When should retailers increase prices during a crisis? A longitudinal inquiry during the COVID-19 pandemic

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Abstract
The consumer price index in the United States has increased since the COVID-19 outbreak. Little is known about how consumers perceive price increases during such a crisis. Our research focuses on how consumers' price fairness perceptions change at different time points of the COVID-19 pandemic. Results from a longitudinal study (April–May, 2020, N = 271) suggest that when the lockdown restrictions were eased, consumers experienced changes in affect and perceived price increases to be less unfair. Our analysis reveals that such an effect was driven by changes in positive affect rather than negative affect. This research advances pricing literature by showing that affect, triggered by external situations such as a crisis, influences price fairness perceptions over and above the negative affect induced by the price increase.

1 | INTRODUCTION

The COVID-19 pandemic has negatively impacted consumer well-being. Restrictions due to lockdown, economic hardship, and health concerns among people are some of the consequences of this crisis. Due to these, people have reported drastic changes in emotions over the past few months (Pfefferbaum & North, 2020). For instance, recent research indicates that nearly half of people in the United States feel anxiety due to the COVID-19 (American Psychiatric Association, 2020), and adult depression rate in the United States has been tripled amid the COVID-19 (Beusekom, 2020). The crisis has also affected retailing businesses. Retailers face various challenges, including supply chain and inventory management, delivery, and keeping a safe environment for their facility (Roggeveen & Sethuraman, 2020). A recent survey of business owners finds that more than 40% of small businesses have more financial outflows than inflows during the COVID-19 crisis (Alekseev et al., 2020). In particular, the COVID-19 triggered temporary closures of plants and retailing channels leading to disruptions in supply chains. This has resulted in a general increase in prices of products and services in the United States market (Johansson, 2020; U.S. Bureau of Labor Statistics, 2020). Hence, consumers have encountered price increases during this crisis (Mead et al., 2020). In fact, recent research finds that more than 44% of grocery shoppers have noticed price increases since the onset of COVID-19 (Levin, 2020).

Pricing literature has investigated consumers’ fairness perceptions of price increases (Bolton & Alba, 2006; Bolton et al., 2010; Herrmann et al., 2007; Martin et al., 2009; Xia et al., 2004). A general consensus in the literature is that consumers generally perceive price increases as unfair and that such unfairness perceptions arise because consumers experience negative affect from price increases (Xia et al., 2004). However, these studies do not consider how consumers’ affective states vary during turbulent times and whether such variations impact consumers’ price fairness perceptions.

Recent research finds significant variations in people’s affective states during the COVID-19 pandemic (Aslam et al., 2020; Canet-Juric et al., 2020). We argue that such variations in affect have a significant impact on consumers’ evaluations of price increases. Considering such an impact of state affect, which has been neglected in past studies, is valuable in understanding how consumers evaluate price increases during a crisis. Accounting for the key role of crisis-induced variations in affect, we develop a theoretical framework to examine consumers’ perceptions of price fairness during different times of crisis. In assessing price fairness perceptions, we not only account for the emotional impact of price increases, but also consider the emotional impact of the COVID-19 pandemic. In doing so, we extend the current understanding of how price increases impact consumers.
2 | CONCEPTUAL BACKGROUND

2.1 | Price fairness

Price fairness refers to “consumers’ subjective assessment of whether a price is right, just, and reasonable” (Campbell, 2007; Xia et al., 2004). A review of price fairness research by Xia et al. (2004) suggests that consumers engage in affective processing when evaluating price increases. The review suggests that price increases generally evoke negative emotions, and such emotions shape consumers’ judgment and decision-making. Campbell (2007) also finds that negative affect leads to a perception of price unfairness. While existing literature implicates the role of negative affect in guiding price fairness perceptions, there has been little acknowledgment of the role of positive affect. Notably, the sparse research that has examined price fairness perceptions during a crisis also emphasizes negative affect only (Ferguson et al., 2011). We do not contest that negative affect arising from price increases leads to a perception of price unfairness. Rather, we argue that in addition to experiencing negative affect from price increases, consumers will experience changes in state affect during different times of a crisis.

