

COVID-Stress and Compensatory Consumption Among the U.S. Consumers

Swagata Chakraborty ^{a,*}, Amrut Sadachar ^b

^a Ph.D., Assistant Professor, Department of Merchandising and Digital Retailing, University of North Texas

^b Ph.D., Associate Professor, Department of Consumer and Design Sciences, Auburn University

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ABSTRACT

Based on the cognitive dissonance theory and compensatory consumer behavior model, we tested a conceptual model on compensatory consumption during the Covid pandemic by conducting an online survey (n = 490) with the U.S. national population. Analyzing the data with structural equation modeling, we found that COVID-stress positively influenced panic buying and therapeutic shopping but did not influence need-based buying. Need-based buying negatively influenced panic buying and therapeutic shopping. MANCOVA test revealed that when both COVID-stress and perceived financial insecurity are high, panic buying and therapeutic shopping are higher as compared to when COVID-stress and perceived financial insecurity are low. Based on the findings of our study, we suggest that therapeutic shopping and panic buying could be strategies for coping with COVID-stress.

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*Corresponding Author:

swagata.chakraborty@unt.edu

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Introduction

There is increased evidence of negative psychological and emotional consequences of the COVID-19 pandemic (Addo et al., 2020; Ahmed et al., 2020; Elbogen et al., 2020; Sheffler et al., 2021). This psychological stress is referred to as COVID-stress which is stemmed from the anxiety or fear of contracting the disease, losing jobs amid the pandemic, not having enough stock of essential products, witnessing the sufferings and deaths of close ones, and getting alienated from the society (Centers for Disease Control and Prevention 2021; Hall et al., 2020; Lins & Aquino, 2020; O'Connell et al., 2021; Prentice et al., 2020; Taylor et al., 2020). Taylor et al. (2020) operationalized COVID-stress in terms of the perceived danger of COVID, adverse socio-economic consequences of the pandemic, xenophobia (i.e., fear of foreigners as potential carriers of the Corona virus), contamination of objects with Corona virus, traumatic stress and compulsive checking for COVID-related stress. The cases of depression, anxiety, and suicides has increased amid the pandemic (Elbogen et al., 2020; Sheffler et al., 2021) which suggests the adverse impacts of COVID-stress on the well-being of people around the world. In the U.S. itself, the average weekly cases of suicidal attempts were 26.2% and 50.6% higher during summer 2020 and fall 2021, respectively, compared to the cases in 2019 before the onset of the pandemic (Centers for Disease Control and Prevention 2021). Therefore, there is an urgency to identify ways to cope with COVID-stress.

Consumers often shop to escape from the reality and daydream about an imaginary world where they do not need to worry about an imminent problematic situation (Atalay & Meloy, 2011; Kang & Johnson, 2011). Shopping could be a therapy and an alternate way to deal with (Atalay & Meloy, 2011; Irwin, 2018; Kang & Johnson, 2011) and alleviate (Atalay & Meloy, 2011; Rick et al., 2014) negative psychological states. Kang and Johnson (2011) operationalized retail therapy in terms of consumers' therapeutic shopping motivation, positive mood reinforcement and negative mood reduction due to shopping and therapeutic shopping outcomes (e.g., elevated positive mood). Thus, the purpose of our study was to explore the role of shopping in alleviating COVID-stress.

After the onset of the pandemic, panic buying (i.e., buying products in excess to hoard them in the fear of getting the products out of stock or increase in the price of the products; Hall et al., 2020; Lins & Aquino, 2020; O'Connell et al., 2021; Prentice et al., 2020) and hedonic shopping (i.e., shopping of non-essential products for pleasure, entertainment, and, enjoyment; Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021; Zulauf & Wagner 2021) increased. The American consumers are well known for their indulgent shopping habits

(Amos et al., 2014; Park & Forney, 2004). Therefore, engaging in shopping to cope with the COVID-stress could be a natural extension amongst the consumers of the U.S. In this study, we conceptualized hedonic shopping as therapeutic shopping where consumers engage in shopping as a therapy (e.g., to forget about COVID-19 or to control the negative psychological state due to COVID-stress). However, many Americans have lost their jobs amid the pandemic and experienced financial insecurities (Pew Research Center, 2021). As such, it could be implied that need-based buying (i.e., buying products only when there is an absolute need for the products) could be prevalent amongst those whose perceived financial insecurity is high.

Despite the apparent connection between COVID-stress and shopping behavior, to the best of our knowledge, there is no research which empirically tested the role of COVID-stress in influencing shopping behaviors as a means to cope with COVID-stress. Therefore, the objectives of this study were to explore the influence of COVID-stress on (i) panic buying, (ii) therapeutic (hedonic) shopping, and (iii) need-based buying, and (iv) to investigate how perceived financial insecurity may moderate the relationships between COVID-stress and the three aforementioned shopping behaviors. We have proposed and empirically tested a conceptual model delineating the above-mentioned relationships, grounded on the theoretical frameworks of cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al. 2017) as discussed in the next section.

Literature Review

Theoretical Framework

Cognitive dissonance theory posited that when an individual experiences psychological distress, the individual explores different ways to reduce, control, or avoid that stress (Festinger, 1957). In the context of our study, cognitive dissonance could be described as the psychological distress that individuals experience when they want to live like there is no pandemic but unable to do so due to the various restrictions, limitations, and risks emerged due to the pandemic. As such, the individuals would explore ways to deal with that cognitive dissonance in the form of COVID-stress. Since shopping has been suggested as one of the ways to deal with negative psychological states (Atalay & Meloy, 2011; Irwin, 2018; Kang & Johnson, 2011), based on cognitive dissonance theory (Festinger, 1957), we contend that consumers will engage in different shopping behaviors (i.e., panic buying, therapeutic shopping, and need-based buying) amid the pandemic to reduce, control, and/or avoid COVID-stress.

