

Examining the Impact of COVID-19 Anxieties on Consumer Perceptions and Patronage of Convenience Stores



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The COVID-19 pandemic caused massive disruptions that have altered the mindsets of retail consumers. The present study examines whether the pandemic has shifted value attributions in convenience store customers. Specifically, we explore whether customers' anxiety levels related to the virus moderate the impact of store image, service quality, and product availability on customer satisfaction. We conducted this research using panel data from a US consumer panel provided by Qualtrics, with a sample size of 361. Our empirical findings confirm that, for apprehensive consumers who are wary of the virus infection, customer satisfaction is highly dependent on product availability and service quality. On the other hand, the satisfaction of less risk-averse consumers is driven more by store image and service quality. This research highlights the crucial role of service quality in the convenience store industry and sheds light on how consumer behavior may evolve in uncertain situations. Theoretical and practical implications are also discussed.

Keywords: Convenience Stores, Customer Satisfaction, Service Quality, Store Image, Product Availability, COVID-19.

1. Introduction

“When customers’ expectations change faster than your willingness or ability to serve them, you can be sure they’ll be someone else’s customers soon” (Kaufman, 2005; p. 62).

The unprecedented global pandemic has caused significant disruption and transformation in the retail environment. With many customers now preferring online shopping and virtual interactions, traditional customer relationship practices have been drastically altered, forcing retailers to find new ways to attract and retain customers. Convenience stores have not been immune to these rapid changes, but their endowment as an ‘essential services’ provider catapulted their prominence as a shopping destination during the COVID-19 pandemic (Longo & Hanson, 2021; Rybaczewska, Sułkowski, et al., 2021). With more than \$102 billion in total business and over 173,000 jobs created, convenience stores have witnessed an unprecedented

double-digit sales growth in both groceries and alcoholic beverages during the pandemic (Longo & Hanson, 2021). This surge in convenience store (CS) consumption has occurred despite a dramatic rise in demand for online groceries due to recurring outbreaks and restrictions for major retailers as well as uncertainties associated with potential virus contraction through shopping in person. Analysts estimate that although the pandemic has minimized the frequency of physical grocery trips, consumer spending per visit has increased by nearly 23% (Redman, 2021).

Some retailers have adapted and successfully rebranded themselves during the pandemic by adding new technologies, becoming more socially responsible, or introducing unique ways of shopping that protect consumers (Pantano, 2020). Given these burgeoning realities, CS managers need to adapt to changing customer preferences and adjust their operations accordingly. Despite earning the coveted label of 'essential business' during the COVID-19 pandemic (Rybaczewska, Sulkowski, et al., 2021), little is known about how CS customers' contagion anxieties impact the salience of store attributes and subsequent customer satisfaction and loyalty. This research provides a novel contribution by identifying the impact of COVID-19 anxieties on shifting consumer preferences. These insights can be valuable in preparing for future challenges that may arise unexpectedly.

In response to calls by researchers to extend knowledge on the changing preferences of convenience store consumers (Gibson et al., 2022), this paper builds upon transactional psychology theory (Terborg, 1981) to explore whether consumers' perceptions of store image, service quality, and product availability are impacted by their apprehensions about contracting the virus. This study provides insights to convenience store retailers about shifting consumer mindsets during a pandemic and underlines the importance of investing in service quality as a precursor to customer satisfaction and subsequent loyalty intentions. To this end, this study examines US consumers' convenience store shopping perceptions at the peak of the pandemic in mid-2020. Specifically, the study examines whether the pandemic has shifted the value attributions of convenience store customers. Specifically, how have perceived anxieties about convenience store shopping during the pandemic impacted consumer perceptions about what is important during a convenience store service encounter? Interruptions to business as usual may have differential effects on customers and retailers, highlighting the need to better understand individual responses to uncertain situations. As such, this research contributes to the consumer behavior literature by empirically examining three important antecedents to customer satisfaction: namely, store image, service quality, and product availability. Another notable contribution is the examination of how COVID anxieties regulate the influence of customers' satisfaction and in turn, loyalty in the context of convenience stores.

While store image, service quality, and product availability have been studied extensively in the past (Bloemer & de Ruyter, 1998; Dabholkar et al., 1996; Hsu et al., 2010; Kunkel & Berry, 1968; Martineau, 1958; Mazurksy & Jacoby, 1986; Nessel et al., 2011; Parasuraman et al., 1988), no studies have linked these antecedents to customer satisfaction in the convenience store sector or particularly in the context of pandemic anxieties. Building upon interactional psychology theory, this study employs the perceived likelihood of COVID-19 infection as a situational factor that

triggers perceptual differences in store characteristics among consumers. Though recent research has established the impact of COVID-related anxieties on counterproductive consumer behaviors (Fellelsson & Salomonson, 2020; Park et al., 2022), significantly less is known about how COVID-related anxieties influence the perceptual formation of satisfaction in convenience stores. In response, the current study empirically examines whether customers' anxieties about COVID-19 infection moderate the relationship between their satisfaction and its antecedents in a convenience store setting.

