many studies have examined responsible

consumer behaviours across contexts (e.g., Gandhi and Kaushik, 2016; Elhoushy and Jang, 2023; Han *et al.*, 2015; Kozar and Connell, 2013; Syed and Shanmugam, 2021). Arguably, “The pandemic has given opportunity and time to the consumers to reflect on the basic meaning of consumption and the impact of their consumption not just on themselves but on others and the general society and the environment” (He and Harris, 2020, p. 178).

However, while some individuals have engaged in responsible behaviours during COVID-19, such as helping older people, and making donations of money and blood (Han *et al.*, 2021) or adhering to social distancing (He and Harris, 2020), the accumulative evidence confirms that consumers have engaged in stockpiling behaviours that have left others in need (Baker *et al.*, 2020; Chronopoulos *et al.*, 2020; Kirk and Rifkin, 2020). Power *et al.* (2020, p. 3) referred to stockpiling as “an accumulation of goods predominantly motivated by a desire to minimise the loss of, or the risk of losing, access to certain products”. Baker *et al.* (2020) found substantial changes in consumer spending with the COVID-19 outbreak, where stockpiling of household supplies led to a dramatic increase in spending by about 50%. Ahmadi *et al.* (2021) showed a massive increase in supermarket visits immediately after COVID-19 was declared a pandemic, followed by a significant drop; this signifies that the consumers stockpiled during the initial visits. Micalizzi *et al.* (2021) found that most people stockpiled at least one item, with toilet paper being the most stockpiled product. Additionally, other basic items such as flour, eggs, milk, and tomatoes were in short supply in the UK (Benker, 2021). As a result, supermarkets have been forced to implement measures such as rationing and designating specific hours of operation for key workers and seniors (He and Harris, 2020).

According to the Protection Motivation Theory (PMT: Rogers, 1975), people stockpile as a coping behaviour in response to the potential threat of COVID-19. Thus, the PMT explains stockpiling in the sense that consumers who consider that getting essential products in the future may be risky will be motivated to stockpile as a means of protection against that risk. Public crises may cause harmful consequences (e.g., anxiety, fear) that push consumers to stockpile products (Kemp *et al.*, 2021; Sterman and Dogan, 2015; Mishra, 2022). Micalizzi *et al.* (2021) also considered stockpiling to be a natural response to scarcity. However, stockpiling was portrayed as a social dilemma by Fischer *et al.* (2021, p. 2). It is argued that stockpiling has adverse consequences on others. For example, it causes a shortage of essential commodities and, albeit temporarily, obstructs access to basic needs (Benker, 2021), endangering more vulnerable people (Power *et al.*, 2020). Stockpiling also triggers a collective sense of fear, and the fear of scarcity leads to widespread panic buying in society (Zheng *et al.*, 2020). This emphasises the importance of studying stockpiling through a social responsibility lens.

The Norm Activation Model (NAM: Schwartz, 1977) is a prominent framework in the study of prosocial consumer behaviours. According to the NAM, three factors play a role in shaping consumer behaviours: *awareness of adverse consequences*, *ascribed responsibility* for those consequences, and *personal norms* (Schwartz, 1977; Schwartz and Howard, 1981). Personal norms refer to an individual's "moral obligation to perform or refrain from specific actions" (Schwartz and Howard, 1981, p. 191) and are considered the most prevalent predictor of prosocial behaviours (Schwartz and Howard, 1981). The NAM has been widely applied and has shown the importance of personal norms in determining various consumption decisions (e.g., Arkorful, 2022; Han, 2014; Han *et al.*, 2015; Klöckner, 2013). As such, the NAM is viewed as an appropriate theoretical framework to understand how it could activate socially responsible behaviours, specifically resisting stockpiling during public crises.

Overall, understanding consumer behaviour during public crises is crucial for marketers, retailers, and policymakers (Kirk and Rifkin, 2020). This study responds to calls to study responsible and prosocial consumption during and after the pandemic (He and Harris, 2020). Particularly, this study addresses three gaps in the literature.

First, previous research has tested the NAM in predicting pro-environmental behaviours and in ordinary life settings (where no public healthcare threats are assumed) (e.g., Han, 2014; Han *et al.*, 2015; Klöckner, 2013; Song *et al.*, 2023). In contrast, COVID-19 has provided new life conditions (e.g., social distancing, health concerns, and travel and purchase restrictions) that have affected, *inter alia*, consumer behaviours (He and Harris, 2020). As such, this research expands the NAM model to incorporate pandemic circumstances and investigate non-mainstream socially responsible consumer behaviours (i.e., resisting stockpiling).

Second, previous studies have revealed the significant role of fear in guiding consumer behaviours under the threat of a public pandemic (Addo *et al.*, 2020; Kemp *et al.*, 2021; Mishra, 2022; Truong and Truong, 2022). However, how personal norms and fear interact to shape customers' stockpiling behaviours is unknown. In such circumstances, consumers may find themselves with conflicting views: on the one hand, a consumer may hold strong personal norms towards responsible behaviours (e.g., "I feel morally obliged not to buy excessive amounts of toilet paper during a pandemic"), while on the other hand, *fear* of contagion, risk of supply interruption, and good intentions to visit the store less often (to reduce the risk of exposure) may trigger stockpiling. This conflict highlights the importance of researching the intersection of personal norms and fear.

Third, although some studies have focused on the effects of the COVID-19 pandemic (Bhatia and Dhawan, 2023; He and Harris, 2020; Zou *et al.*, 2022), and natural disasters (e.g.,

Guan *et al.*, 2023) on corporate social responsibility, there has been limited research on the topic of individual consumer social responsibility. As a result, the COVID-19 pandemic provides an opportunity for researchers to investigate non-mainstream socially responsible consumption, which occurs when consumers consciously consider 'how much to buy' as a measure of their sense of responsibility to others and society during public crises.

To address these gaps, the purpose of this study is two-fold. First, it examines whether consumer awareness of the adverse consequences of stockpiling during the initial COVID-19 outbreak and the ascribed responsibility for those consequences activate personal norms towards responsible shopping. Second, the study tests the interactions between fear and personal norms in determining consumer engagement in stockpiling. To this end, this paper contributes to the literature by modelling the interactions between fear and personal norms, and by providing the first evidence on how fear weakens the link between personal norms and consumer behaviours. As such, this study extends the NAM by including fear as a relevant emotion that can encourage stockpiling as a means of enhancing control beyond what consumers consider to be right or wrong. The findings are also useful for shedding light on non-mainstream responsible consumption behaviours (e.g., resisting stockpiling), and the interaction between consumption and social responsibility.