In compensatory consumer behavior model, Mandel et al. (2017) posited that individuals consume products that symbolically represent the identity that they desire to reduce any psychological distress that they experience due to the self-discrepancy in that identity. Self-discrepancy occurs when individuals desire to achieve or maintain an identity but is unable to do so for some reason. For example, in general, American consumers are known for their indulgent consumption (Amos et al., 2014; Park & Forney, 2004). Therefore, any situation which restricts their scopes for indulgent shopping will cause a self-discrepancy in that identity of being indulgent shoppers. Since the pandemic has resulted in uncertain product availability/accessibility (Hall et al., 2020; Lins & Aquino, 2020; O'Connell et al., 2021; Prentice et al., 2020) due to businesses being shut down (Howard, 2021; Zhang & Warner, 2020), restrictions in domestic and international shipment of products (International Finance Corporation, 2020) and disrupted global supply chain, along with a reduced affordability for many consumers due to losing jobs (Pew Research Center, 2021), the perceived self-discrepancy in identity as indulgent shoppers may have been kindled amongst the American consumers. Therefore, we explored if COVID-stress encourages intentions for panic buying and therapeutic (hedonic) shopping amid the pandemic to cope with the self-discrepancy in identity as indulgent shoppers.

Based on cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model, (Mandel et al., 2017), we suggest that the influence of COVID-stress on panic buying, and therapeutic shopping are due to consumers' tendency to avoid negative psychological consequences stemmed from the self-discrepancy in identity as indulgent shoppers. For example, through panic buying and hoarding products, consumers can get a temporary relief for having all the essential products available, reducing cognitive dissonance associated with the fear of not having essential products when needed. Mandel et al. (2017) posited that individuals often buy products that can directly resolve their problems. Therefore, when the problem is uncertainty of products, buying products in excess could directly resolve the problem of not having enough stocks of those products. Moreover, individuals consume products that can help them in symbolic self-completion of the identity that they desire (Mandel et al., 2017). Thus, hoarding products can give consumers the experience of indulgence, especially when the products have limited availability, thereby reducing their self-discrepancy in identity as indulgent shoppers.

Individuals consume products when they want to escape from the reality because that escapism helps them in distracting themselves from the perceived self-discrepancy in the identity that

they desire (Mandel et al., 2017). Thus, hedonic shopping can help consumers escape the reality of the pandemic and daydream about a pandemic-free time, reducing the cognitive dissonance. Furthermore, hedonic shopping could be therapeutic which can give the consumers the feeling of indulgence, thereby reaffirming consumers' identity as indulgent shoppers.

Mandel et al. (2017) proposed that individuals consume products to dissociate themselves from situations which kindle their self-discrepancy in identity. Therefore, when the ability to indulge in shopping is low due to a high financial insecurity or unavailability/inaccessibility of products, consumers may engage in need-based buying to dissociate themselves from the situation where they need to confront their inability to shop for non-essential products. Need-based buying can help consumers dissociate themselves from that unpleasant confrontational situation and strengthen their identity of being someone having adequate stock of essential products. In summary, as described in the aforementioned discussion, we have integrated the theoretical frameworks of cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017) to support our rationale behind developing the hypotheses.

COVID-Stress and Panic Buying

Instances of panic buying has increased amid COVID-19 pandemic which emerge from a sense of fear, anxiety, and crisis (Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021). Perceived scarcity of products (Lehberger et al., 2021; Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021) and severity of the pandemic encourage panic buying to compensate for the perceived loss of control in the situations emerged due to the pandemic (Barnes et al., 2021; Yuen et al., 2021). Anticipatory regret for not buying enough stocks partially mediates the relationship between the perceived scarcity of products and panic buying (Chua et al., 2021). Based on cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017), it could be implied that consumers are buying products in excess to avoid the anticipated stress that they could experience when the essential products are needed but unavailable/inaccessible. Hoarding products also precludes the need for frequent store visits, thereby reducing the fear of getting exposed to the virus (Lehberger et al., 2021). In summary, hoarding products may give the consumers a sense of security and thereby, helping them in coping with the COVID-stress. Based on this discussion, we developed the following hypothesis:

H1: COVID-stress positively influences intentions for panic-buying.

COVID-Stress and Therapeutic (Hedonic) Shopping

Consumers often engage in impulsive and hedonic consumptions when they experience negative psychological states (Atalay & Meloy, 2011). Instances of increased shopping are observed amongst consumers to cope with the fear experienced during COVID-19 pandemic (Addo et al. 2020). Spending on non-essential products has increased that reflects consumers' hedonic motivations for curbing boredom and feeling free (Di Crosta et al., 2021). The perceived severity of the pandemic positively influenced hedonic consumption (Li et al., 2020). For example, the fear stemmed from partial lockdowns, financial insecurity, and scarcity of essential products amid the pandemic encourage the tendency for impulse buying (Ahmed et al., 2020). The threat of death due to COVID-19 is positively associated with materialistic consumption (Song et al., 2020). This suggests that higher the degree of perceived severity of the pandemic, higher will be the COVID-stress, leading to a higher intention for hedonic consumption.

Hedonic motives (i.e., the drive to have fun and pleasure) encouraged consumers to purchase fashion apparel (Sumarliah et al., 2021), tobacco (Koopman et al., 2020) and alcohol (Barbosa et al., 2021; Ramalho, 2020; Sugarman & Greenfield, 2021) amid the pandemic. This implies that shopping these non-essential products are helping consumers forget about the pandemic temporarily and plausibly reduce the stress. Based on cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017), it could be implied that to avoid the chances of immersing into the thoughts related to COVID-19 and associated negative consequences, consumers are engaging in hedonic shopping to shut off from the reality temporarily and daydream about a pandemic-free world. Based on this discussion, we propose the following hypothesis:

H2: COVID-stress positively influences intentions for therapeutic (hedonic) shopping.