2.2 | Crisis-induced state affect

Crisis-induced emotions can be thought of as state affect, which refers to “shifts in current moods produces primarily by external events” (Baron, 2008, p. 328). Past research shows that consumers' state affect (henceforth, affect) induced by an external stimulus impact their judgment and decision-making (Baker et al., 2013; Hong & Lee, 2010; Lee & Sternthal, 1999; Peine et al., 2009). People experience changes in affect during and after a crisis (Fredrickson et al., 2003; Garnefski et al., 2005; Västfjäll et al., 2008), and the COVID-19 crisis is no exception. Around mid-April 2020, the COVID-19 pandemic was spreading quickly in the United States, and to flatten the curve, most of the states enforced strict lockdowns. The lockdowns led to disruptions in normal life (Zhang et al., 2020). For example, people work and interact with each other differently in strict lockdowns. Around mid-May 2020, as the number of new cases started decreasing, many states started reopening in a phased manner. These two-time points (mid-April vs. mid-May) may impact people's state affect differently.

The enforcement of strict lockdowns in mid-April 2020 brought about social isolation, economic hardship due to loss of income, an increase in physical and mental illnesses, and lingering fear about the future. A combination of one or more of these factors led to an increase in negative affect and a decrease in positive affect among people (Chao et al., 2020; Zhang et al., 2020). However, around mid-May 2020, a period of less strict lockdowns and easing of regulations in public life ensued. Such easing caused a surge in positive affect among people (Sun et al., 2020; Zhao & Xu, 2020). The surge in positive affect was a result of people getting an opportunity to engage in many activities that they wished to but could not engage in the preceding months. From outdoor activities to social interactions, a surge in the level of normal activity led to a substantial improvement in people's affective states. A period of returning normalcy, following a period of strict lockdowns, accentuated the positive feelings experienced by consumers as lockdowns were eased.

2.3 | Positive affect and consumers' processing of price

Prior research indicates that positive affect arising from a transition in mood is a key influencer on consumer behavior (Adaval, 2001). Hellén and Sääksjärvi (2011) find that consumers who are happier evaluate service quality more favorably. Suri et al. (2002) investigate the role of positive affect on price evaluations and find that affective responses influence consumers’ processing of price information. Lerner et al. (2004) also find a carryover effect of positive affect on the evaluation of irrelevant stimuli. A review of the impact of positive affect on consumer decision-making by Isen (2001) also suggests that positive affect leads to behaviors such as generosity and acceptance.

Positive affect may also play a key role in shaping price fairness perceptions. There is a consensus in the literature that consumers often use affect that they are experiencing as a piece of information (Pham, 1998; Schwarz & Clore, 1983). The literature suggests that positive affect leads consumers to focus less on details and more on the big picture (Andreasen & Powers, 1975; Fredrickson & Branigan, 2005; Schmid et al., 2011; Schnall et al., 2008; Sinclair et al., 1994). Such a finding has been corroborated in pricing research, which suggests that positive affect leads individuals to process price information less thoroughly (Puccinelli et al., 2013; Suri et al., 2002). Further, past research suggests that higher scrutiny of price information leads consumers to use price more in its traditional role as an indicator of monetary sacrifice (Suri & Monroe, 2003). Perceptions of higher monetary sacrifice led consumers to perceive the increased price as less fair. In contrast, less thorough processing of price information decreases perceived monetary sacrifice (Suri & Monroe, 2003). Hence, it is likely that when consumers experience an increase (decrease) in positive affect, they will process price information less (more) thoroughly and will perceive the price increase to be less (more) unfair. Drawing on these insights, we propose that consumers’ evaluations of prices will be different depending on the lockdown situation. During the period of strict lockdowns, negative affect is likely to dominate consumers’ evaluations such that they will perceive a price increase by a retailer as unfair. However, when the lockdowns are eased, consumers are likely to evaluate price increases as less unfair. Such a difference arises from a surge in positive affect with easing of lockdowns. Thus,

H1. Consumers’ perceived price fairness increases when the COVID-19 related lockdowns are eased.

