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A Snapshot in Time: Consumer Behavior at the Start of COVID-19

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During the early stages of the coronavirus pandemic, consumers faced challenges related to obtaining household items due to shortages and limitations in shopping. Researchers from the University of Tennessee conducted a national, web-based consumer survey of 300 consumers in late April 2020 to better understand consumer behavior, shopping patterns, and demand shifts for goods and services. Major findings demonstrate that consumers have increased shopping for essential products from brick-and-mortar national chains, avoided brick-and-mortar small businesses, and have chosen to shop more by themselves, often choosing to forgo spending from across all product categories, compared to prior to the pandemic. Additionally, results indicate that lower levels of positive emotions and active resilience are responsible for higher levels of shopping frequency. Additionally, lower levels of passive resilience and optimism are associated with increases in co-shopping behaviors. Findings from this study provide insight into the changes among consumers during trying times and the influence of consumers' emotions and individual characteristics in helping to explain these changes in family resource management and mental health, as well as consumer resilience amidst changing macroeconomic conditions.

Keywords: online shopping, shopping patterns, emotional responses, resilience, optimism, consumer behavior, expenditures, COVID-19

While the COVID-19 pandemic has highlighted the importance of good health and wellness globally and at home, it has also had an economic impact on macro- and micro-economies through an economic downturn (Yeyati & Filippini, 2021), which has brought changes to the way consumers spend and save money; specifically, consumers are facing challenges in paying for usual household expenses (e.g., food, mortgage, medical; Baker et al., 2020; Garner et al., 2020). Shelter-in-place orders, government-imposed shutdowns, and the need for social distancing have substantially altered lives across the United States by encouraging consumers to remain at home (Garner et al., 2020). Additionally, positive events, such as stimulus checks and child tax credit checks, allowed for additional family resources (DeParle, 2021). As consumers

navigated these unprecedented times to care for themselves and their families, they often transitioned their purchase transactions to the online environment as a strategy to increase selection in the midst of supply-chain issues and to actively avoid potentially crowded brick-and-mortar retail stores (National Retail Federation [NRF], 2020).

Studying consumer behavior during the onset of the COVID-19 pandemic offers an ideal opportunity to understand better how individuals respond in the face of a global health crisis, specifically and in general times of distress. Most early COVID-19 studies focus on epidemiology, clinical investigations, treatments, and patient outcomes (Addo et al., 2020). Additionally, many current studies examining the economic impacts of COVID-19 approach their inquiry from a macroeconomic perspective, sometimes overlooking how the pandemic has impacted the day-to-day (i.e., microeconomic) realities of households (Martin et al., 2020). Studies examining consumer responses to COVID-19 have only started to emerge in the literature (Bachman et al., 2020; Baker et al., 2020; Serido, 2020). A deeper understanding of consumer behavior during this time can help better inform the family resource management literature via understanding how consumers respond during times of crisis. Extension educators can acquire knowledge of consumers' responses to crises to help build capacity during stressful times (Cronin et al., 2018). These studies are necessary in order to inform practitioners of rapid changes in consumers as they prepare for unexpected events and large-scale stressors.

Considering the unexpected nature of the COVID-19 pandemic, the studies used to frame and inform our understanding of pandemic consumer behavior come from market data, government reports, and empirical works found in the crisis and natural disaster literature (Bachman et al., 2020; Baker et al., 2020; Garner et al., 2020). Given the paucity of research related to pandemic consumer behavior, this study fills an important gap in the literature, thus deepening our understanding of consumer behavior in rapid and unexpected times of crisis. Specifically, the purpose of this study was to examine consumer behavior at the start of the COVID-19 pandemic.

Beyond expanding our empirical understanding of consumer behavior during times of distress, findings from this study can be used to help families deal with the economic fallout resulting from the COVID-19 pandemic (Yeyati & Filippini, 2021). Extension educators have a long history of providing information and support in times of crisis (Tobe et al., 2016); as such, practitioners and extension educators can use the findings from this study to help frame the delivery of educational programs as well as their approaches to families facing economic hardship during the time of COVID-19.

Literature Review and Conceptual Framework

Consumer Expenditures and Product Categories

Family resource management theory posits that external stimuli have an impact on the behaviors of individuals and family systems (Deacon & Firebaugh, 1988). External forces, such as the

COVID-19 pandemic, have had an influence on the demands and resources of individuals and families, which in turn influence people's actions or inactions. According to this theory, consumers' expenditures, choices across product categories, and shopping behaviors are expected to be influenced by the COVID-19 pandemic. The impact of COVID has also led to changes in expenditures, choices, and shopping behaviors, which are mainly due to individuals' economic situations prior to the pandemic (Baker et al., 2020).