COVID-Stress and Need-Based Buying

When consumers have closely experienced or are highly involved with COVID-related issues (e.g., actively follow COVID-news and discuss them with family and friends), they engage in utilitarian shopping (e.g., buying products for their usefulness and functionalities; Yang et al., 2020). Thus, when consumers are emotionally invested in COVID-related matters, they engage in need-based buying. Utilitarian motives influence online shopping behavior amid the pandemic (Cerci & Seyfi, 2021; Koch et al., 2020; Sumarliah et al., 2021), especially when consumers prioritize the practicality of the products over their symbolic qualities (Cerci &

Seyfi, 2021). The fear of COVID evokes purchase intentions for essential products especially when the purchase decisions are justified by the consumers (Di Crosta et al., 2021). Based on cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017), it could be implied that when consumers are emotionally invested in COVID-related matters, they can dissociate themselves from the need to indulge in shopping for identity maintenance as indulgent shoppers, encouraging need-based buying. Thus, we proposed the following hypothesis:

H3: COVID-stress positively influences the intentions for need-based buying.

Panic Buying, Therapeutic Shopping, and Need-Based Buying

Need-based buying is utilitarian in nature and thus, related to buying what is absolutely needed (Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021). Contrastingly, panic buying (Barnes et al., 2021; Chua et al., 2021; Lehberger et al., 2021; Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021) and therapeutic shopping (Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021; Zulauf & Wagner, 2021) are essentially related to spending more money, being indulgent, and buying in excess. Many researchers have operationalized hedonic and utilitarian shopping as contrasting buying behaviors (Cerci & Seyfi, 2021; Koch et al., 2020; Sumarliah et al., Yang et al., 2020). Therefore, we propose the following hypotheses:

H4: Intentions for need-based buying will negatively influence intentions for panic buying.

H5: Intentions for need-based buying will negatively influence intentions for therapeutic shopping.

Financial Insecurity, COVID-Stress, and Shopping Behaviors

Many Americans have lost jobs amid the pandemic which resulted in financial insecurities (Pew Research Center, 2021). Income (Yoshizaki et al., 2021) and perceived economic stability (Di Crosta et al., 2021) positively correlate with panic buying amid the pandemic. However, researchers have not addressed how COVID-stress may interact with the perceived financial insecurity to influence the shopping behaviors. Job insecurity is one of the primary reasons for experiencing COVID-stress (Ganson et al., 2021; Wilson et al., 2020). Therefore, financial insecurity could aggravate the COVID-stress. Based on cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017), we contend that with

a higher degree of perceived financial insecurity, the need to avoid or alleviate the COVID-stress will be high. Based on this discussion, we propose the following hypotheses:

H6: The perceived financial insecurity will moderate the relationship between COVID-stress and shopping behaviors. Specifically, when both perceived financial insecurity and COVID-stress are high the intentions for (H6a) panic buying, (H6b) therapeutic shopping, and (H6c) need-based buying will be higher as compared to when the perceived financial insecurity and COVID-stress are low.

Based on the hypotheses 1-5, we proposed the following conceptual model (Figure 1):

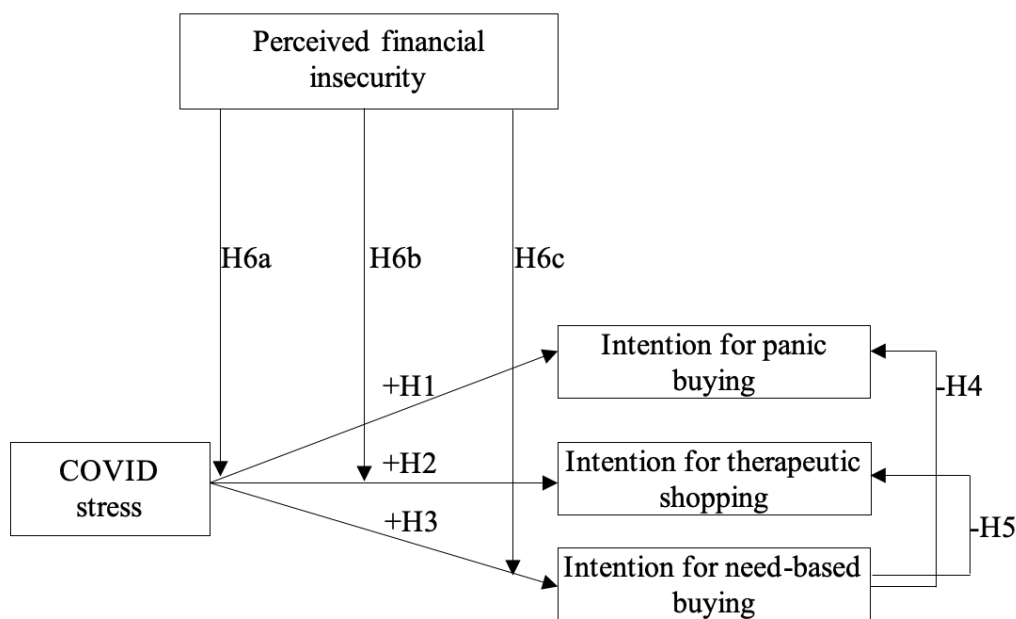


Figure 1. Conceptual model

Method

Research Design

An online survey was administered using the platform of Qualtrics.