H2. Consumers’ positive affect mediates the impact of the ease of COVID-19 related lockdowns on perceived price fairness.
3 | STUDY 1

The purpose of study 1 is twofold. First, study 1 longitudinally examines consumers’ fairness perceptions of price increases at two-time points during the COVID-19 crisis—(a) when lockdowns were strictly enforced across the United States (April 19, 2020), and (b) when the lockdowns were eased across the United States (May 14, 2020). Second, study 1 tests the mediating role of consumers’ affect status on the relationship between the time points and perceived price fairness.

3.1 | Participants, design, and procedure

At stage 1, 404 participants from Amazon’s Mechanical Turk (MTurk) completed the study for a small compensation. Out of the 404 participants, 369 participants passed the attention checks. At stage 2, these 369 participants were invited and 277 of them completed the study. Out of the 277 responses we collected at stage 2, 271 participants (46.1% females, Mage = 41.6 years) passed the attention checks and were included in the analysis (Abby & Meloy, 2017; Kees et al., 2017).

To ensure that the same participants completed the study in both stages, we used their unique MTurk ID. Using the unique MTurk ID of participants allowed us to compare their responses on the variables of interest between the two stages. In other words, the analysis examined differences between the two stages for each participant. Table 1 summarizes the profile of participants.

At the beginning of the study, participants were asked to imagine they were shopping online for a pizza and a candle. To enhance the generalizability of our findings, we included both necessity (i.e., food) and nonnecessity (i.e., decor) product categories in our study. Next, participants viewed the two products in a random order and imagined that they decided to purchase each of these products (see Appendix A for detailed information). Afterward, participants saw a checkout page. On the checkout page, participants saw a price increase (original price: $8.49, final price: $9.99; see Appendix B for detailed information). After viewing the checkout page for each product, participants indicated perceived price fairness on four items (i.e., 1 = “Unfair, Unjust, Unreasonable, Unacceptable,” and 7 = “Fair, Just, Reasonable, Acceptable,”; α = .97), adopted from Bolton and Alba (2006). Next, participants were asked to think of the situation they were currently in because of the COVID-19 crisis, and to indicate their affect on four items: two positive affect items (happy and relaxed) and two negative affect items (angry and fearful) adapted from Watson et al. (1988). We averaged the respective items to form indices of positive affect (r = 0.71) and negative affect (r = 0.61).

3.2 | Results

3.2.1 | Perceived price fairness

A paired-samples t test revealed a significant difference in perceived price fairness between the two stages (t(541) = 4.60, p < .001). Perceived price fairness was significantly higher at stage 2 (M = 3.64) than at stage 1 (M = 3.30). Hence, hypothesis 1 was supported.

3.2.2 | Affect change

A paired samples t test revealed a significant change in positive affect between the two stages (t(541) = 4.26, p < .001), with positive affect being higher at stage 2 (M = 4.30) than at stage 1 (M = 4.08). The change in negative affect between the two stages was also significant (t(541) = −3.99, p < .001), with negative affect being lower at stage 2 (M = 2.23) than at stage 1 (M = 2.44).

3.2.3 | Mediation analysis

To test the impact of changes in positive and negative affect on participants’ price fairness perceptions, we performed a repeated-measures mediation analysis with 10,000 bootstrap samples using MEMORE (Montoya, 2018, 2019). MEMORE allows testing for mediation in a repeated measures design by accounting for the difference in the dependent variable measured at two stages (Y2−Y1) as a function of the difference in the mediator measured at the two stages (M2−M1). We conducted the mediation analysis with positive affect and negative affect as parallel mediators. The analysis revealed that positive affect mediated the effect of the crisis stage on price fairness perceptions (indirect effect = 0.04, SE = 0.02, CI = [0.01, 0.08]), but negative affect did not mediate the effect (indirect effect = −0.03, SE = 0.02, CI = [−0.06, 0.00]). Further, the contrast between the two mediators (positive vs. negative affect) in terms of the mediating effect revealed a significant difference (contrast = 0.07, CI = [0.03, 0.11]; see Figure 1). Hence, hypothesis 2 was supported.