The next section discusses the theoretical framework and hypothesis development. This will be followed by the methodology, analysis, and results. The paper will conclude with a discussion and limitations.

2. Theoretical Foundation and Hypothesis Development

2.1 Interactional Psychology Paradigm

According to the interactional psychology paradigm, individuals react to situational cues in their environment such as perceived opportunities and threats by their own cognition and motivations (Terborg, 1981). Put differently, individuals are a byproduct of their circumstances. As such, their perceptual and behavioral responses to stimuli reflect their unique individual characteristics when facing those situations. A major premise of interactional psychology is that situational turbulence presents external stimuli which in turn, incites perceptual and behavioral responses from individuals (Guesalaga, 2016; Terborg, 1981). This tandem focus on external stimuli and personal differences is central to the paradigm as individuals facing identical situational circumstances may react in variant ways. The theory postulates that behavioral responses are a function of the interaction between individual perceptions and the external stimuli encountered. In the current study, the external stimuli are captured through situational factors, i.e., store image, product availability, and service quality, while the perceived threat of contracting the virus is a matter of individual perception. The interplay of these variables precipitates a behavioral response, i.e., satisfaction and store loyalty. Another important facet of interactional psychology is that the individual, in this case, the consumer, must be an active participant in the evolving situation (Terborg, 1981). In other words, the situation must have direct relevance to the individual to elicit a response behavior.

Retailers have long understood the importance of consumers' perceptual evaluations of store image. Store image comprises consumers' perceptions of a store's salient attributes such as location, merchandise, store atmosphere, advertising, and employed personnel (Baker et al., 1993; Bloemer & de Ruyter, 1998). The scholars argue that perceptions of store image are shaped by the relative importance placed on both the atmospheric and interactional elements of the store experience. For instance, small-format convenience stores tend to be more visually appealing than large-format stores and impose a higher impact on customer satisfaction (Paul et al., 2016). Recent research indicates that perceived retail store image may even be a stronger determinant of consumer value than innovation (Moliner-Velázquez et al., 2019).

Customer satisfaction with convenience stores is influenced by a variety of situational factors such as the availability of fresh milk, cold beer, freshly brewed hot coffee, clean fountain machines with fresh syrup, a clean shopping environment, and

an updated assortment of candy shelves (Covino, 2020). These elements are considered external stimuli that contribute to overall experiences and perceptual impressions of the location. Other exterior factors that could influence satisfaction include professional landscaping, perceived maintenance, safety of parking lots, windows that are clean and free of old torn signage, cleanliness of dumpster areas, updated gas price signs, and well-lit fueling stations (Covino, 2020). All of these stimuli play a conscious or subconscious role in shaping customer perceptions of a convenience store visit. In this context, customer satisfaction describes a favorable impression of the convenience store which the customer will likely draw upon when determining where to eat, use the restroom, purchase beverages, and fuel their vehicle(s) in the future (Lassk, 2000; Paul et al., 2016). Convenience stores are complex businesses that share elements of a supermarket, fast-food chain, and gasoline operation combined (Gibson et al., 2022). Over the years, convenience store owners have come to realize that food quality, cleanliness, shelving of the right products at the right times, price consistency and promotions, and service quality are integral components in creating customer satisfaction and loyalty (NACS, 2018, 2019). That said, capturing perceptions of a convenience store experience is multi-faceted with various factors contributing to evaluations of an overall visit. The proposed model is

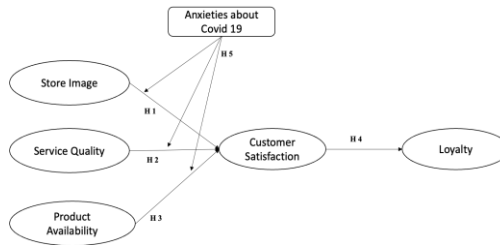


Figure 1 *Hypothesized Model*

2.1.2 Store Image

Though conducted before the COVID-19 outbreak, recent research suggests that consumer perceptions of store ambiance, product organization, and layout, as well as staff friendliness all, contribute to the overall store and brand experience (Graciola et al., 2020; Roggeveen et al., 2020). By the same token, embedding experiential elements such as immersive store layouts and exciting brand narratives may enhance loyalty intentions and positively impact store image (Cassel et al., 2021). Turley and Milliman (2000) identify five categories of retail stimuli: external variables (i.e., signs, lot size, parking), internal variables (i.e., color, lighting, and scents), layout and design variables (i.e., space allocation, placement of merchandise, point of purchase), decoration variables (i.e., pictures, usage instructions, price displays), and human variables (i.e., crowding and traffic flow, employee uniforms, and interactions with personnel) (Turley & Milliman, 2000). A common theme is that customers evaluate a store's image based on a composite assessment of store attributes and characteristics that are tied to satisfaction, but whose relative importance varies with the customer.