Sample and Procedure

The target population for the study included the national population in the U.S. recruited from Amazon Mechanical Turk (MTurk). Following a purposive sampling method, we used screening questions to ensure that only those MTurkers entered the survey who were 19 years or older and currently residing in the U.S. The ineligible respondents were thanked for their interest in the survey and taken to the termination page of the survey. Before taking the survey, the respondents consented to the Institutional Review Board approved information letter. 50 cents were given to the respondents after the successful completion of the survey.

Instrument

A structured questionnaire was used to collect the data. We measured COVID-stress (Taylor et al., 2020), intentions for panic-buying (Lins & Aquino, 2020), therapeutic shopping (Kang & Johnson, 2011), and need-based buying (Jones et al., 2006), and perceived financial insecurity (Lawrence et al., 2013; Odle-Dusseau et al., 2018; Wilson et al., 2020) by adapting extant measurement scales. All the variables were measured in 5-point Likert scales (1 = strongly disagree; 5 = strongly agree). Attention check questions (e.g., Please click on strongly agree if you are reading this statement) were included to minimize chances of straight liner responses.

Data Analysis and Results

A total of 640 responses were collected. We deleted 150 responses because the respondents were ineligible for the survey or did not answer the attention check questions correctly. 490 was the useable sample size.

Demographics

A majority of the respondents were 50 years or older ($f = 172$; 35.1%) or between 30-39 years ($f = 138$; 28.2%); female ($f = 275$; 56.1%); had a 4-year college degree ($f = 232$; 47.3%), professional or technical occupation ($f = 164$; 33.5%) and an annual household income between \$31,000 to \$60,000 ($f = 149$; 30.4 %); were married ($f = 267$; 54.5%) and Caucasian ($f = 376$; 76.7%) (see Table 1).

Table 1

Sample Profiling

| Measures | Categories | <i>f</i> | % |
|----------------|---|----------|-------|
| Age (in years) | 19–29 years | 74 | 15.10 |
| | 30–39 years | 138 | 28.16 |
| | 40–49 years | 106 | 21.63 |
| | 50 years and older | 172 | 35.10 |
| Gender | Male | 208 | 42.4 |
| | Female | 275 | 56.1 |
| | Preferred not to say | 7 | 1.4 |
| | Some high school, no diploma | 6 | 1.2 |
| | High school graduate, diploma or the equivalent | 64 | 13.1 |

| Measures | Categories | <i>f</i> | % |
|--|---|----------|------|
| Highest level of educational qualification | Technical or vocational training | 57 | 11.6 |
| | College degree (4 years) | 232 | 47.3 |
| | Some graduate school | 26 | 5.3 |
| | Graduate degree (master's, doctorate, etc.) | 105 | 21.4 |
| Occupation | Retired | 41 | 8.4 |
| | Professional or technical (e.g., accountant, artist, computer specialist, engineer, nurse, doctor, teacher) | 164 | 33.5 |
| | Manager or administrator (non-farm) | 66 | 13.5 |
| | Sales worker (e.g., insurance, salesperson, real estate salesperson, sales clerk, stockbroker) | 59 | 12 |
| | Clerical worker (e.g., bank teller, bookkeeping, office clerk, postal worker, secretary, teachers' aide) | 55 | 11.2 |
| | Craftworker (e.g., baker, carpenter, electrician, foreman, jeweler, mechanic, plumber, tailor) | 10 | 2 |
| | Machine operator or laborer (e.g., driver, conductor, factory worker) | 10 | 2 |
| | Farmer, farm manager, or farm laborer | 6 | 1.2 |
| | Service worker or private household worker (e.g., barber, bartender, cook, firefighter, police officer, waiter) | 30 | 6.1 |
| | Military | 2 | .4 |
| | Homemaker | 27 | 5.5 |
| | Unable to work/unemployed | 17 | 3.4 |
| | Student | 3 | .6 |
| Annual household income (in USD) | 30,000 or less | 87 | 17.8 |
| | 31,000 to 60,000 | 149 | 30.4 |
| | 61,000 to 90,000 | 128 | 26.1 |
| | 91,000 to 120,000 | 66 | 13.5 |
| | 121,000 to 150,000 | 30 | 6.1 |
| | 151,000 or more | 30 | 6.1 |
| Marital status | Single, never married | 134 | 27.3 |
| | Married | 267 | 54.5 |
| | Widowed | 15 | 3.1 |
| | Divorced | 61 | 12.4 |

| Measures | Categories | <i>f</i> | % |
|-----------|--------------------------|----------|------|
| | Separated | 7 | 1.4 |
| | Co-habiting | 4 | .8 |
| | In a relationship/dating | 2 | .4 |
| Ethnicity | Asian/Pacific islander | 44 | 9 |
| | Caucasian | 376 | 76.7 |
| | African American | 50 | 10.2 |
| | Latino/Hispanic | 14 | 2.9 |
| | Mixed/biracial | 5 | 1 |
| | Native American | 1 | .2 |

Reliability and Validity

Confirmatory Factor Analysis (CFA) was performed in MPlus to check the validity of the measurement scales. The measurement model fitted the data well ($\chi^2 = 6267.11$, $df = 3057$, $p = .001$, $\chi^2/df = 2.05$; RMSEA = .05, $p = .60$; CFI = .91, TLI = .91, SRMR = .06). The average variance extracted (AVE) ranged between .53 to .77 for all the scales and the sub-factors indicating adequate convergent validity. All the variables were treated as latent variables. COVID-stress and therapeutic shopping were treated as second-order measurement scales. The sub-factors, danger, socio-economic consequences, xenophobia, contamination, traumatic stress and positive compulsive checking measured COVID-stress. The sub-factors, shopping motivation, positive mood reinforcement, negative mood reduction, and therapeutic shopping outcomes measured therapeutic shopping. The Cronbach's alpha and composite reliabilities of all the scales were between .84 to .98, indicating adequate reliability. The square root of the AVEs of all the scales were higher than the correlations between the different constructs, indicating adequate discriminant validity. Composite score for perceived financial insecurity was calculated as the mean of the ratings in the scale for hypothesis testing (see in Tables 2 and 3).