3.3 | Discussion

Results from study 1 suggest that as the COVID-19 lockdown restrictions reduced, participants perceived price increases to be less unfair.

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**TABLE 1** Summary of the profile of participants (Study 1)

|                  | Stage 1 | Stage 2 |
|------------------|---------|---------|
| N                | 369     | 271     |
| Gender           | 46.9% Female | 46.1% Female |
| Average age      | 40.0 years | 41.6 years |
| % of responses from Midwest | 17.3 | 18.1 |
| % of responses from Northeast | 19.2 | 20.7 |
| % of responses from South | 37.7 | 38.0 |
| % of responses from West | 25.8 | 23.2 |

Note: In both stages, we have participants from all four Census Bureau-designated regions in the United States (for classification, see https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf).
Such an effect was mediated by an increase in positive affect as the lockdowns eased. Although negative affect attenuated over time, the decline in negative affect did not mediate the change in participants’ fairness perceptions to price increases. To further validate the role of change in positive affect as the underlying mechanism, we conducted a follow-up qualitative study (N = 45; 44.4% female; M_age = 37.6; MTurk). Participants were randomly assigned to one of the two conditions (mid-April, 2020 vs. mid-May, 2020), read a scenario describing the COVID-19 situation around either mid-April, 2020 or mid-May, 2020 (see Appendix C for detailed information). Next, participants recalled their experiences during that time and described how they felt at that time. Two research assistants blind to the research questions counted the numbers of words related to either positive (e.g., excited, relieved, happy) or negative (e.g., stressed, sad, crying) affect. A chi-square test revealed a significant difference in participants’ affect between the two conditions (χ²[1, N = 112] = 6.18, p = .013), with the difference being driven by the changes in positive affect (Positive affect mid-April = 9.61%, Positive affect mid-May = 28.33%). These findings further validate our arguments.

4 | STUDY 2

The findings from study 1 provide support for our hypotheses. The purpose of study 2 is to elicit additional evidence to the role of positive affect in shaping consumers’ price fairness perceptions by manipulating consumers’ positive affect in a controlled online experiment. Specifically, we examined the effect of change in positive affect on price fairness perceptions and depth of price information processing. Furthermore, prior research suggests that consumers’ evaluations of necessity (nonnecessity) products are less (more) influenced by consumers’ affective states (Adaval, 2001; Patrick et al., 2007). Hence, study 2 seeks to provide a more conservative test by using only a necessity product category (i.e., trash bag).

4.1 | Pretest

A common practice to avoid priming participants is to conduct pretests of manipulations in studies (Duke & Amir, 2019; Paharia, 2020; Perdue & Summers, 1986). Thus, we pretested the stimuli used in study 2. We used photographs drawn from the International Affective Picture System (IAPS) to manipulate positive affect (Lang, 2005). The IAPS has been extensively used to manipulate affect (Adam et al., 2016; Huber et al., 2004; Langner et al., 2015).

First, participants indicated their level of positive affect on the two items (happy and relaxed). Next, they viewed 12 photographs from IAPS that induced either positive or neutral affect and indicated the level of positive affect again. Results confirmed that before exposure to the IAPS images, there was no difference in the level of positive affect between the two conditions (M_pos = 4.75; M_neg = 4.78; t[157] = −0.13, p = .90). However, after exposure to the IAPS images, participants in the positive affect condition indicated a significantly higher level of positive affect (M_pos = 5.25) compared to participants in the neutral affect condition (M_neg = 4.82; t[157] = 2.05, p = .042). These results suggest that the manipulation had the intended effect.

4.2 | Participants, design, and procedure

One hundred and ninety-seven participants (47.2% female; M_age = 37.9) from MTurk completed the experiment for a small compensation. Study 2 employed a single factor (positive affect vs. neutral affect) between-subjects design.