## **2. Literature Review**

### *2.1. Consumer behaviour during pandemics*

A growing stream of literature is studying the impacts of pandemics, such as COVID-19, on consumer behaviours (e.g., Burt and Maglaras, 2022; Chronopoulos *et al.*, 2020; Kirk and Rifkin, 2020; Naeem and Ozuem 2021; Zwanka and Buff, 2021). Overall, these studies can be grouped under three related streams of research. *The first stream of studies* focuses on analysing changes in consumer behaviours. For example, Chronopoulos *et al.* (2020) revealed that the COVID-19 outbreak caused a dramatic decline in consumer spending overall; yet, a strong increase in grocery spending was noticed compared to other categories. Baker *et al.* (2020) indicated that the spike in card spending was in line with the increased spending due to stockpiling household products. Truong and Truong (2022) studied changes in customer spending across three levels of personal contact: regular (in-store), limited (curbside pickup), and no personal contact (online shopping). They found that more customers chose to spend their money on online purchases due to the COVID-19 risk, which was attributed to fears about one's health and finances. Adibfar *et al.* (2022) found an increase in online purchasing during and after the pandemic, yet consumers still prefer physical stores.

*The second stream of studies* focuses on the underlying factors behind consumer buying and the subsequent influences these have on retailer performance. Faqih (2022) found that COVID-19 increased online shopping and that trust, anxiety, and gender are important indicators of consumer intent to shop online. Anas *et al.* (2022) discovered that fear and resource availability were important predictors of impulsive purchasing during the pandemic. Zheng *et al.* (2020) showed that panic starters (i.e., a patch of consumers who commenced the hoarding), and the initial level of panic buying, together determined the range and nature of the subsequent effects; to clarify, when the first batch of consumer panic buying was at a moderate level, beneficial outcomes to the retailers could be expected. In contrast, when the initial panic intensity was either very low or very high, social learning was seen to hurt the retailers' profits and social welfare in general. These findings imply that negative effects spillover from panic starters to future consumers.

*The third stream of studies* focuses on more specific aspects, such as changes in media consumption and the potential impacts of these changes on consumer behaviour. For example, Hong *et al.* (2019) revealed that media exposure was positively associated with risk perception and emergency preparedness behaviours. In this regard, PMT logic may explain why people stockpile. Although PMT has been used mostly concerning health-related decisions, it also provides a useful perspective for: i) examining stockpiling behaviours in response to a potential threat, and ii) appraising coping mechanisms. In response to a potential threat, consumers might be motivated to stockpile so as to be prepared and avoid the unwanted consequences of failing to secure their needs. Their coping factors, therefore, position stockpiling as a response to reduce the unwanted consequences of the potential threat. A summary of previous research findings is included in this article's appendix (see Appendix A).

Overall, evidence to date confirms the pronounced effects of a pandemic on retailing, and consumer behaviour (Burt and Maglaras, 2022). Moreover, scholars anticipate long-lasting changes even after the COVID-19 pandemic (Kirk and Rifkin, 2020; Pantano *et al.*, 2020). He and Harris (2020, p. 178) argue that “there is likely to be a significant shift towards responsible and pro-social consumption in the sense that consumers consciously reflect on how to consume and make product/brand choices to be more responsible to themselves, others, society, and the environment”. Yet, as indicated earlier, there remains a gap in knowledge regarding promoting socially responsible behaviours like resisting stockpiling during public crises, given the interplay between personal norms and fears.

## 2.2. Stockpiling as a socially irresponsible behaviour

During times of public crisis, consumers who demonstrate responsible behaviours are those who refrain from panic buying and prioritise the needs of the more vulnerable members of society (He and Harris, 2020). Although stockpiling may have personal benefits, such as securing future needs and reducing store visits during public crises, it also causes harm to others and can leave more vulnerable individuals in need. Since the needs of others are at the core of responsible consumption (Belz and Peattie, 2009), stockpiling during a crisis can be viewed as irresponsible behaviour due to its negative effects on others. Firstly, stockpiling leads to a scarcity of essential items and limits access to necessities, at least temporarily (Benker, 2021), putting vulnerable people at risk (Power *et al.*, 2020). Secondly, Fischer *et al.* (2021, p. 2) conceptualised stockpiling as a real-life social dilemma and argued that "if too many individuals decide to defect by purchasing more than they need, the common resource will eventually become depleted." Thirdly, stockpiling spreads a general feeling of fear and the threat of supply shortages leads to wider circles of panic buying in society (Zheng *et al.*, 2020). One example of how stockpiling can leave others (e.g., essential workers) in need is the short video plea by Bilborough that went viral on social media. Ms. Bilborough stated that 'people are just stripping the shelves of basic foods,' leaving her unsure of how to stay healthy. In response, the Secretary of State for Health and Social Care stated that the video 'demonstrates the consequences of being irresponsible' (BBC News, 2020).

From the standpoints of the self, society, and environment, Sheth *et al.* (2011) emphasised the importance of addressing overconsumption, as even sustainable products can be consumed in excess. Thøgersen and Crompton (2009) have also pointed out that the focus on "soft" actions, such as buying a more environmentally friendly car, rather than "hard" actions, such as reducing car use, leads to only marginal changes that are insufficient to address consumption problems. These arguments reinforce the importance of considering the quantity of purchases as a socially responsible consumption indicator in both the social and environmental domains.

Overall, during the COVID-19 pandemic outbreak, many consumers stockpiled. While purchase quantities are often used to measure stockpiling behaviour, they are rarely used to reflect responsible consumer behaviour. Therefore, the current study examines responsible consumption from a social perspective (i.e., whether a consumer engages in stockpiling) rather than the mainstream focus on whether a consumer considers environmental issues.