Thus, it is predicted that perceptions of convenience store image will likely contribute to overall customer satisfaction.

H1: A positive store image will have a positive effect on customer satisfaction

2.1.3 Service Quality

As marketing interactions rapidly digitize across the retail spectrum, differentiation based on service quality has become increasingly difficult. Needless to say, this digital transition has accelerated dramatically since the onset of the COVID-19 pandemic. Except for convenience stores and other 'necessary services', widespread shutdowns in the US forced an overwhelming majority of consumers to purchase their necessities from online providers (Pantano, 2020). Recent research indicates that premium service quality may captivate consumers to the extent that alternative stores are rendered undesirable because of perceived switching costs (Stavros et al., 2021).

Meta-analytic evidence suggests that service quality is a significant driver of customer loyalty (Carrillat et al., 2009). With the rapid shift to omnichannel retailing, consumers are increasingly immersed in the synergistic combination of all available touchpoints including store appearance, personal interactions with employees and customers, fulfillment/reliability, transaction efficiency, aesthetic design and atmospherics, privacy/security, and service personalization to name a few (Zhang et al., 2019). These elements are mentally aggregated and evaluated by consumers compositely when evaluating retail experiences. Moreover, the emotional connection garnered from personal interactions with frontline employees has been shown to have a lasting effect on perceived value and customer loyalty (Ruiz-Molina et al., 2018). Convenience stores, in particular, are often focal points in neighborhoods and communities because of the close ties developed with local patrons (Rybackewska & Sparks, 2020). That said, convenience stores have also been linked to poor service quality and customer satisfaction ratings as compared to traditional supermarkets (Nilsson et al., 2013). Higher customer service expectations have posed challenges for retailers and despite rapid retail digitization, personal service quality remains a major determinant of consumer satisfaction (Desara et al., 2021; Omar et al., 2021). Given this, the following is predicted:

H2: A positive service quality will have a positive effect on customer satisfaction

2.1.4 Product Availability

Research suggests that the perceived scarcity of products significantly impacts consumer choices and purchasing behaviors (Hamilton et al., 2019). This was undeniably apparent at the onset of the COVID-19 pandemic when panicked consumers rampantly stockpiled various items including hygiene-related products such as surgical face masks, hand sanitizers, disinfectant sprays, and even toilet paper. Recent evidence suggests that excessive media coverage early in the pandemic and a lack of government intervention were major culprits behind the spike in group panic buying and subsequent shortages (Chen et al., 2022). As a result of the widespread stock-outs in many items, the price sensitivity of many customers was radically altered with many consumers accepting price increases of more than 300% for certain product categories (Pantano, 2020). Not surprisingly, opportunistic sellers resorted to predatory tactics and price gouging to take advantage of the scarcity and skyrocketing

demand. This led to a precarious situation for retailers as evidence suggests that consumers typically react to one-time stock-outs by switching brands and/or stores altogether (Pizzi & Scarpi, 2013). Not surprisingly, product availability in a variety of categories was a major concern for retailers and consumers at the time.

Research reveals that the average convenience store is limited to roughly 2000-5000 square feet (Gibson et al., 2022) which means profitable stores must optimize square footage by shelving popular products and minimizing excess inventory. During the COVID-19 pandemic, convenience stores increased their grocery sales by over fifty-two percent by shifting their product line assortments to more toilet paper, paper towels, cleaning agents, sanitizer, home goods, and general groceries, to better accommodate consumer demands (Shoup, 2020). Securing and maintaining optimal product lines is a major concern for convenience retailers, as they must ensure top sellers in all categories to have a sustainable competitive (Brijs et al., 2004). One study on Chilean consumers identified product assortment and availability as the most salient attributes for convenience store shoppers (Bianchi, 2009). Given the demanding nature of consumers and the ongoing transformation of the retail industry, product assortment remains a top priority for customer revisit intentions (Desara et al., 2021; Gibson et al., 2022). Building on these findings, it is predicted that product availability will have a positive impact on customer satisfaction.