Table 2

Measurement Scale Items with Their Factor Loadings from CFA and Reliabilities

| Items | CFA Factor Loading | AVE | CR | α |
|-----------------------------|--------------------------|-----|-----|----------|
| COVID-Stress | | .78 | .95 | .98 |
| COVID-Stress: Danger | .80 | .65 | .92 | .92 |

| Items | CFA Factor Loading | AVE | CR | α |
|--|--------------------------|-----|-----|----------|
| 1. I am worried about catching the virus. | .74 | | | |
| 2. I am worried that I can't keep my family safe from the virus. | .82 | | | |
| 3. I am worried that our healthcare system won't be able to protect my loved ones. | .82 | | | |
| 4. I am worried that our healthcare system is unable to keep me safe from the virus. | .83 | | | |
| 5. I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus. | .82 | | | |
| 6. I am worried that social distancing is not enough to keep me safe from the virus. | .81 | | | |
| COVID-Stress: Socio-economic consequences | .90 | .69 | .93 | .93 |
| 7. I am worried about grocery stores running out of food. | .85 | | | |
| 8. I am worried that grocery stores will close down. | .83 | | | |
| 9. I am worried about grocery stores running out of cleaning or disinfectant supplies. | .76 | | | |
| 10. I am worried about grocery stores running out of cold or flu remedies. | .85 | | | |
| 11. I am worried about grocery stores running out of water. | .86 | | | |
| 12. I am worried about pharmacies running out of prescription medicines. | .84 | | | |
| COVID-Stress: Xenophobia | .83 | .71 | .94 | .94 |
| 13. I am worried that foreigners are spreading the virus in my country. | .86 | | | |
| 14. If I went to a restaurant that specialized in foreign foods, I would be worried about catching the virus. | .79 | | | |
| 15. I am worried about coming into contact with foreigners because they might have the virus. | .88 | | | |
| 16. If I met a person from a foreign country, I would be worried that they might have the virus. | .88 | | | |
| 17. If I was in an elevator with a group of foreigners, I would be worried that they are infected with the virus. | .81 | | | |
| 18. I am worried that foreigners are spreading the virus because they are not as clean as we are. | .83 | | | |
| COVID-Stress: Contamination | .88 | .64 | .91 | .92 |
| 19. I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus. | .82 | | | |
| 20. I am worried that if someone coughed or sneezed near me, I would catch the virus. | .70 | | | |
| 21. I am worried that people around me will infect me with the virus. | .74 | | | |
| 22. I am worried about taking change in cash transactions. | .86 | | | |
| 23. I am worried that I might catch the virus from handling money or using a debit machine. | .87 | | | |
| 24. I am worried that my mail has been contaminated by mail | .80 | | | |

| Items | CFA Factor Loading | AVE | CR | α |
|---|--------------------------|-----|-----|----------|
| handlers. | | | | |
| COVID-Stress: Traumatic stress | .94 | .71 | .94 | .94 |
| 25. I had trouble concentrating because I kept thinking about the virus. | .87 | | | |
| 26. Disturbing mental images about the virus popped into my mind against my will. | .89 | | | |
| 27. I had trouble sleeping because I was worried about the virus. | .87 | | | |
| 28. I thought about the virus when I did not mean to. | .74 | | | |
| 29. Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart. | .83 | | | |
| 30. I had bad dreams about the virus. | .86 | | | |
| COVID-Stress: Compulsive checking | .93 | .59 | .89 | .90 |
| 31. I searched the Internet for treatments for COVID-19. | .74 | | | |
| 32. I keep asking the health professionals (e.g., doctors or pharmacists) for advice about COVID-19. | .82 | | | |
| 33. I watched YouTube videos about COVID-19. | .66 | | | |
| 34. I keep checking my own body for signs of infection (e.g., taking my temperature). | .80 | | | |
| 35. I keep seeking reassurance from friends or family about COVID-19. | .81 | | | |
| 36. I keep checking social media posts concerning COVID-19. | .75 | | | |
| Panic buying | | .71 | .95 | .94 |
| 1. Fear drives me to buy things to stock at home. | .91 | | | |
| 2. The fear of not having the products that I need leads me to buying more things. | .82 | | | |
| 3. I panic when I think that essential products may run out from the shelves, so, that is why I prefer to buy them in bulk. | .87 | | | |
| 4. Fear drives me to buy more than I usually do. | .89 | | | |
| 5. Panic makes me buy more things than I usually do. | .87 | | | |
| 6. One way to relieve the feeling of uncertainty is to make sure that I have a good amount of the products that I need at home. | .70 | | | |
| 7. The feeling of uncertainty influences my buying habits. | .83 | | | |
| Therapeutic shopping | | .93 | .98 | .97 |
| Therapeutic shopping: Motivation | .98 | .75 | .95 | .95 |
| 1. I shop to relieve my stress. | .87 | | | |
| 2. I shop to cheer myself up. | .89 | | | |
| 3. I shop to make myself feel better. | .89 | | | |
| 4. I shop to compensate for a bad day. | .84 | | | |
| 5. I shop to feel relaxed. | .87 | | | |
| 6. I shop to feel good about myself. | .84 | | | |