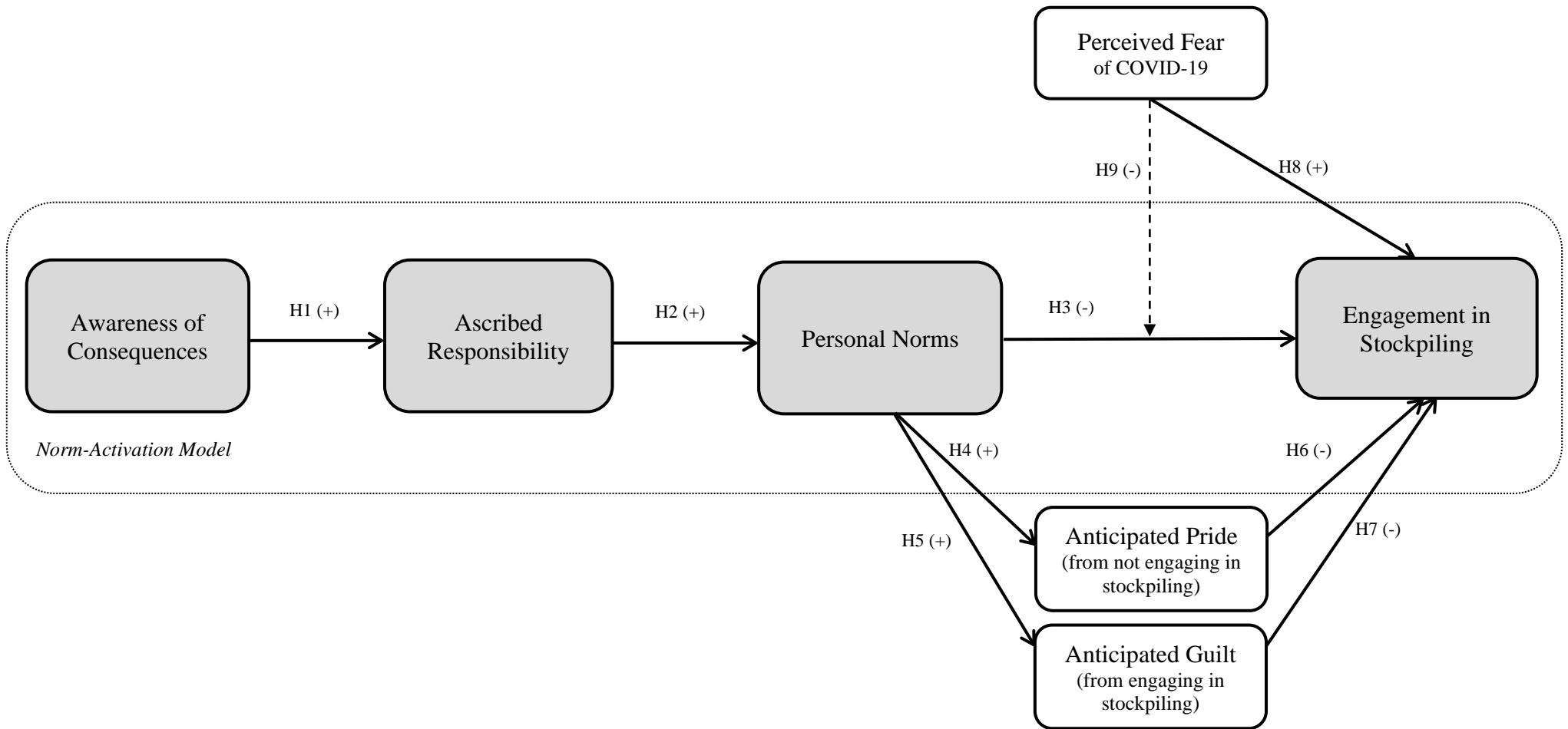
### 2.3. Theoretical background and hypotheses

The NAM is considered a suitable theoretical basis for examining responsible shopping behaviour during crises. The reason is two-fold: first, this model has been developed for pro-social contexts in which human altruism plays a significant role (Schwartz, 1977). This appears relevant to responsible buying during crises (e.g., pandemics, natural disasters) because people are asked to consider not only their own needs but also those of others. Second, the validity of the NAM has been tested, showing the prominent role of its predictors (i.e., AC, AR, and personal norms) in shaping consumer behaviours across contexts (e.g., De Groot and Steg, 2009; Han *et al.*, 2015; Steg and De Groot 2010).

According to the NAM (Schwartz, 1977), personal norms are the immediate antecedents of behaviour. The activation of personal norms, however, is a function of two key predictors: awareness of consequences and ascribed responsibility (De Groot and Steg, 2009; Schwartz, 1977). In the context of stockpiling, the former refers to a consumer's level of consciousness of potential adverse consequences for others when buying extra amounts of a certain item for his or her future use. The latter refers to the propensity of a consumer to accept or deny responsibility for those adverse consequences. If, for example, consumers know that buying extra items of hand wash or pasta may lead others (e.g., the elderly, medical staff) to suffer from a shortage of these items, they may feel responsible for the ramifications of their actions.

Researchers have also extended the NAM, revealing greater explanatory power than the original model (Han, 2014; Han *et al.*, 2015). A notable extension was the introduction of emotional processes, which theorised that the activation of personal norms is more adequately explained when positive and negative emotions (mainly pride and guilt) are involved (see: Onwezen *et al.*, 2013). More recently, the COVID-19 pandemic has provided a challenging context for testing the NAM under conditions of fear. Companies have also focused on emotions while communicating with their customers during the pandemic (Momin *et al.*, 2022). Recognising these two extensions, the current study incorporates the emotions of pride, guilt, and fear into the NAM's original predictors to gain a better understanding of responsible shopping behaviours during crises (Figure 1).





**FIGURE 1** An extended norm activation model. *NOTE: The dotted arrow represents the moderating effect.*  
 Source: Authors own creation

### 2.3.1. *Awareness and responsibility as predictors of personal norms*

The literature reveals two main conceptual interpretations of the relationships between NAM predictors. The first is the *mediator interpretation* that proposes a sequential cause mechanism, which suggests that awareness of consequences affects ascribed responsibility, which in turn affects personal norms (De Groot and Steg, 2009; Steg and De Groot 2010). Some studies also follow *a simpler model* in which awareness of consequences and ascribed responsibility are direct antecedents of personal norms, which then mediate their effect on behaviour or behavioural intentions (Song *et al.*, 2023; Klöckner, 2013, Wang *et al.*, 2019). The second is the *moderator interpretation* in which awareness of consequences and ascribed responsibility moderate the link between personal norms and behaviour (De Groot and Steg, 2009). Arkorful (2022), for example, indicated that the ascription of responsibility moderates the relationship between personal norms and the intention to report electricity theft. The literature, overall, has supported the mediator model (e.g., Arkorful, 2022; De Groot and Steg, 2009; Han, 2014; Han *et al.*, 2015; Steg and De Groot 2010, Meng *et al.*, 2020). For example, De Groot and Steg (2009) compared these interpretations across five studies and verified the primacy of the mediator model in both social and environmental contexts. This primacy is based on the logic that a consumer is likely to feel responsible only if he or she is aware of the adverse consequences of the action in the first place (Steg and De Groot 2010; Onwezen *et al.*, 2013). Then, knowing the negative consequences of stockpiling, consumers start to, either, deny or accept responsibility for the consequences, which, in turn, activates their norms. Thus:

**H1.** Consumers' awareness of the adverse consequences of stockpiling during COVID-19 is positively associated with their ascribed responsibility to avoid stockpiling.

**H2.** Consumers' ascribed responsibility for the adverse consequences of stockpiling during COVID-19 is positively associated with their personal norms to avoid stockpiling.