At the beginning of the study, participants were told that they would complete two unrelated tasks. In the first task, affect (positive vs. neutral) was manipulated using the pretested pictures. Depending on the assigned condition, participants viewed 12 photographs that induced either positive or neutral affect (see Appendix D for detailed information). Next, participants were asked to imagine they were shopping online for trash bags. Similar to study 1, participants proceeded to a checkout page after imagining that they decided to purchase the product. On the checkout page, participants saw that there was a price increase (original price: $7.99; final price: $9.45; see Appendix E for detailed information). Participants then indicated perceived price fairness on the same four items used in study 1 (α = .97). Additionally, we measured the time each participant spent evaluating price fairness. Next, participants were asked to recall the final price of the product.
4.3 | Results

4.3.1 | Perceived price fairness

As expected, participants in the positive affect condition perceived the price increase as less unfair (M = 3.98) than those in the neutral affect condition (M = 3.20; t[195] = 2.98, p =.003).

4.3.2 | Depth of processing

Participants in the positive affect condition spent less time (M = 20.77 s) evaluating the price change (on checkout page) compared to those in the neutral affect condition (M = 27.29 s; t[195] = −2.50, p = .013). Further, compared to participants in the neutral affect condition, significantly fewer participants recalled the final price of the product accurately in the positive affect condition (χ2[1, N = 197] = 4.01, p = .045; positive affect = 20.4%, neutral affect = 33.0%). These results indicate that participants in the positive affect (neutral affect) condition processed price information less (more) thoroughly. These results are in line with previous studies that have used recall as a measure to assess information processing depth (Conover, 1986; Dickson & Sawyer, 1990; Vanhuele & Drèze, 2002).

4.4 | Discussion

In line with the findings from the longitudinal study (study 1), we again find that increased positive affect leads to higher price fairness perception. While the change in positive affect was measured in the longitudinal study, the change in positive affect was manipulated using a popular priming procedure. By replicating the findings using a different method, we obtained additional support for the role of state affect in consumers’ price evaluations.

Furthermore, study 2 suggests that an increase in positive affect leads to less thorough processing of price information and perceptions of price increase being less unfair. These results are consistent with past studies (Puccinelli et al., 2013; Suri et al., 2002). In conjunction with study 1, study 2 provides additional support for the key role of positive state affect in shaping price fairness perceptions.

5 | GENERAL DISCUSSION

Many retailers have increased prices during the COVID-19 crisis. However, extant literature provides little insight into how consumers’ fairness perceptions of price increases change as the crisis evolves. The current research examined how changes in positive state affect during the COVID-19 crisis influenced consumers’ price fairness perceptions. In a longitudinal study (study 1), we found that consumers experienced an increase in positive affect as the lockdown restrictions were eased, and such an increase in positive affect led consumers to perceive price increases to be less unfair. Results from study 2 provided additional evidence that positive affect leads to increased price fairness perceptions.

5.1 | Theoretical contributions

First, this research contributes to the sparse but emerging literature on how the COVID-19 crisis has altered many aspects of consumer behavior. Recent articles on this topic in marketing journals have shown significant changes in the marketplace (Goldsmith & Lee, 2020), and one of the prominent changes is price increase. Our research provides insights on how consumers would react to price increases at different stages of the COVID-19. Although there is recent research on price fairness perceptions during the COVID-19, the research focuses mainly on the cognitive aspect of price evaluations, that is, the impact of consumers’ perceived causes (e.g., cost, quality) of price changes (Friedman & Toubia, 2020). However, a large body of research on affect as information has shown that consumers’ decision-making is heavily influenced by their affective states (Clore et al., 2001; Kramer & Yoon, 2007; Pham, 2007). It is logical to argue that affect is likely to play an even greater role in consumers’ decision-making during the COVID-19 crisis. Hence, our research contributes to the literature by accounting for the affective dimension of price evaluations.