| Items | CFA Factor Loading | AVE | CR | α |
|--|--------------------------|-----|-----|----------|
| Therapeutic shopping: Positive mood reinforcement | .91 | .53 | .87 | .87 |
| 7. Shopping is a positive distraction. | .74 | | | |
| 8. Shopping gives me a sense of achievement. | .75 | | | |
| 9. I like the visual stimulation shopping provides. | .75 | | | |
| 10. Shopping provides me with knowledge of new styles. | .67 | | | |
| 11. I enjoy being in a pleasant environment that shopping provides. | .75 | | | |
| 12. Finding a great deal reinforces positive feelings about myself. | .71 | | | |
| Therapeutic shopping: Negative mood reduction | .99 | .68 | .92 | .92 |
| 13. Shopping is an escape from loneliness. | .79 | | | |
| 14. Shopping is a way to remove myself from stressful environments. | .86 | | | |
| 15. Shopping is a way to take my mind off things that are bothering me. | .85 | | | |
| 16. Shopping for something new fills an empty feeling. | .84 | | | |
| 17. Shopping is a way to control things when other things seem out of control. | .79 | | | |
| Therapeutic shopping: Therapeutic shopping outcomes | .98 | .67 | .91 | .91 |
| 18. My shopping trip to relieve my bad mood is successful. | .87 | | | |
| 19. After a shopping trip to make myself feel better, the good feelings generated last at least for the rest of the day. | .80 | | | |
| 20. I feel good immediately after my shopping trip to relieve a bad mood. | .83 | | | |
| 21. I use items I bought during my shopping to relieve a bad mood. | .81 | | | |
| 22. When I use items I bought during my shopping to relieve my bad mood, I remember the shopping experience. | .78 | | | |
| Need-based buying | | .57 | .84 | .84 |
| 1. While shopping, I usually look for only those items that I need. | .82 | | | |
| 2. I shop for only those products that I need. | .82 | | | |
| 3. I buy what I really need. | .68 | | | |
| 4. While shopping, I look for the item(s) that are essential. | .69 | | | |
| Perceived financial insecurity | | .85 | .94 | .95 |
| Perceived financial insecurity: Job insecurity | .83 | .77 | .91 | .91 |
| 1. I am worried about having to leave my job before I would like to. | .88 | | | |
| 2. There is a risk that I will have to leave my present job in the near future. | .85 | | | |
| 3. I feel uneasy about losing my job in the near future. | .90 | | | |

| Items | CFA Factor Loading | AVE | CR | α |
|---|--------------------------|-----|-----|----------|
| Perceived financial insecurity: Financial insecurity | .91 | .68 | .89 | .89 |
| 4. I do not have enough savings for an emergency. | .81 | | | |
| 5. I do not have financial stability. | .85 | | | |
| 6. I have trouble paying my bills on time. | .83 | | | |
| 7. I feel I do not have enough money to cover small unexpected expenses (under \$100). | .80 | | | |
| Perceived financial insecurity: Financial concern | 1.00 | .71 | .91 | .90 |
| 8. My financial situation will get much worse over the next 12 months. | .84 | | | |
| 9. I am worried about my financial situation over the next 12 months. | .86 | | | |
| 10. I am worried about my financial security for the next 12 months. | .88 | | | |
| 11. I do not have enough means to secure food and housing for myself over the next 12 months. | .79 | | | |

Table 3

Mean, Standard Deviation, and Correlations of the Research Variables

| Measures | <i>M</i> | <i>SD</i> | Correlations | | | | | |
|-----------------------------------|----------|-----------|--------------|------------|------------|------------|------------|--|
| | | | 1 | 2 | 3 | 4 | 5 | |
| 1. COVID-stress | 2.59 | .98 | .88 | | | | | |
| 2. Panic buying | 2.84 | 1.13 | .62** | .84 | | | | |
| 3. Therapeutic shopping | 3.09 | 1.00 | .48** | .47** | .96 | | | |
| 4. Need-based buying | 3.94 | .79 | -.03 | -.12* | -.27** | .75 | | |
| 5. Perceived financial insecurity | 2.63 | 1.08 | .60** | .42** | .30** | -.01 | .92 | |

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Numbers in bold in the diagonal represent the square roots of the AVEs of the constructs.

Hypotheses Testing

Hypotheses 1-5 were tested through Structural Equation Modeling (SEM) in MPlus. The SEM model fitted the data well ($\chi^2 = 4672.82$, $df = 2261$, $p = .001$, $\chi^2/df = 2.07$; RMSEA = .05, $p = .60$; CFI = .92, TLI = .92, SRMR = .06). H1 ($\beta = .66$, $p < .001$), H2 ($\beta = .52$, $p < .001$), H4 ($\beta = -.12$, $p < .01$), and H5 ($\beta = -.29$, $p < .001$) were supported. H3 ($\beta = -.03$, $p > .05$) was rejected

(see

Figure

2).