H3: Product availability will have a positive effect on customer satisfaction

2.1.5 Customer Satisfaction and Loyalty

Since first introduced by Hollander (1960), the ‘wheel of retailing’ has evolved profoundly from a store-centric, image-based conceptualization (Hollander, 1960; Hsu et al., 2010; Kunkel & Berry, 1968) to a technology-driven, customer-centric, and loyalty-inducing mechanism (Babin et al., 2021). Despite the rapid digitization of the retail industry in the ‘new technology era’, retailer success (i.e., customer loyalty) is still firmly grounded in consumers’ perceptions of store presentation, product inventory decisions, and the quality of retail personnel (Grewal et al., 2021) and customer satisfaction remains a pivotal mediator between retail store attributes and loyalty intentions (Chiou & Droge, 2006; Gong & Yi, 2021; Helgesen et al., 2010). Recent research argues that customer satisfaction in a convenience store setting is highly dependent on store image, service quality, and product availability (Gibson et al., 2022). Convenience store image encompasses experientially apparent aspects of the store including lighting, availability of parking spaces, clean restrooms, and sanitized fresh food operations (NACS, 2020). Although convenience stores were deemed essential services and somewhat resistant to the economic shocks associated with COVID-19, customers were not indifferent about the in-store experience and customer satisfaction remained a critical antecedent of loyalty intentions (Rybaczewska, Sułkowski, et al., 2021). During these times of uncertainty, convenience store owners struggled to appease the fluctuating demands of customers such as drastic spikes in demand for household items like toilet paper, groceries, and sanitizing agents (Ulie, 2021). In many instances, convenience stores had to shift their product assortments and vendors to adapt to the sudden demand for short-supply products. Despite the rapid changes, the importance of service quality was unwavering

in the face of changes caused by the pandemic and remains an important antecedent to customer satisfaction in convenience stores (Tran & Le, 2020). Drawing upon this research, it is predicted the relationship between convenience store attributes and loyalty intentions will be mediated by customer satisfaction.

H4: Customer satisfaction will mediate the relationship between perceptions of convenience store attributes (i.e., store image, service quality, and product availability) and loyalty intentions.

2.1.6 Moderating Influence of Anxiety

The COVID-19 pandemic is widely regarded as a global cataclysmic crisis, and customers are known to shift their buying patterns and beliefs during such events (Zwanka & Buff, 2020). Laato, Islam, Farooq, and Dhir (2020) conducted an analysis involving 211 Finnish respondents through an online survey. Their study revealed that the perceived severity of the COVID-19 crisis and the presence of cyberchondria significantly influenced individuals' intentions to make unconventional purchases and their willingness to self-isolate voluntarily. In fact, retailers and convenience store owners experienced an unprecedented spike in demand for a variety of items including toilet paper, sanitizers, and perishable goods with customers spending considerably more per visit than in the past (Gordon-Wilson, 2021). Not only has the ongoing pandemic radically shifted consumer buying patterns and attitudes to an inflection point, but it has permanently disrupted the core dynamics of the retail industry (Grewal et al., 2021). Acute anxiety may increase consumers' likelihood of behaving irrationally and/or erratically. As a result, researchers have called for a better understanding of how anxieties about COVID-19 may influence retail consumers' satisfaction drivers (Roggeveen & Sethuraman, 2020; Rybaczewska, Klopocka, et al., 2021). In the context of tourism, Sarker et al. (2023) also argued that "potential tourists' peace-of-mind regarding COVID-19 safety is contingent on their perceived risk of contracting the virus while at the destination and their trust in the destination's COVID-19 safety management procedures in the event of infection" (p. 437). That is, consumers' perceived risk of contracting the virus potentially plays a profound role in their decision-making behavior. In an extension of this research, the present study applies interactional psychology theory (Terborg, 1981) to determine whether intrinsic anxieties about contracting the virus alter the perceived importance of three situational cues (i.e., store image, service quality, and product availability).

While research suggests that the perceived threat of infection plays a central role in panic shopping habits like stockpiling intentions (Kim et al., 2021), less is known about whether these anxieties impinge on the relationship between retail perceptions and satisfaction, particularly in a convenience store setting. Recent evidence suggests that convenience store customers' product evaluations and subsequent purchasing behaviors are highly susceptible to psychological stressors (Tian et al., 2021). That said, consumers have experienced a rollercoaster of emotional and behavioral responses to the pandemic ranging from stress, sadness, loneliness, and perceived loss of control to anger, resentment, and avoidance (Rybaczewska, Klopocka, et al., 2021). Other research argues that consumers' COVID-related fears and aspirations play a moderating role in the determination of loyalty intentions (Yang et al., 2021). Based on what precedes, it is predicted that the association between convenience store

attributes and customer satisfaction will be regulated by customer anxieties about contracting the virus. Formally:

H5: The relationship between convenience store attributes (i.e., store image, product availability, and service quality) and customer satisfaction will be moderated by consumers' anxieties about contracting the COVID-19 virus.