Research shows a varied and, at times, vastly different financial reality for families in the face of COVID-19. Families able to keep their jobs and work from home have survived and even thrived in the COVID-19 economy (Fitzsimmons, 2020; Prime et al., 2020). Other families, especially those in the middle and bottom of the social strata, live with heightened concerns about COVID-19 and its impact on their financial livelihoods (*Wall Street Journal*, 2020), particularly for the younger generation (Garner et al., 2020). For essential employees working directly with customers, such as food service workers, these concerns were amplified; employees needed to work in public spaces to get paid, even if this made them at greater risk of contracting COVID-19 (Faghri et al., 2021). However, failure to work in these environments increased the risks of financial hardship (Faghri et al., 2021). At the onset of the pandemic, individuals living in economic hardship had difficulty paying for the usual household expenses (e.g., food, mortgage, medical; Garner et al., 2020), likely due to reductions in work hours, layoffs, and job loss work—all of which compounded the financially fragile reality of these households (Friedline et al., 2020; Zabek & Larrimore, 2020).

COVID-19, consumer concern over income reductions, and a nebulous economic outlook have all fueled shifts in current and anticipated consumer purchasing (Binder, 2020). As with other large-scale economic shocks, such as the housing bust and great recession, COVID-19 has impacted the everyday consumption and expenditures of families (Serido, 2020). While these events are unexpected, given the cyclical nature of the economy (e.g., recessions), families can prepare in advance by creating a disaster and contingency plan that includes emergency protocol and additional savings to continue to support the family (Setiadi & Frederika, 2022). While during other large-scale economic shocks, there was a noticeable decrease in overall spending, the COVID-19 pandemic also brought noticeable differences in the types of products purchased (Garner et al., 2020). In light of COVID-19, changes in consumer spending have been noted across all product categories (Baker et al., 2020). In general, consumer spending on goods has been resilient through the pandemic, while consumer spending on services has seen marked reductions (Bachman et al., 2020). However, a deeper look into spending, according to the U.S. Household Pulse Survey in December 2020 (Garner et al., 2020), demonstrates a greater prevalence of protective consumer behavior, including avoiding eating at restaurants and opting for curbside pickup. Additional data indicate that, during the onset of the pandemic, clear drops in consumer spending were largest for travel and clothing (Coibion et al., 2020). The large declines in travel and clothing spending are consistent with Du and Kamakura (2008), who found that consumers decrease their discretionary spending, thus allowing for smaller changes in non-

discretionary spending. While large declines were seen in travel, entertainment, and clothing, other categories, such as food, saw only modest decreases (Coibion et al., 2020). After the lockdowns were lifted, consumer spending rebounded in the third quarter of 2020. Yet, a full return to consumer spending, especially in the entertainment, service, and travel sectors, is not anticipated until early 2022 (Bachman et al., 2020).

Online Shopping and Co-shopping

Restrictions on brick-and-mortar shopping, as well as changes in product inventory, had an impact on consumer shopping behaviors. According to a recent survey conducted by the NRF, over 90% of consumers have changed their shopping behaviors in response to COVID-19 (NRF, 2020), including shifts in shopping channels (e.g., a greater frequency of online shopping). In the face of widespread government lockdowns, many consumers became more familiar with online shopping and other shopping channels (e.g., curbside pickup) in order to meet shopping needs once fulfilled through brick-and-mortar patronage and to avoid crowds (Garner et al., 2020; NRF, 2020). While all channels experienced product inventory issues, the online channel allowed for greater search capabilities to locate needed products (Baig et al., 2020). That is, product inventories were disrupted due to supply chain shortages (i.e., factory closures) and inconsistent demand for particular products (furniture, DIY products, etc.). However, online shopping provided additional sources for needed products that may not have been available in local stores (Roggeveen & Sethuraman, 2020).

It is important to note, however, that consumers' increased use of e-commerce is not consistent across product categories or consumer segments. Analysis of marketing research reveals that consumer shopping online has increased, especially for essentials (e.g., food) and home entertainment (e.g., puzzles), with lower increases noted for discretionary items (e.g., clothing; Coggins et al., 2020). When lockdown orders were relaxed and/or lifted, many consumers continued to depend on online shopping either as a sole shopping channel or one used in conjunction with offline purchasing options (Nielsen, 2020). Their continued reliance on online shopping varies with some cited reasons, including safety concerns and the need to maximize value (NRF, 2020).