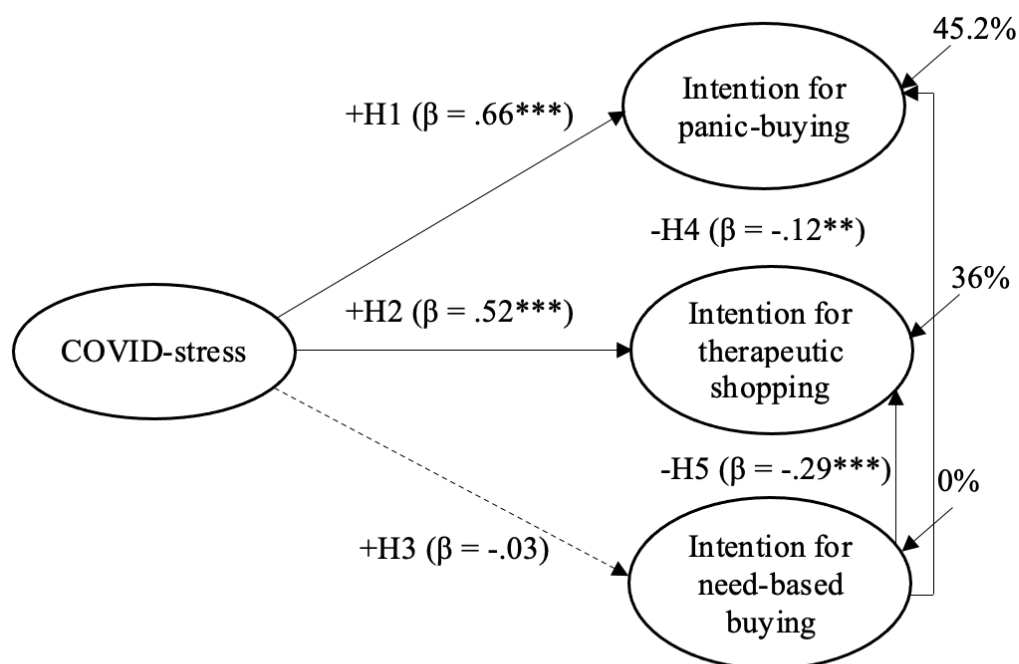


Figure 2. Path diagram with the standardized path coefficients. Solid lines indicate supported hypotheses and dotted lines indicated unsupported hypotheses. $**p < .01$, $***p < .001$.

H6 was tested through MANCOVA in SPSS. The categories of low ($f = 247$; 50.4%) and high ($f = 243$; 49.6%) levels of perceived financial insecurity were created by a median split method ($MED = 2.55$). H6a was marginally supported ($F = 3.33$, $df = 1$, $p = .07$; partial $\eta^2 = .01$, observed power = .45). H6b ($F = 3.97$, $df = 1$, $p < .05$; partial $\eta^2 = .01$, observed power = .51) was supported. H6c ($F = .80$, $df = 1$, $p = .37$; partial $\eta^2 = .00$, observed power = .15) was rejected.

Discussion and Implications

There has been an upsurge in negative psychological states amongst people with increased cases of anxiety, depression, and suicides amid the COVID-19 pandemic (Elbogen et al., 2020; Sheffler et al., 2021). Therefore, it demands alternative ways to cope with the stress that people are experiencing during the pandemic. Previously, researchers found shopping as a means to cope with negative psychological states (Atalay & Meloy, 2011; Irwin 2018; Kang & Johnson, 2011; Rick et al., 2014). Therefore, we explored how COVID-stress influences different shopping behaviors, opening a new avenue for research suggesting shopping as a tool to cope with COVID-stress.

Theoretical Implications and Future Research Directions

Researchers indicated changes in consumer behavior after the onset of the COVID-19 pandemic. Primarily, researchers indicated an increase in panic buying (Hall et al., 2020; Lins & Aquino, 2020; O'Connell et al., 2021; Prentice et al., 2020) and hedonic shopping (Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021; Zulauf & Wagner, 2021). However, there is little empirical evidence showing the influence of COVID-stress on panic buying and hedonic shopping. A few researchers have indicated the role of fear and anxiety in influencing consumer behavior during the pandemic (Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021). However, to the best of our knowledge, none of the researchers considered how COVID-stress stemmed from different dimensions (e.g., perceived danger, socio-economic consequences, xenophobia, contamination, traumatic stress, and compulsive checking) influence consumer behavior. Based on the theoretical frameworks of cognitive dissonance theory (Festinger, 1957) and compensatory consumer behavior model (Mandel et al., 2017), we filled this gap in the literature. Integrating compensatory consumer behavior model (Mandel et al., 2017), we proposed connections between different coping strategies with specific buying behaviors (e.g., direct resolution with panic buying, escapism with therapeutic shopping, and dissociation with need-based buying) as describe below.

COVID-stress positively influenced panic buying. Previously, researchers have primarily focused on how the perceived fear (Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021), severity of the pandemic (Barnes et al., 2021; Yuen et al., 2021), and scarcity of products (Lehberger et al., 2021; Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021) lead to panic buying. We expanded to that literature by including different dimensions of COVID-stress in our model, thereby adding nuances on the antecedents of panic buying behavior. We supported cognitive dissonance theory (1957) and compensatory consumer behavior model (Mandel et al., 2017) by suggesting that when consumers experience negative psychological states in the form of COVID-stress they engage in panic buying to hoard essential products to directly resolve the problems related to unavailability/inaccessibility of essential products. However, we did not test if panic buying actually reduced COVID-stress after buying products in excess. Therefore, researchers can measure COVID-stress before and after consumers engage in panic buying to evaluate the degree to which panic buying helps in alleviating COVID-stress. Moreover, our research was cross-sectional. Therefore, we did not measure the duration up to which the plausible recuperative effect of panic buying may stay to control/alleviate COVID-stress. This gap could be addressed in the future research.