3. Methodology

This study utilizes a covariance-based structural equation modeling technique (CB-SEM) incorporating relevant scales from the extant marketing literature. Iacobucci et al. (2007) suggest structural equation modeling represents a superior alternative to the regression analysis as averaging the multi-item scales in regression may result in erroneous or less substantive theoretical conclusions (Iacobucci et al., 2007). In contrast, structural equation modeling (SEM) is known for its capacity to account for measurement error when assessing the overall goodness fit of the conceptual model (Sardeshmukh & Vandenberg, 2017).

3.1 Conceptual and Operational Definition of Measurement Items

In conceptualizing the model, the authors extensively surveyed the retailing and consumer experience literature before compiling a draft questionnaire. Next, the draft questionnaire was reviewed by two marketing scholars and a manager at Numerator, a market research company based in Chicago. Numerator specializes in managing customer surveys for various types of retail chains, and its services include collecting credit card payments of actual convenience store customers for market research purposes. With the constructive feedback obtained from these experts, the questionnaire was refined before distributing the survey responses to the Qualtrics US consumer panel.

Two attention-check questions (i.e., explicitly instructed response items) were embedded in the survey to check respondents' attentiveness while completing the survey items. Kung et al. (2018) confirm that the use of attention checks does not compromise scale validity, mean values, and tests of invariance (Kung et al., 2018). Moreover, Shamon and Berning (2020) compare rates of careless responses to attention check items, concluding that "in online surveys based on nonprobability samples, survey designers could benefit from the advantage of attention check items in comparison to post hoc measures for data quality" (Shamon & Berning, 2020, p. 72). The following measurements were subsequently adapted in this study.

Product availability was adapted from Bauer (2012) and service quality was adopted from Dabholkar et al. (1996) (Bauer et al., 2012; Dabholkar et al., 1996). In providing a robust assessment of store image, 6 construct items were compiled from 3 store image scales: Gibson et al. 2022; Hsu et al. 2010; and Dabholkar et al. 1996 (Dabholkar et al., 1996; Gibson et al., 2022; Hsu et al., 2010). To measure respondents' satisfaction and revisit intentions, customer satisfaction was a composite assessment adapted from Demoulin and Willems (2019) and Hsu et al. (2010) while revisit intentions were adapted from Kim, Kim, and Kim (2009) and Peng and Kim (2014) (Demoulin & Willems, 2019; Hsu et al., 2010; Peng & Kim, 2014). Each item was measured on a 5-point Likert-type scale (1 = Strongly Agree, 5 = Strongly Disagree). Question items are displayed in Table 2 (see Appendix). Notably, respondents were

also asked to indicate their perceived risk of getting infected with the COVID-19 pandemic on a five-point Likert-type scale (1 = Not Likely, 2 = Slight Likely, 3 = Moderately Likely, 4 = Likely, 5 = Very Likely).

3.2 Common Method Bias

Common method bias assessment assures that the measurement method does not create a significant bias that could threaten construct validity (Podsakoff et al., 2003). The bias becomes a problem when “variance is attributable to the measurement method rather than to the constructs the measures represent” (Podsakoff et al., 2003, p. 879). Steps were taken to reduce common method bias a priori through careful revision of the survey design. Item ambiguity was diminished by creating questions that were simple, concise, and ‘single-barreled’ (Podsakoff et al., 2012). In addition, manipulation checks were embedded in the survey to ensure respondents were paying close attention. Qualtrics is an American experience management company that maintains a large consumer panel in the US and a few other nations. Qualtrics administered the survey and removed any respondents who misrepresented the attention check variable(s). A total of 402 US convenience store customers completed the online survey. Finally, to statistically test for common method bias, a common latent factor was employed in the CFA to rule out common method bias by comparing the standardized regression weights with and without the common latent factor. The test revealed delta scores much lower than the threshold of .20 (Fuller et al., 2016; Gaskin, 2018; Podsakoff et al., 2003; Podsakoff et al., 2012). As a result, common method bias does not appear to be a concern for this research.

3.3 Sample Results and Respondent Characteristics Profile

Data collection services were provided by Qualtrics, a company that specializes in managing customer surveys and is renowned for its access to diverse US consumer panels. The sample acquired from the Qualtrics consumer panel originally consisted of 402 US consumers. However, this study excluded infrequent shoppers who rarely visit convenience stores (i.e., less than once a month) or those who only patronize a convenience store when traveling. As a result, the sample size was refined from 402 to 361; 175 males (48.5%), and 186 females (51.5%). The respondents’ demographic profiles are shown in Table 1 (see Appendix).