As demonstrated in the research, shopping with others (i.e., co-shopping) is more likely to happen when consumers are uncertain of their ability to evaluate products and brands (Mangleburg et al., 2004). Typically, co-shopping refers to consumer groups who collaborate and coordinate their shopping endeavors (Chan & Li, 2010). Shopping with others helps consumers make purchase decisions by reducing perceptions of risk and uncertainty (Kiechker & Hartman, 1993). In other words, shopping with others allows one to ask, "Have you tried this?" or "Does this fit me correctly?"; thus gaining others' opinions when shopping. For this study, co-shopping is conceptualized more broadly to include the practice of shopping with others,

regardless of access or cost benefits. Co-shopping has yet to be examined against the backdrop of uncertainty and crisis. This study seeks to address that void in the literature.

Consumer Emotions and Individual Characteristics

Boss's (2017) family stress theory explores how stressors impact the family system. Frequent stressors can lead to personal and family crises, including emotional and psychological crises. External disturbances (natural disasters, pandemics) can also have an impact on the coping responses of the family unit (Serido, 2020). How individuals and their families view a stressor/situation is often influenced by gender, age, race, ethnicity, and class; however, such demographic influences are beyond the scope of the current study. Consumers' adaptation and coping in a crisis situation can be influenced by their financial situation and decision-making skills, how they respond to stressful situations, and their personal and family resiliency (Dollahite, 1991; Patterson, 2002).

In the face of traumatic events, individual factors (e.g., individual's emotional response and awareness of the traumatic events) have an impact on the ways individuals cope (Sneath et al., 2009). Various emotional reactions (i.e., anger, anxiety, sadness, fright) are documented in traumatic situations (Jin et al., 2012; Kim & Cameron, 2011), implying the possibility of multi-faceted emotional reactions when facing disasters. In other words, just like any unexpected or turbulent event, there are no specifically prescribed emotional reactions to such events (Jin et al., 2012; Kim & Cameron, 2011). Thus, it is likely that consumers may experience varied or multiple emotional reactions throughout the COVID-19 pandemic. In disaster literature, researchers predominately focused on the influence of negative emotions (e.g., anger, anxiety, sadness) in responding to a crisis (e.g., the role of negative emotions in influencing behavioral intentions; Choi & Lin, 2009; Jin et al., 2012; Kim & Cameron, 2011). While less developed, a growing body of research has worked to identify positive psychological responses (e.g., resilience) to individuals' crisis coping (e.g., Bonanno, 2004). For example, the literature notes that positive emotional responses serve as a way to cope by helping individuals reframe a threat as a challenge and providing motivation and sustainable coping efforts that are needed over the long term. (Folkman, 2013). When faced with external situations beyond one's control, emotion-focused coping mechanisms can be employed as a means of self-control. For example, when faced with a disaster, individuals may not be able to solve external (e.g., physical impact) issues; as such, emotional coping strategies are carried out to cope with, manage, and control stress induced by such stressful events (Lim et al., 2019).

As for psychological aspects, a critical psychological status in response to stressful events includes resilience and/or the optimistic capacity of individuals (Bonanno, 2004; Riolli et al., 2002). Resilience refers to the ability of an individual to remain psychologically stable and healthy when faced with a disruptive event, such that they can more easily overcome the trying time (Bonanno, 2004). In addition to resiliency, consumers' level of optimism can play a strong

positive role in how they respond to disaster (Riulli et al., 2002). Optimism, an individual characteristic, refers to an individual's general tendency to anticipate positive outcomes (Riulli et al., 2002). This positive future orientation can help consumers frame future economic conditions in a positive light (Puri & Robinson, 2007). Such positive psychological responses can lead to proactive actions, which can serve as a source of hope for individuals in times of hardship (Prawitz et al., 2013). Currently, there is a lack of empirical evidence identifying which and how consumers' psychological and emotional experiences affect consumer behaviors during times of crisis.