### 2.3.2. *Personal norms and stockpiling behaviour*

As anticipated, stockpiling or buying excessive amounts of household supplies during crises, which are behaviours that cause deviation from regular shopping quantities and leave others in need, are considered irresponsible behaviours. Such behaviours have severe consequences on others, including retail establishments, supply chain entities, the general community (Zheng *et al.*, 2020) and, especially, vulnerable people and essential workers (Pantano *et al.*, 2020). Based on the NAM (Schwartz and Howard, 1981), personal norms are operationalised as the shopper's moral obligation to refrain from stockpiling in recognition that it is irresponsible behaviour during crises. A responsible shopper, therefore, is expected to buy

regular or fewer amounts that meet one's current needs and consider the current needs of others. Consistent with the NAM, stronger personal norms are assumed to trigger more responsible (as opposed to irresponsible) shopping behaviours. Thus:

**H3.** Personal norms are negatively associated with stockpiling.

### 2.3.3. *Personal norms and anticipated emotions of pride and guilt*

Prior studies have revealed the significant role that emotions play in guiding consumer behaviours (e.g., Carrus *et al.*, 2008; He and Hu, 2022; Jeong *et al.*, 2021; Sneath *et al.*, 2009). Research has focused on the emotions of pride and guilt in explaining consumer behaviours using the NAM (Han, 2014; Onwezen *et al.*, 2013). The current study also focuses on pride and guilt for two reasons. First, both pride and guilt can be imagined *before* engaging in or not engaging in a behaviour. If, for example, a consumer anticipates that they would feel guilty if they ordered excess amounts of food, this feeling of guilt may lead them to order less. In this way, pride and guilt differ from other emotions, such as joy and regret, which are emotions that consumers experience *after* behaviours have already occurred, not in advance. Second, Onwezen *et al.* (2013) indicated that pride and guilt are outcomes of a specific behaviour rather than the entire self. Thus, consumers may consider the adverse consequences of stockpiling and anticipate emotions that can discourage this behaviour.

Pride is defined as an anticipated positive emotion experienced because of the congruency between a consumer's personal norms (e.g., I feel obligated to avoid stockpiling), and his or her shopping behaviours (e.g., not to stockpile). Guilt is a negative emotion that is anticipated when the action of stockpiling is evaluated as incongruent with a consumer's personal norms (Onwezen *et al.*, 2013). Both pride and guilt are theoretically associated with personal norms (Onwezen *et al.*, 2013). That is, a consumer can anticipate pride or guilt based on the congruency of their personal norms and actions; adherence to personal norms will be associated with feelings of pride, while an individual may anticipate guilt from acting against his or her norms (Schwartz, 1977). The current study, therefore, assumes that the strength of pride or guilt experienced depends on the consumer's personal norms in the first place. As such, consumer anticipation of guilt from stockpiling, or pride for *not* engaging in stockpiling is based on personal norm activation. Thus:

**H4.** Stronger personal norms are associated with higher anticipated pride resulting from not engaging in stockpiling.

**H5.** Stronger personal norms are associated with higher anticipated guilt from engaging in stockpiling.

#### 2.3.4. *Anticipated emotions and stockpiling behaviour*

Based on an individual's innate desire to seek positive, and refrain from negative, emotions (Simonson, 1992), the prospect of experiencing positive (i.e., pride) or negative (i.e., guilt) emotions can affect shopping decisions (Richard *et al.*, 1996; Ravis *et al.*, 2009). Notably, positive, and negative emotions may coexist (Williams and Aaker 2002); shoppers may experience varying degrees of pride and/or guilt about stockpiling. For example, a family member might feel proud of safeguarding large amounts of a given product for future use. Concurrently, this person may anticipate guilt for leaving others in need (Prentice *et al.*, 2020). Baker *et al.* (2020, p. 4) also referred to the negative feelings of shame surrounding stockpiling. Accordingly, this study proposes that if shoppers anticipate guilt (pride) from buying excessive (responsible) amounts of household supplies that maximised (minimised) the negative impact of their purchasing on others, they are more likely to avoid such behaviour. Thus:

**H6.** Anticipated pride is negatively associated with stockpiling.

**H7.** Anticipated guilt is negatively associated with stockpiling.

#### 2.3.5. *Perceived fear and stockpiling behaviour*

Fear is a meaningful emotion to consider in the quest to understand consumer behaviours during crises. Under the threat of a public pandemic, people's behaviours are assumed to have strong affective components. For example, Jung *et al.* (2016) elucidated that the effects of the MERS outbreak arose from the consumers' fears of contagion, which affected their expenditure and their behaviours. Using the theory of fear appeal, Addo *et al.* (2020) found a positive direct link between fear appeal and buying behaviours during the COVID-19 pandemic. Kemp *et al.*, (2021) and Mishra (2022) also found that anxiety and fear were related to hoarding during COVID-19. Interestingly, fear was found to increase the consumers' need for social interaction to mitigate their fears, which, in turn, triggered them to buy more. Consumers, on the other hand, alter their purchasing habits by considering shopping modes (e.g., online) that allow them to limit or avoid contact (Truong and Truong, 2022).

The current study argues that perceived fear has both direct and moderating effects on shopping behaviour, as shown in the proposed model (Figure 1). The *direct effect* suggests that fear may lead to irresponsible shopping behaviours (e.g., stockpiling). This link is supported by the logic of protection motivation (Rogers 1975), where hoarding is seen as a preventive

(coping) action; hoarding is an outcome of threat appraisal (e.g., vulnerability to COVID-19) and coping appraisal (i.e., avoiding the risk of exposure in a supermarket by storing more items). Additionally, widely spread images of empty shelves may trigger fear in consumers (Naeem and Ozuem 2021), so they try to boost their confidence and feelings of security by storing large amounts of a product (Prentice *et al.*, 2020). Buying, therefore, becomes a means to deal with or control danger (Addo *et al.* 2020). Thus:

**H8.** Perceived fear is positively associated with stockpiling.

### 2.3.6. *The moderating effect of fear*

The *moderating effect* proposes that fear moderates the relationship between personal norms and stockpiling (H3). Specifically, personal norms have a stronger association with stockpiling at low, rather than high, levels of fear. The logic behind this potential interaction is that both feelings of fear and moral obligation vary in terms of time horizon; while the former might be short-term and event-induced, the latter is more consistent and long-term oriented. Thus, a consumer may attribute more value to one, versus the other, based on whichever feeling is more salient at a particular moment in time. When fear is high, consumers are more focused on event-induced emotions and less on their norms. Furthermore, the formation of consistent norms may be difficult given the conflicting obligations they are experiencing. For example, a person might feel obliged to consider the needs of others and, at the same time, feel obliged to secure his or her own family's needs. Under such circumstances, emotions are likely to predict behaviour over and above attitudes (Allen *et al.* 1992). Thus, the following hypothesis is formulated.

**H9.** Fear moderates the relationship between personal norms and stockpiling, such that the negative link between personal norms and stockpiling is weaker for individuals with higher levels of fear compared to those with lower levels of fear.