Table 1 Respondent Characteristics Profile

	Sample Characteristic	Percentage
Gender	Male	48.5%
	Female	51.5%
Age group	18-25	8.6%
	26-35	14.7%
	36-45	23.8%
	46-55	15.8%
	56-65	17.4%
	65+	19.7%
Perceived risk of Covid-19 infection	Not likely	21.6%
	Slightly likely	31.3%
	Moderately likely	24.9%
	Likely	13.9%
	Very likely	8.3%

Note. N = 361

4. Statistical Analysis and Results

4.1 Empirical Estimation of the Conceptual Model

This study focused on five constructs: namely, store image, service quality, product availability, customer satisfaction, and revisit intentions. The 361 complete responses were first analyzed with Principal Component Analysis (PCA) using SPSS 26. One question item was identified with a higher than 0.40 cross-loading and was thus removed from subsequent analyses. A total of five factors emerged, with total variance explained for all five factors equaling 71.65%. Bartlett's test for sphericity verified significant relationships among the variables ($p < .001$) and lent support to use PCA to compress the data in a meaningful way. The Cronbach's alphas for all five factors are above the threshold of .70 (Nunnally, 1978): .86 (store image), .89 (service quality), .83 (product availability), .85 (revisit intentions), and .81 (customer satisfaction), respectively. The correlation matrix and results of the principal components analysis are displayed in Tables 3 and 4 (see Appendix), respectively.

Table 2 *Construct Items*

Construct	Item Content
StoreImage1	Convenience store appearance is modern
StoreImage2	Convenience store lighting is proper
StoreImage3	Convenience store decor is attractive (including signs)
StoreImage4	The convenience store layout makes it easy to get to the product(s) I want to buy
StoreImage5	Convenience store equipment (coolers, coffee machines, fountain machines) is up-to-date
StoreImage6	Convenience store is clean
Product Availability1	This store offers a variety of products
Product Availability2	This store offers a good selection of well-known products
Product Availability3	This store offers products that are high in quality
Product Availability4	This store offers products that are new to the marketplace
ServQual1	The employees are prompt in providing service
ServQual2	The employees are knowledgeable
ServQual3	The employees are willing to help me
ServQual4	The employees are courteous
CustSat1	When compared to other convenience stores, I am more satisfied with this store
CustSat2	This convenience store meets my expectations
CustSat3	This convenience store fulfills my shopping needs
RevisitIntent1	I consider this convenience store my first choice stop
RevisitIntent2	I would recommend this convenience store brand to others
RevisitIntent3	I am likely to revisit this convenience store again
RevisitIntent4	I have strong intentions to visit this convenience store in the future

Table 3 Correlation Matrix and Distributive Statistics

Construct	Store image	Service Quality	Product Availability	Customer Satisfaction	Revisit Intentions
Store image	.749				
Service Quality	.681	.813			
Product Availability	.644	.511	.752		
Customer Satisfaction	.630	.651	.575	.775	
Revisit Intentions	.549	.598	.556	.687	.774
Square root of AVEs are shown in the diagonals, remaining numerals are bivariate correlation coefficients					

Table 4 Principal Components Analysis

	Service Quality	Product Availability	Revisit Intentions	Store Image	Customer Satisfaction
SQ3	.829				
SQ4	.823				
SQ2	.703				
SQ1	.689				
PA2		.829			
PA4		.776			
PA1		.691			
PA3		.649			
RI1			.831		
RI4			.792		
RI3			.751		
RI2			.616		
SI1				-.721	
SI6				-.607	
SI5				-.606	
SI3				-.589	
SI2				-.583	
CS3					-.859
CS2					-.734
CS1			.390		-.444
Cronbach Alpha	.89	.83	.85	.86	.81
Cumulative variance explained	48.19%	56.12%	63.26%	67.69%	71.65%

Extraction Method: Principal Component Analysis with Varimax Rotation. Factor Loadings that are Smaller than 0.35 are not shown.

Next, the data were analyzed using confirmatory factor analysis (CFA) to examine the fit between the proposed model and the data with Stata 16.0. The estimated Chi-square statistic with 174 degrees of freedom was 488.30 (p-value < .001). An insignificant Chi-square statistic would mean that the model fits the data well. Although the Chi-square statistic is statistically significant, the Chi-square/df ratio of 2.81 falls in the acceptable range between 2 and 5 (Coughlan & Hooper, 2008). In addition, the estimated RMSEA was .071 with a comparative fit index value of .932 and a Tucker-Lewis index value of .918. These scores lend support to acceptable goodness of fit for the measurement model.

Convergent validity was gauged by checking whether the average variance extracted was above the cutoff threshold of .50 (Hair et al., 2010). The average variance extracted scores (AVEs) ranged from .561 to .662. The square root values of the AVEs are reported in the diagonals of Table 2 (see Appendix). Discriminant validity was achieved when the square root value of AVE is greater than the corresponding inter-construct correlation (Gaskin, 2018; Hair et al., 2010). Both convergent validity and discriminant validity were achieved in this study.