The need to better understand how consumers changed their behavior at the onset of the COVID-19 pandemic is based on the following three research questions:

1. Has COVID-19 changed consumer shopping behaviors in terms of product categories and retail channels?
2. Have consumers changed their shopping behaviors in terms of co-shopping and monthly expenditures for various product categories as a result of COVID-19?
3. How are consumers' emotions during COVID-19 and individual characteristics (resilience and optimism) related to their current decision-making in terms of shopping frequency, change in monthly expenses, and co-shopping?

Method

Data Collection Protocol

Data were collected using Qualtrics as an online survey panel across the U.S. ($N = 315$) at the onset of the COVID-19 pandemic in March 2020. Respondents were compensated for their participation in the study through Qualtrics. While the research was conveniently collected, several steps were taken to reflect a more representative sample of the general U.S. population. Specifically, quotas were implemented to reflect demographic characteristics (i.e., gender and income) of the general U.S. population. This study sought to understand better consumers who modified purchasing as a result of COVID-19. A filter question was used, "When did you first start to modify, if at all, your shopping and purchase behavior for COVID-19?" As such, respondents who reported not modifying their shopping or purchasing behavior for COVID-19 did not qualify for this study and could not participate. As a result of this screening protocol, a total of 1,664 individuals initiated the survey, but only 315 consumers qualified for completion. Those who did qualify first read a brief introduction about the research and answered questions about emotional responses (resilience and optimism) and their shopping behaviors with national chain stores and small businesses at the onset of the pandemic. Last, demographic information was collected. In total, participants responded to 41 questions.

Sample of Study

Of the respondents, ages ranged from 18 to 77 years old, with an average of 45 years old. Gender was evenly split (female: $n = 159$, 50.5%; male: $n = 154$, 48.9%; other: $n = 2$, 0.6%); income was relatively evenly distributed across the sample, with the majority of participants having a household income over \$60,000 annually. Unfortunately, changes in income due to the COVID-19 pandemic were not measured in this survey. The majority of respondents identified as white/Caucasian ($n = 233$, 74.0%), followed by African American ($n = 28$, 8.9%), Hispanic ($n = 23$, 7.3%), Asian American/Asian ($n = 23$, 7.3%), and others ($n = 8$, 2.6%). Participants were also well educated, with the majority having some college, a college degree, or a postgraduate degree ($n = 253$, 80.3%). At the time of data collection in April 2020, respondents reported modifying their shopping behavior due to COVID-19 (more than a month ago: $n = 202$, 64.1%; 2–4 weeks ago: $n = 89$, 28.3%; 1–2 weeks ago: $n = 16$, 5.1%; in the past week: $n = 8$, 2.5%) and spending extra money in their preparation (i.e., “Did you spend any extra money on products as your prepared for COVID-19?”, less than \$100: $n = 73$, 23.2%; between \$100–\$199: $n = 49$, 15.6%; between \$200–\$299: $n = 56$, 17.8%; between \$300–\$399: $n = 31$, 9.8%; between \$400–\$499: $n = 10$, 3.2%; over \$500: $n = 25$, 7.9%).

Survey Instrument

Research Question 1 (RQ1)

To understand how COVID-19 has changed consumer shopping behavior, participants were asked to measure the frequency of shopping with two product categories (i.e., essential and nonessential products) and four retail channels (i.e., physical/online and national/small retail stores) at two points in time (i.e., before and during the pandemic). With the product-retail channel-time combination in mind, researchers developed 16 questions pertaining to shopping frequency both before and during the COVID-19 pandemic for essential and nonessential shopping across physical national retail stores, online national chain stores, physical small retail stores, and online small retail stores. Examples of essentials (e.g., food, hygiene products) and nonessentials (e.g., clothing, footwear, toys) were listed. Additionally, examples of national chains (e.g., Walmart, Macy’s) and small businesses (e.g., independent/family-owned) were listed. Frequency options included *less than once a month* (1), *about once a month* (2), *several times a month* (3), *weekly* (4), and *several times a week* (5).