## 3. Methods

### 3.1. *Data collection and sample characteristics*

The sample was comprised of US consumers responsible for their household grocery shopping during the COVID-19 pandemic. Between April 24 and May 15, 2020, participants were recruited through Amazon Mechanical Turk and rewarded with a small incentive for participation (\$0.60). A total of 717 participants completed the questionnaire designed and hosted on Qualtrics. The questionnaire included screening and attention-check questions by asking the respondents to choose a certain answer, such as 'Please check to disagree with this

statement'. It also asked whether they were responsible for their household grocery shopping during the COVID-19 pandemic outbreak. Respondents (124) who failed the attention checks or screening questions were eliminated from the analysis. Of the remaining 593 responses used for data analysis, 55.2% were male, 42.1% were female, and 0.7% preferred not to say. Most participants (34.1%) were between 25 and 34 years old, followed by 35–44 (23.6%), 55–64 (19.4%), 65 or over (12.8), and 18–24 (4.4%). For education, the majority (45.7%) held a bachelor's degree, followed by a master's degree (22.8%), high school (17%), an associate degree (12.1%), and very few (1.9%) had a doctorate. These characteristics reflect a reasonable sample.

### *3.2. Research instrument*

The data collection instrument was adapted from existing literature and comprised five sections arranged in the following order: (1) introduction and participation consent; (2) filter questions; (3) shopping behaviour; (4) anticipated pride and guilt; (5) personal norms, awareness of consequences, and ascription of responsibility; (6) perceived fear; and (7) demographics.

To assess stockpiling during crises, this study employed a self-reported measure on a 7-point scale ranging from 1 ("much less") to 7 ("much more"). Respondents were asked, "Compared to the regular amounts of supplies that you usually buy, how do you rate the amount of your purchase in each of the following categories after the COVID-19 outbreak?" The responses were averaged across five categories (i.e., dry food, fruits, vegetables, meat, and cleaning products) adapted from Micalizzi et al. (2021) to generate a composite score, where higher values indicated higher engagement in stockpiling behaviour. The use of this self-reported measure was necessitated by the absence of pre-COVID-19 data access.

Regarding emotions, scales for both pride and guilt were adapted from previous literature (Han, 2014; Onwezen et al., 2013). To measure pride, respondents were presented with the following question: "During the COVID-19 outbreak, imagine that you decided to buy responsible amounts of household supplies that minimized the negative impact of your purchasing on other consumers and the wider community. How would you feel?" They were then provided with response options including: proud, accomplished, confident, and worthwhile. For guilt, respondents were asked to imagine buying excessive amounts of household supplies that maximized the negative impact on other consumers and the wider community and were asked how they would feel. Response options for guilt included: guilty,

remorseful, sorry, and conscience-stricken. Both scales utilized a seven-point response format, ranging from 1 ("extremely unlikely") to 7 ("extremely likely"). Perceived fear was measured using four items, such as "My level of fear of the consequences of the Coronavirus is..." based on the works of Simard and Savard (2008). Each item was rated on a seven-point scale, ranging from 1 ("extremely low") to 7 ("extremely high").

Regarding personal norms, three items were adapted from Onwezen et al. (2013), such as "I feel an obligation to follow responsible buying behaviour rather than stockpiling during the COVID-19 outbreak." To assess awareness of consequences, a six-item scale was developed based on the works of De Groot and Steg (2007) and Kaiser et al. (2005). Sample items include "I am aware that engaging in stockpiling during the COVID-19 outbreak can cause problems in the supply chain." Ascribed responsibility was measured using four items adapted from Han (2014) and Onwezen et al. (2013), for instance, "I consider myself jointly responsible for the problems caused by stockpiling behaviours during the outbreak." Please refer to Appendix B for the complete set of questionnaire items.

### *3.3.Data analysis strategy and preliminary statistical verification*

This study used covariance-based structural equation modelling (CB-SEM). Specifically, according to Grewal et al. (2004), CB-SEM can consider the measurement error in both the predictor and outcome variables, which results in a more precise estimate of the model parameters and effects. Additionally, this approach provides better control over both observable and unobservable factors (Cheung and Lau, 2008). Also, CB-SEM is recommended when the objective of the study is to test a theory, all the measurements are reflective, and the data are normally distributed (Kline, 2016). Data were analysed (in AMOS v27) using the two-step approach recommended by Anderson and Gerbing (1988); to test the adequacy of the measurement model via confirmatory factor analysis (CFA) and the direct effects via structural model analysis. SEM is considered appropriate for latent variables that are not directly observable (Nunkoo *et al.*, 2013) and, hence, is an appropriate method for the current study. First, a CFA was conducted to assess the psychometric properties of the measurement model. Second, the structural model was tested; chi-square statistics and other global fit indices (such as the Tucker-Lewis index (TLI), comparative fit index (CFI), root mean squared error of approximation (RMSEA), and standardised root mean squared residual (SRMR)) were used to assess the adequacy of the measurement model and the structural model (Nunkoo *et al.*, 2013). Additionally, Hayes's (2018) PROCESS macro (model 1) with 10,000 bootstraps resample was

used to test the moderating effect of fear on the relationship between personal norms and responsible shopping behaviour, and the Johnson–Neyman technique (Spiller *et al.*, 2013) was used to plot the interaction effect.

Since the data were cross-sectional, common method bias (CMB) may represent a threat to our data. To avoid this bias, the instrument was designed to include a random-ordered sequence of scale items and did not imply any preferred response in the statements (Steenkamp and Maydeu-Olivares, 2021). Also, the independent and dependent variables in the questionnaire were separated (Jordan and Troth 2020); again, to minimise CMB. After the data collection, Harman’s single-factor test (Podsakoff *et al.*, 2003) was used to check for common method variance. All measurement items were entered in a single exploratory factor analysis without rotation. The single factor accounted for 29% of the variance, which indicates that CMB was not a pervasive issue in our data.

## 4. Results

### 4.1. Descriptive statistics

Table 1 includes means, standard deviations, correlations, and reliabilities for each construct. The data show that respondents engaged in buying much more across all categories after the COVID-19 outbreak ( $\bar{x} = 5.61$ ,  $SD = 1.24$ ). Respondents showed a high degree of personal norms towards responsible shopping ( $\bar{x} = 5.28$ ,  $SD = 1.23$ ). Moreover, they were aware of the adverse consequences ( $\bar{x} = 5.57$ ,  $SD = 1.27$ ) but felt less responsible for such consequences ( $\bar{x} = 4.08$ ,  $SD = 1.46$ ). In terms of emotions, they anticipated pride for buying responsibly during the COVID-19 outbreak ( $\bar{x} = 5.17$ ,  $SD = 1.46$ ) and anticipated guilt for engaging in stockpiling ( $\bar{x} = 5.15$ ,  $SD = 1.73$ ). Respondents expressed feelings of fear of the coronavirus and its consequences ( $\bar{x} = 4.68$ ,  $SD = 1.70$ ).