4.2 Structural Path Model Results

Stata 16.0 was also employed to estimate the structural paths. The estimated Chi-square statistic with a 177 degree of freedom is 504.12 (p-value < .001) and the estimated RMSEA is .072. Both a comparative fit index value of .929 and a Tucker-Lewis index value of .916 give support to the acceptable goodness of fit conclusion to the structural path model.

Subsequently, a categorical moderator is employed in a multiple group analysis using the group option in Stata 16.0. Specifically, respondents who indicated that they were either “not likely” or only “slightly likely” to be infected with COVID-19 are classified into the ‘low anxiety’ group, whereas those who reported feeling “moderately likely” to “very likely” are categorized into the “high anxiety” group. The findings suggest that product availability does not have a significant impact on customer satisfaction among respondents who felt less anxious about the COVID-19 pandemic (N₁ =189) while product availability matters a great deal to their counterparts (N₂ =170). In contrast, store image matters among respondents who felt less prone to infection, but store image had no significant impact on the satisfaction of their counterparts. Service quality has a significant impact on customer satisfaction for both groups. Notably, customer satisfaction has a significant impact on customer revisit intentions for both groups. A detailed summary of the estimated structural path model outcomes for both groups are presented in Table 5, Table 6, and Figure 2 (see Appendix).

Table 5 Estimated Structural Path Outcomes (Low COVID-19 Anxiety Group)

Hypothesis and Structural Paths	Standardized Coefficient	SE	p-value
H1 Store Image → Satisfaction	.418	.173	.016
H2 Service Quality → Satisfaction	.502	.107	< .001
H3 Product Available → Satisfaction	.030	.124	.807
H4 Satisfaction → Revisit Intentions	.856	.032	< .001

Note: N₁ =189 (Low COVID-19 Anxiety Group)

Table 6 Estimated Structural Path Outcomes (High COVID-19 Anxiety Group)

Hypothesis and Structural Paths	Standardized Coefficient	SE	p-value
H1 Store Image → Satisfaction	.030	.144	.830
H2 Service Quality → Satisfaction	.393	.100	< .001
H3 Product Available → Satisfaction	.551	.116	< .001
H4 Satisfaction → Revisit Intentions	.898	.035	< .001

Note: N₂ =170 (high COVID-19 Anxiety Group)

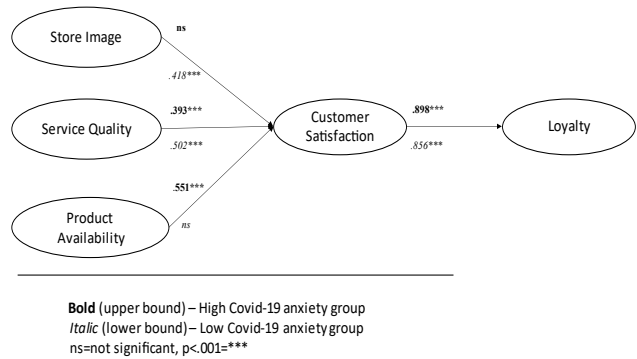


Figure 2 Estimated Structural Path Model

5. Discussion

The abrupt and massive changes experienced by consumers as a result of the onset of COVID-19 and its variants have profoundly altered the retail experience and consumer behavior on a global level. Analysts predict that many of these shifts in consumer behavior will outlast the pandemic and retailers who earned the patronage of their consumers during this time of emergency will reap the benefits of ongoing loyalty (Pantano, 2020). However, to our knowledge, no retail studies have empirically investigated this possibility in the convenience store industry. Furthermore, this study incorporates consumers’ fear of contagion as a catalyst in determining what attributes of convenience stores are most important to consumers in generating satisfaction and loyalty at times of uncertainty.

It appears that consumers who are anxious about contracting the virus are more concerned with product availability and service quality in their shopping experience than their counterparts who are more likely to evaluate store image and service quality as prerequisites for their satisfaction and loyalty. Consistent with recent research that posits supermarket consumers are less likely to go shopping during infection spikes (Grashuis et al., 2020), the results suggest that COVID-weary consumers may be more inclined to focus on product availability at the expense of store image. This finding amplifies the importance of stocking essential items for ‘one-stop shop’ customers who are concerned with optimizing the time spent within the store. This may be a significant challenge to convenience stores, with limited product assortments and space to accommodate this need. On the other hand, consumers with fewer premonitions about contracting the virus appear more concerned with store image and service quality than product availability. Thus, we conjecture that COVID-19-

indifferent consumers may be more inclined to browse and consider the hedonic elements of store image given their relaxed state of mind. Conversely, COVID-anxious consumers appear more concerned with expediting the shopping process to minimize interactions and the risk of infection.