Researchers indicated that people shop to deal with negative psychological and emotional states (Atalay & Meloy, 2011; Irwin, 2018; Kang & Johnson, 2011; Rick et al., 2014). We contribute to the recent literature which indicated an upsurge in hedonic (Di Crosta et al., 2021), impulsive (Ahmed et al., 2020), and materialistic (Song et al., 2020) consumption amid the pandemic by adding that COVID-stress encourages therapeutic (hedonic) shopping. Since hedonic shopping is about shopping for daydreaming, escaping reality, and self-rewarding (Barbosa et al., 2021; Koopman et al., 2020; Ramalho, 2020; Sugarman & Greenfield, 2021; Sumarliah et al., 2021), we suggest that hedonic shopping during pandemic will help the consumers escape the unpleasant realities of the pandemic and temporarily replace or suppress negative psychological experiences with pleasant and uplifting states. Mandel et al. (2017) mentioned that when consumers have self-discrepancy in identity, they often engage in consumptions that help them in escaping the reality where they need to face the self-discrepancy in identity. Integrating this proposition with cognitive dissonance theory (Festinger, 1957) that individuals try to find ways to reduce or control self-discrepancy, we suggest that hedonic shopping can help American consumers reaffirm their indulgent shopper's identity which is threatened due to the rampant closures of business, unavailability/inaccessibility of products, and reduced affordability for many due to job losses amid the pandemic.

Interestingly, despite the instances of job losses and financial insecurities that the Americans experienced during the pandemic (Pew Research Center, 2021; Ganson et al., 2021; Wilson et al., 2020), we did not find a significant relationship between COVID-stress and need-based buying. When individuals experienced the effects of the pandemic closely and/or are highly involved with the news related to the pandemic, they engage in utilitarian shopping (i.e., shopping for the practical use of the products; Yang et al., 2020) after evaluating the actual need of the products (Cerci & Seyfi, 2021; Koch et al., 2020; Sumarliah et al., 2021). Our results contradict this literature. Irrespective of the level of perceived financial insecurity, there were no significant differences in need-based buying amongst the respondents in the study. There could be several possible explanations for this result.

First, since American consumers are known for their indulgent shopper's identity (Amos et al., 2014; Park & Forney, 2004), the perceived financial insecurity may have aggravated the self-discrepancy in that identity, compelling them to avoid need-based buying because utilitarian shopping may reaffirm their inability to indulge in shopping. This explanation is supported by our findings that both panic buying and therapeutic shopping were higher when both COVID-

stress and perceived financial insecurity were high. Therefore, the increased self-discrepancy in identity may have aggravated the COVID-stress which encouraged panic buying and therapeutic shopping, both of which indicate overspending and indulgent shopping. Second, to portray oneself as financially stable, the respondents may have indicated lower perceived financial insecurity in the survey, thereby bringing error in the data due to social desirability bias. Third, only 3.4% of the respondents were unemployed/unable to work. Therefore, the difference in perceived financial insecurity may not have been significant amongst the respondents to reflect the urge to engage in need-based buying due to having different levels of perceived financial insecurities. Future studies can test our proposed conceptual model with a representative sample of the U.S. with varying degrees of perceived financial insecurities.

To the best of our knowledge, there is no research on how need-based buying, driven by utilitarian motives, could be related to panic buying and therapeutic (hedonic) shopping amid the pandemic. We contributed to the literature by indicating that need-based buying is negatively related to both panic buying and therapeutic shopping. We support the extant literature that utilitarian buying (i.e., need-based buying) is different in nature when compared to panic buying and hedonic shopping (Cerci & Seyfi, 2021; Koch et al., 2020; Yang et al., 2020). Specifically, need-based buying is driven by the motivation of buying something for its practical value and usefulness amid the pandemic (Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021). Although panic buying is related to buying essential products (Barnes et al., 2021; Chua et al., 2021; Lehberger et al., 2021; Leung et al., 2021; Yoshizaki et al., 2020; Yuen et al., 2021), the need to buying in excess and hoarding indicate indulgence and impracticality. Therapeutic (hedonic) shopping, in contrast, is driven primarily by the motivation to feel good, escape an unpleasant reality, and daydream about a pandemic-free world (Cerci & Seyfi, 2021; Di Crosta et al., 2021; Koch et al., 2020; Sumarliah et al., 2021; Zulauf & Wagner, 2021). However, we did not test the effect of different motivations that may have guided the different shopping behaviors amid the pandemic. This research gap could be addressed in the future research.

Managerial Implications

Brands could think of alternate ways to offer products at a lower price, or options for paying in installments and renting products, minimizing the need to pay for the products at one time. For example, buy now, pay later (BNPL) programs are adopted by brands like Amazon and Target in partnerships with BNPL startups like Affirm, Klarna, and Afterpay. Since hedonic shopping is higher when both COVID-stress and perceived financial insecurity are high, the

aforementioned strategies would help especially those consumers who are undergoing COVID-stress and financial instability. Since hedonic shopping is driven by a need for experiencing pleasure, brands and marketers from different industries have a lot of leeway to help this population deal with COVID-stress through different products (e.g., apparel, jewelry, movies, books, etc.). Therefore, the brands should strategically frame their messages emphasizing how their products can help the consumers daydream about a pandemic-free world and cope with COVID-stress. There has been an increase in consumption of addictive products amid the pandemic (e.g., tobacco and alcohol; Barbosa et al., 2021; Koopman et al., 2020; Sugarman & Greenfield, 2021; Ramalho, 2020) which may negatively impact consumers' health and aggravate COVID-stress further. Therefore, if a wide variety of non-addictive hedonic products (e.g., apparel, movies) are available at reasonable prices, then the need to consume addictive products might be minimized.

Since panic buying is higher when both COVID-stress and perceived financial insecurity are high, brands could offer a retailing option where consumers can reserve certain allowed quantities of essential products by paying a nominal charge for reserving those products (e.g., 10% of the price of the product) and place the order when they actually need them. Panic buying often leads to wastage of products, especially when the products have low shelf life (e.g., food, medicines). Therefore, the above-mentioned strategy will give the consumers the security of having access to the essential products while minimizing chances of products getting wasted. Paying a nominal reserving charge will help consumers save money because they are not paying for the entire bulk of the products at one time, thereby helping in lowering financial insecurity.

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