Second, the current research contributes to the literature on consumer behavior during a crisis. Prior research has suggested that emotional changes during and after a crisis influence consumers’ judgments and behaviors. For example, consumers’ fears during the SARS (severe acute respiratory syndrome) crisis led consumers to decrease social interactions, which in turn, significantly lowered their demand for retail sales services (Lee & McKibbin, 2004). Furthermore, natural disasters such as tsunami, elicited negative emotions (e.g., anxiety, depression) and consequently induced individuals to perceive higher risk in various domains (e.g., financial, social, health, recreational) of their future lives (Västfjäll et al., 2008). While there have been crises in the past, the impact of the COVID-19 pandemic on people’s lives has been significantly greater in many ways. The global scale of this crisis and its indelible impact on our lives warrant a fresh inquiry into the emotional variations experienced by consumers and the impact of such emotional volatility on consumption decisions. While past crisis research has largely focused on negative emotions, our research demonstrates, rather counter intuitively, that changes in positive affect may play a more important role in consumers’ decision-making during a crisis.

Third, our research contributes to the pricing literature in general. Prior research suggests that consumers’ reactions to price increases depend on various factors, such as types of cost increases (Bolton & Alba, 2006), customer loyalty (Martin et al., 2009), inferred motives of the retailer (Campbell, 1999; Vaidyanathan & Aggarwal, 2003), and cultures (i.e., collectivist vs. individualist) (Bolton et al., 2010). While prior literature offers valuable insights into how consumers perceive price increases during regular times, limited research has examined consumers’ reactions to price
increases in times of crisis, such as the COVID-19. Further, our findings qualify previous studies on price fairness, which have largely focused on negative affect that consumers experience when they encounter a price increase (Ferguson et al., 2011; Xia et al., 2004). While we find that negative affect decreases over time in the COVID-19 crisis, such a decrease in negative affect does not predict consumers’ price fairness perceptions. Rather, changes in positive affect induced by attenuating lockdown restrictions drive consumers’ perceptions of price fairness. These results suggest that the impact of positive affect on fairness perceptions cannot be neglected. Focusing solely on negative affect, as has been common in past research, may lead to an erroneous inference.

5.2 Managerial implications

The current research also provides valuable insights to practitioners. First, retailers often need to increase prices during times of crisis. When planning to execute a price increase during a crisis, retailers should consider the key role of timing if possible. As revealed in our results, consumers perceive a price increase to be less unfair when they experience higher positive affect. In other words, retailers may benefit by delaying price increases to stages when the crisis attenuates, and positive affect among consumers rises. While it is understandable that the economics may not work well for all retailers, it may be possible for some retailers to delay price increases. Many large retailers may have the financial ability to absorb cost increases by accepting lower margins rather than passing on the cost increases to consumers.

Second, retailers who cannot delay price increases due to demand/supply constraints may benefit from stimulating consumers’ positive affect before communicating price increases to consumers. Marketing activities, such as advertising, sales promotions, and public relation campaigns that elevate positive affect among consumers, can be used alongside price increases to reduce consumers’ perceptions of unfairness. For example, retailers could provide a free product that is relatively inexpensive, along with the focal product on which a price increase has been implemented. As another example, retailers could provide a coupon for future use or free membership to their loyalty program to induce positive affect. Such promotional practices can elevate consumers’ positive affect, which in turn, leads to milder reactance to price increases. Further, campaigns highlighting corporate social responsibilities may be a way to increase consumers’ positive affect (Xie et al., 2019).

5.3 Limitations and future research

To our knowledge, this research is the first to use a longitudinal study (study 1) to probe the change in price fairness perceptions during a crisis. However, certain limitations of this research must be acknowledged. First, we employed a 2-stage longitudinal design. To further test our theoretical arguments, more than two legs of data collection may have been useful. Second, future research could investigate boundary conditions to the effects we uncovered. Product, individual, and brand-related variables may impact the strength or direction of the effects demonstrated in this research. Third, while our findings provide a general understanding of consumers’ price fairness perceptions during times of crisis, each crisis is unique. Differences in the characteristics, intensity, and scope of crises may impact the general applicability of our findings. Fourth, concurrent events that also induce changes in consumers’ affective states (e.g., social movements) are important to consider.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**SUPPORTING INFORMATION**

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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