6. Managerial Implications

A notable finding is that the perceived importance of service quality is unwavering regardless of the perceived threat level of contracting the virus. In other words, consumers are unwilling to sacrifice service quality for the sake of efficiency, even at times of uncertainty and panic. This aligns with Austrian-based research that suggests consumer perceptions of interactions with retail personnel increased in importance during the pandemic (Brandtner et al., 2021). Given the resounding impact of service quality on satisfaction and consequent loyalty, convenience store managers should emphasize the importance of customer service to frontline employees and ensure proper etiquette is ingrained into operational protocol. This research supports the notion that despite advancements in technology and payment mechanisms, retail consumers' satisfaction remains highly dependent on the personal touch of service employees (Babin et al., 2021).

Convenience stores have been a staple in the United States economy since 1927 (Garves, 2017), implying resilience to turbulence and shifts in the retail landscape. However, the industry must continue to respond and adapt to changing consumer preferences. Given that convenience stores witnessed a considerable increase in basket size during the pandemic (Rybaczewska, Klopocka, et al., 2021), this research posits that managers should monitor popular convenience items/brands and replenish products that are not carried in their limited assortments. In times of panic, supply chains should be analyzed, and alternative vendors explored to determine how to preempt heightened demand and remain in stock to accommodate store rushes. With the agility to transform their supply chains on demand, convenience retailers could increase resilience and insulate operations during turbulent times. If feasible, it may be worthwhile to utilize geotargeting to tailor product selections to specific locations. For instance, an innovative campaign executed by leading Finnish grocery retailer, Alepa, integrates a chatbot into their app which allows customers to request their favorite products to be added to the shelves of neighborhood locations to more accurately reflect the lifestyles and flavor palettes of local communities. According to the retailer, the award-winning application entitled "Block Wish" is used by 20% of their customer base and has become a key driver of category management in participating stores.

Taken together, the results indicate that convenience store managers should vigilantly monitor consumers' satisfaction and loyalty drivers and regularly solicit feedback from customers regarding changes in buying preferences, particularly at times of distress. In congruence with recent research from the retail industry (Lucia-Palacios et al., 2020), the findings confirm that customer evaluations of retail experiences are highly dependent on the interplay between situational stimuli and customers' state of mind at the time of purchase. That said, the inseparability of cognition and behavior found in this study represents a further reinforcement of the

interactional psychology framework in a retail context. Of the three antecedents of convenience store satisfaction examined here, service quality was the most insulated from anxiety-induced changes. Consequently, retail practitioners should pay particular attention to gauging and improving perceptions of customer service. One strategy that may prove useful is to survey consumers about their perceptions of the visit via mobile app or loyalty card which would be validated at the point of purchase. Customers could be rewarded for participation with a predetermined percentage off their next purchase or discounts on drinks or meals. Not only would this provide invaluable information to managers about changing customer preferences and service evaluations, but it may drive up sales in previously untapped categories.

7. Limitations and Future Research

The present study has some limitations that pave the way for new research avenues. First, the study is confined to the convenience store industry which is distinctive from the traditional retail sector (Gibson et al., 2022). As such, findings may not be fully generalizable to mainstream retail consumers. Second, the timing of the study was deliberately initiated at the height of the pandemic when public uncertainty and fear of the virus was at its highest. While this perspective on the influence of mental anxiety as a catalyst for consumer satisfaction and loyalty behaviors is intriguing, the present study's findings are limited by their reliance on a cross-sectional online survey. In addition, given the abstract nature of consumer anxieties, the quantitative methodology employed presents another limitation. Impending research on the topic should consider incorporating mixed methods to provide a richer assessment of consumers' underlying apprehensions.

Despite the importance of convenience store image, product availability, and service quality to overall customer satisfaction, the three antecedents are by no means exhaustive, and it may be that alternative variables or settings impact customer evaluations. For instance, it is no surprise that online retail has been one of the few real beneficiaries of the pandemic. In 2021, global retail e-commerce sales reached approximately 5.2 trillion U.S. dollars, and analysts estimate a 56 percent growth over the next few years, with the market expected to reach around 8.1 trillion dollars by 2026 (eMarketer, 2022). It may be insightful to explore whether the drivers of online customer satisfaction have evolved in light of the pandemic. For instance, how do factors such as digital engagement, virtual try-ons, personalized service, updates through generative AI, and content marketing contribute to online customer satisfaction? Finally, the data analyzed here is cross-sectional which limits causal inferences. As the 'new normal' grinds on, many weary consumers have transitioned from fear and concern to apathy. For this reason, assessing the relationships using time series data may offer valuable insights into how the drivers of consumer satisfaction evolve during a crisis. We hope this research sparks further interest in the impact of situational stimuli on retail customers' satisfaction and loyalty.

8. References

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