**TABLE 1** Variable Means, Standard Deviations, Correlations, and Reliabilities

	Mean	SD	Cronbach alpha	Fear	Stockpiling	Personal norms	AC	AR	Pride	Guilt
<b>Fear</b>	4.68	1.70	0.96	1						
<b>Stockpiling</b>	5.61	1.24	0.88	.24**	1					
<b>Personal norms</b>	5.28	1.23	0.88	.16**	.10**	1				
<b>AC</b>	5.57	1.27	0.93	.22**	-.13**	.78**	1			
<b>AR</b>	4.08	1.64	0.78	.28**	.35**	.13**	.15**	1		
<b>Pride</b>	5.17	1.46	0.92	.23**	.38**	.43**	.29**	.32**	1	
<b>Guilt</b>	5.15	1.73	0.96	.24**	-.08*	.57**	.56**	.17**	.28**	1

Note: AC = Awareness of consequences; AR = Ascription of responsibility.

\*\*  $p < 0.01$

Source: Authors own creation



#### 4.2. Measurement model

The CFA results demonstrated that the measurement model provided a satisfactory fit to the data ( $\chi^2 = 762.655$ ,  $df = 297$ ,  $\chi^2/df = 2.568$ ; TLI = .96; CFI = .97; RMSEA = .051; SRMR = .047), suggesting the adequacy of the model (Kline, 2016). After the measurement model was established, both convergent and discriminant validity were assessed. As depicted in Table 2, the substantial and subsequent items loaded meaningfully and significantly (above 0.5) on their predictable latent construct and the AVE values were greater than the suggested boundary value of 0.5 (Anderson and Gerbing, 1988), lending support for convergent validity.

All factors were deemed reliable since all their coefficient's alphas and composite reliability (CR) values were higher than the suggested value of 0.70 (Nunnally and Bernstein, 1994). Additionally, as indicated in Table 3, the square roots of the AVEs for each construct (presented in the diagonal) were greater than their inter-construct correlation (Fornell and Larcker, 1981), so discriminant validity was established.

**TABLE 2** Results of the measurement model: reliability and convergent validity

Constructs and their indicators	Std. $\beta$	T-values	CR	AVE
<b>Awareness of consequences (AC)</b>			0.93	0.69
AC 1	.86	N/A		
AC 2	.88	28.03		
AC 3	.87	30.34		
AC 4	.75	21.23		
AC 5	.72	20.09		
AC 6	.80	23.90		
<b>Ascribed responsibility (AR)</b>			0.89	0.67
AR 1	.67	N/A		
AR 2	.97	15.63		
AR 3	.91	15.79		
AR 4	.67	17.53		
<b>Personal norms (PN)</b>			0.88	0.70
PN 1	.85	N/A		
PN 2	.82	23.53		
PN 3	.85	24.49		
<b>Anticipated pride (AP)</b>		N/A	0.92	0.74
AP 1	.84			
AP 2	.88	27.16		
AP 3	.85	25.42		
AP 4	.87	26.60		
<b>Anticipated guilt (AG)</b>			0.96	0.84
AG 1	.89	N/A		
AG 2	.94	37.87		
AG 3	.94	38.17		
AG 4	.90	34.15		
<b>Perceived fear (PF)</b>			0.96	0.85
PF 1	.88	N/A		
PF 2	.86	29.95		
PF 3	.98	41.41		
PF 4	.97	40.60		

<b>Engagement in stockpiling (ES)</b>		0.86	0.57
ES 1	.62	N/A	
ES 2	.89	20.30	
ES 3	.86	19.31	
ES 4	.74	21.52	
ES 5	.60	16.06	

CR = composite reliability; AVE = average variance extracted.

Source: Authors own creation

**TABLE 3** Correlations and average variance extracted - discriminant validity

	Fear	Stockpiling	Personal norms	AC	AR	Pride	Guilt
Fear	<b>0.92</b>						
Stockpiling	0.22	<b>0.77</b>					
Personal norms	0.15	0.00	<b>0.84</b>				
AC	0.21	-0.12	0.73	<b>0.83</b>			
AR	0.27	0.32	0.12	0.14	<b>0.83</b>		
Pride	0.22	0.35	0.39	0.27	0.30	<b>0.86</b>	
Guilt	0.23	-0.08	0.53	0.56	0.16	0.26	<b>0.92</b>

Note: AC = Awareness of consequences; AR = Ascribed responsibility.

Bold elements in the diagonal signify the square root of the average variance extracted; correlations are shown off-diagonal.

All correlations are significant at the  $p < 0.001$  level

Source: Authors own creation

#### 4.3. Results of the structural model

The model was shown to fit the data, as demonstrated by the results of the structural model: ( $\chi^2 = 870.934$ ,  $df = 309$ ,  $\chi^2/df = 2.819$ ; TLI = .96; CFI = .96; RMSEA = .055; SRMR = .056). As Table 4 shows, awareness of consequences was positively and significantly related to ascribed responsibility ( $\beta = .138$ ,  $p < .001$ ); thus, supporting H1. The positive relationship between ascribed responsibility and personal norms was significant ( $\beta = .745$ ,  $p < .001$ ), supporting H2. Hypothesis 3 proposed a negative link between personal norms and stockpiling ( $\beta = -.213$ ,  $p < .01$ ) and hypotheses 4 and 5 proposed positive relationships with both perceived pride ( $\beta = .396$ ,  $p < .001$ ) and perceived guilt ( $\beta = .566$ ,  $p < .001$ ) respectively. All three relationships were significant: therefore, supporting H3, H4 and H5. The relationship between perceived pride and stockpiling was significant but positive ( $\beta = .391$ ,  $p < .001$ ), thus, H6 was not supported. Perceived guilt was significantly and negatively related to stockpiling ( $\beta = -.159$ ,  $p < .01$ ), supporting H7. Lastly, fear was found to be positively and significantly associated with stockpiling ( $\beta = .196$ ,  $p < .001$ ), supporting H8.

**TABLE 4** Hypothesized relationship between constructs and observed relationship from the structural model

Standardized hypothesized relationship	$\beta$	<i>t-value</i>	Results
H1: AC → AR	.138***	3.374	Supported
H2: AR → Personal norm	.745***	18.449	Supported
H3: Personal norm → Stockpiling	-.213**	-3.539	Supported
H4: Personal norm → Pride	.396***	8.961	Supported

H5: Personal norm → Guilt	.566***	13.639	Supported
H6: Pride → Stockpiling	.391***	8.106	Not supported
H7: Guilt → Stockpiling	-.159**	-3.071	Supported
H8: Fear → Stockpiling	.196***	4.798	Supported

Note: AC = Awareness of consequences; AR = Ascribed responsibility.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Variance explained:

$R^2_{AR} = 0.20$

$R^2_{PNO} = 0.55$

$R^2_{GUILT} = 0.32$

$R^2_{PRIDE} = 0.26$

$R^2_{IfBB} = 0.52$

Source: Authors own creation

#### 4.4. The moderating effect of fear

To test whether perceived fear weakens the negative link between personal norms and stockpiling (H9), the recommendations put forth by Aiken and West (1991) were followed (Table 5). The ordinary least square regression equation was significant ( $p < .001$ ). The moderating effect of fear was found to be significant and negative ( $b = -0.065$ , 95% CI = [-0.107, -0.023]), which means that the negative link between personal norms and stockpiling behaviour was stronger when fear was low ( $b = 0.144$ , 95% CI = [0.043, 0.244]) and became insignificant when fear was average ( $b = 0.030$ , 95% CI = [-0.087, 0.146]) or high ( $b = -.042$ , 95% CI = [-0.190, 0.107]). To further support H9, the Johnson-Neyman technique was used to calculate the region of the significance of the effect of personal norms on stockpiling ( $\theta \rightarrow Y$ ) as a function of fear (Miller *et al.*, 2013). As depicted in Figure 2, the Johnson-Neyman plot of the region of significance, combined with an increase in  $R^2$  ratio ( $\Delta R^2 = .012$ ), shows that the direct link between personal norms and stockpiling engagement was stronger when fear decreased, lending support to H9.

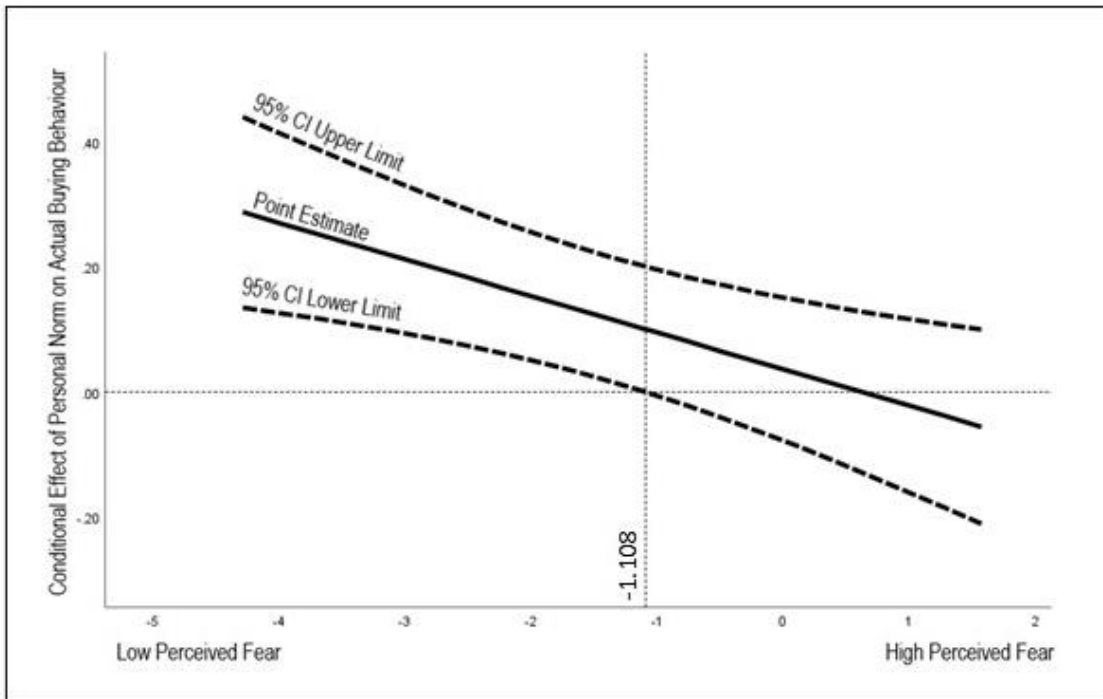
**TABLE 5** Results of the moderating effect.

	$\beta$	SE	t-value	95% CI	
				LLCI	ULI
Constant	.0568	.0469	1.212	-.035	.149
Personal norm	.0013	.0579	.022	-.112	.115
Fear	-.0893	.0344	-2.592	-.157	-.022
Personal Norm x Fear	-.0650	.0213	-3.047	-.107	-.023
				95% CI	
Fear as the moderator	Effect	SE	T-value	LLCI	ULI
-1SD	.144*	.051	2.79	.043	.244
Mean	.030	.059	.501	-.087	.146
+1SD	-.042	.075	-0.550	-.190	.107

Note:  $\beta$  = Unstandardised coefficient.

\*Slope coefficient is significant at 0.001.

Source: Authors own creation



**FIGURE 2** Johnson-Neyman conditional effect of personal norms on stockpiling ( $\theta \rightarrow Y$ ) as a function of perceived fear.

Source: Authors own creation

## 5. Discussion

Based on the norm activation model framework, this study identifies the factors that activate consumer personal norms towards socially responsible behaviours, particularly in the context of resisting stockpiling during the COVID-19 pandemic outbreak. In addition, the study examines how fear weakens the link between personal norms and consumer purchasing behaviour. The findings support the norm activation model's original predictors for activating personal norms towards responsible buying.

The results indicate that awareness of negative consequences is a crucial factor in strengthening personal responsibility. When consumers recognise the adverse consequences of stockpiling, they are more likely to feel responsible for avoiding stockpiling and considering the needs of others. Ascribing responsibility for negative consequences is also an effective way to activate personal norms, making them stronger. This indicates that consumers who ascribe responsibility for the consequences of stockpiling are more likely to feel a moral obligation to resist this behaviour.

The study finds that personal norms had a strong negative effect on stockpiling during the COVID-19 outbreak, highlighting the importance of personal norms. This means that consumers who maintain a strong moral obligation towards responsible buying are more likely to resist stockpiling. The importance of personal norms in times of pandemic can also be

attributed to people's social need for belonging, which can be met by acting responsibly and with consideration for others (He and Harris, 2020). These results are consistent with prior research (e.g., Song *et al.*, 2023) that has emphasised the significance of personal norms in similar contexts. Overall, the results indicate that awareness of consequences, ascribed responsibility and personal norms are all crucial factors for discouraging stockpiling during public crises.

The results also provide additional evidence for the role that emotions play in shaping consumer behaviour during crises. In line with previous research (Han, 2014; Onwezen *et al.*, 2013), consumers with strong personal norms expect to feel guilty if they engage in stockpiling, while they anticipate feeling proud if they refrain from stockpiling, aligning with their norms. The results show that anticipated guilt has a significant negative association with consumer buying behaviour. This means that anticipating the negative emotion of guilt due to stockpiling entices people to resist this behaviour. This may be due to consumers' strong desires to avoid guilt (i.e., guilt aversion) in response to widespread public criticism of stockpiling.

At the same time, the findings suggest that anticipated pride is positively related to stockpiling. This suggests that pride has the opposite effect of guilt. When consumers anticipate pride from buying responsible amounts of household supplies, they are more likely to stockpile. This result contradicts previous studies, where pride has been presumed to stimulate positive outcomes (Han, 2014; Onwezen *et al.*, 2013). As research has shown that people are more likely to engage in positive emotion-producing behaviour (White *et al.*, 2019), one possible explanation for this result is that consumers tend to stockpile more when they view this behaviour positively. This positivity may stem from feeling proud of having secured more units for future use, which may be driven by self-interest during public crises. Another explanation is that consumers who feel proud of buying responsible amounts of household supplies that minimised the negative impact on others may use this as justification for future stockpiling. This aligns with the self-licensing logic (Merritt *et al.*, 2010), which suggests that avoiding stockpiling at one point can be used to justify stockpiling at a later point. This may be especially true in the event of a pandemic when people believe they have done their part ("I did not stockpile during my last visit"). This result could also be attributed to the different research contexts, as the current study focused on the non-mainstream socially responsible behaviour of resisting stockpiling during public crises. Thus, further research is needed to delve deeper into this finding.

Finally, the results support a direct positive relationship between perceived fear and stockpiling. The greater the fear caused by COVID-19, the greater the consumer interest in

stockpiling. This implies that fear determines not only what people buy but also in what quantities (Jung et al., 2016). In addition, fear plays a moderating role by decreasing the negative effect of personal norms on stockpiling. This means fear can not only encourage stockpiling but also override the influence of personal norms. Put differently, personal norms discourage stockpiling when fear is weak. Possibly, personal norms shape socially responsible behaviours when people think about others; yet, when fear is high, those norms become weaker due to a greater focus on oneself, which is driven by fear.

### *5.1. Theoretical implications*

This study contributes to the existing body of knowledge by emphasising fear's key moderating role—the level of fear that moderates the influence of personal norms on consumer behaviour. This demonstrates when personal norms are more and less effective in crises. The current study adds to previous research that suggests personal norms are particularly effective in prosocial behaviours (Arkorful, 2022; De Groot and Steg, 2009; Steg and De Groot 2010) by demonstrating that personal norms are less effective when fear is high.

Our study also builds on and extends recent works that have studied the role of fear during the pandemic (Kemp *et al.*, 2021; Mishra, 2022; Truong and Truong, 2022). Uniquely, this study reveals that the effect of perceived fear occurs through two different paths: a direct positive relationship between fear and stockpiling, and a moderating role through conditioning the impact of personal norms. To this end, this paper contributes to the literature by modelling the interactions between fear and personal norms, and by providing the first evidence on how fear weakens the link between personal norms and non-mainstream socially responsible behaviours like stockpiling. As such, this study extends the NAM by including fear as a relevant emotion that can encourage stockpiling as a means of enhancing control beyond what consumers consider to be right or wrong.

This study also identifies the mechanisms underlying the activation of personal norms. According to the findings, awareness of the consequences, ascribed responsibility, and personal norms are all important factors in encouraging more socially responsible consumer behaviours during crises. Consistent with the environmental literature (De Groot and Steg, 2009; Onwezen *et al.*, 2013), the findings back up the NAM's original predictors of personal norms towards responsible buying during public crises. The results underlined that consumer awareness of the adverse consequences of stockpiling during the COVID-19 outbreak and the ascribed responsibility for those consequences, activate personal norms towards responsible buying.

This research also adds to the literature on emotions. The findings revealed that feelings of pride and guilt play a significant role in shaping consumer behaviour during times of crisis, such as stockpiling. This builds on previous research showing that anticipating guilt can trigger pro-environmental behaviours (Onwezen *et al.*, 2013). However, the findings differ from those of previous studies regarding pride. While pride can be especially effective in motivating pro-environmental consumer behaviour (White *et al.*, 2019), current evidence suggests that pride has the opposite effect in the prosocial context of resisting stockpiling during public crises. Further research could examine in more detail whether there are conditions under which pride can serve as a driver of socially responsible behaviours across environmental and social contexts.

### *5.2. Practical implications*

"We understand your concerns but buying more than is needed can sometimes mean that others will be left without," "Together we will care for those around us," "But we need your help too" — (Hipwell, 2020). These quotations communicated by British Food Retailers during the pandemic outbreak in their 'working to feed the nation' letter focused on people's norms in urging them to stop stockpiling. The current study focuses on one condition in which these messages may be less effective. This study found that when fear is strong, norm activation tactics are less effective in promoting responsible shopping.

Marketers can promote more responsible consumer behaviour during crises by activating personal norms, as this study suggests. One way to do this is by communicating the negative consequences of stockpiling through various channels, such as media outlets, government officials, and in-store signage. Media messages should highlight the connection between stockpiling and its wider effects, such as triggering panic buying. It is also essential to activate a sense of responsibility for the impact of stockpiling.

While strict retailer policies can be useful in limiting stockpiling, they alone are not enough to solve the problem. Consumers can simply go to multiple stores to purchase more than the allowed limit. Therefore, it is also important to foster a sense of shared responsibility between consumers and retailers to maintain a steady supply (Pantano *et al.*, 2020). In this regard, norm activation tactics can improve consumer acceptance of and satisfaction with pandemic-related policies implemented by the government and retailers.

When individuals experience strong fear, the effectiveness of personal norms in promoting responsible shopping decreases. Therefore, messages aimed at discouraging stockpiling should not only activate personal norms but also address fear. For instance, messages such as "There

is enough for everyone if we all work together," and "It's up to each of us" can be used together to remind individuals of their responsibility, activate personal norms, and control fear.

### *5.3. Limitations and future research directions*

Acknowledging this study's limits is important for contextualising the results and pinpointing future research avenues. One limitation is that the study used self-reported measures. Future research could combine actual data, if possible, from supermarkets and food stores. Another limitation is that the analysis is based on cross-sectional data, which limits the ability to detect changes in shopping behaviour throughout the crisis, or before and after notable events (e.g., declaring COVID-19 a pandemic). Future research could use experimental design to establish causality among this study's variables, for example, message framing (e.g., guilt vs. pride) could be manipulated to understand the effectiveness of communications during crises. The proposed model could also be extended to consider socio-cultural dimensions (e.g., wealth, collectivism) across countries.

## **6. Conclusion**

In a society where promoting responsible consumption is becoming more and more important, this study's results have important implications for encouraging consumers to avoid stockpiling, particularly in times of crisis. To accomplish this, this study used and expanded on the norm-activation model. The results showed that awareness of the consequences, ascribed responsibility, and personal norms are all important factors in encouraging more responsible consumer behaviour during public crises. Another important finding is that both feelings of fear and feelings of moral obligation play important roles in shaping responsible consumer behaviour during crises. This study contributes to the literature by modelling the interactions between fear and personal norms and providing the first evidence of how fear weakens the link between personal norms and non-mainstream socially responsible behaviours (e.g., resisting stockpiling). The emergence of fear as a rationalisation sheds light on why responsible consumers may fail to walk their talk during the pandemic. This study's results are also useful for shedding light on the interaction between consumption and social responsibility.

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