Research Question 2 (RQ2)

This study sought to understand how COVID-19 has changed consumer behavior in terms of co-shopping and monthly expenditures for various product categories. To assess consumers’ level of co-shopping, respondents were asked, using a semantic differential scale, how they liked to shop both before and during COVID-19 (1 = *always by myself* and 7 = *always with someone (friend, group, etc.)*), for a total of two questions. To measure changes in monthly expenditures for

various product categories, respondents estimated the average monthly expenditure spent on each product category listed before (during) COVID-19. The ten product and service categories included clothing/apparel, footwear, accessories (e.g., wallets, watches), electronics (e.g., games, earphones), services (e.g., gym membership, hair and beauty services), household supplies (e.g., cleaners), media and entertainment (e.g., streaming, gaming), and personal care products (e.g., cosmetics, skin care products), travel and tourism (e.g., hotel, air travel), and food and beverage (e.g., dining out). Monthly expense options included \$0 (1), *under \$50* (2), *between \$50–\$149* (3), *between \$150–\$299* (4), *between \$300–\$499* (5), and *over \$500* (6). Questions corresponding to the above ten product/service categories were asked for both before and during the pandemic, resulting in a total of 20 questions. All questions to address research question 2 were developed by researchers of this study.

Research Question 3 (RQ3)

Respondents answered questions to capture how their emotions and individual characteristics (resilience and optimism as independent variables) during the pandemic influenced their current decision-making in terms of changes in shopping frequency, monthly expenses, and co-shopping. Emotions were measured using eight items (positive emotions: relaxed, comfortable, reassured; negative emotions: tense, nervous, anxious, fearful, stressed) from Maheswaran and Meyers-Levy (1990) on a 5-point scale (1 = *not at all*; 5 = *extremely*; e.g., “Currently to what extent do you experience relaxed?”). Higher scores reflect higher levels of emotional state. Past research identified varying dimensionality of resilience (i.e., active and passive resilience; Burnard & Bhamra, 2019). Resilience was measured using a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*), where higher scores reflect higher levels of resilience. Optimism was assessed using Taute et al.’s (2010) six-item scale (e.g., “I never give up when faced with a challenge”). Optimism was also measured using a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*), where higher scores reflect higher levels of optimism. Last, respondents answered demographic questions (i.e., age, gender, household income, education).

Data Analysis

This study addressed three research questions to understand how consumers changed their behavior at the onset of the COVID-19 pandemic. RQ1 concerns whether COVID-19 changed consumer shopping frequency across product categories and retail channels. A paired *t*-test was applied to compare shopping frequency scores at two different points in time— before and during the pandemic. This pair was set as a categorial variable, and shopping frequency was a continuous variable. A comparison was performed for each combination of product and retail channel, resulting in a total of 16 *t*-tests.

RQ2 examines whether consumer shopping behaviors have changed in terms of co-shopping and average monthly shopping expenditure as a result of COVID-19. As with RQ1, a paired *t*-test was applied where the measurements of each shopping behavior were compared between two

time points – before and during the pandemic. Consumers' co-shopping and monthly shopping expenses were measured as continuous variables and used to represent shopping behaviors for two *t*-tests.

RQ3 asks how consumers' emotions during COVID-19 and individual dispositional traits (resilience and optimism) are related to their current decision-making with respect to changes in shopping frequency, monthly expenses, and co-shopping. Data analyses consisted of three steps. First, an exploratory factor analysis (EFA) was performed to derive underlying constructs of emotions, resilience, and optimism individually. This analysis was necessary because the literature documented inconsistent dimensionality of emotions, and the measures of emotions, resilience, and optimism were tested in general contexts, not in the context of this study, which is the COVID-19 pandemic. Following this, a confirmatory factor analysis (CFA) was performed to assess the measurement model of the constructs identified in the EFA, thereby confirming the construct validity of each independent variable. Last, three separate hierarchical multiple regression analyses were performed for each dependent variable. All independent variables were entered into the regression analysis simultaneously, and demographics (age, gender, education, income) were entered as covariates. For operationalization, each independent variable was computed by taking the mean value of its measurement scores. In contrast, each dependent variable, changes in shopping frequency, monthly expenditures, or co-shopping, was created by taking the difference between the during- and pre-pandemic scores. For example, the change in shopping frequency variable was created by subtracting the score of before-pandemic shopping frequency from that of during-pandemic shopping frequency. The higher the score of change in shopping frequency, the higher the frequency of shopping during the pandemic than before the pandemic. As a result, independent and dependent variables were continuous variables, and so were all covariate variables except for gender, which was a categorical variable, with males as the reference group. It is also noteworthy that whereas regression analyses were performed with the original dataset, EFA and CFA were administered using separate data sets to avoid capitalization on chance. That is, the original dataset was randomly divided into two estimation and validation datasets, which were used for EFA ($n = 148$) and CFA ($n = 163$), respectively. There were no differences in respondents' demographics between the two groups. CFA was tested with IBM AMOS 27.0, and all other tests were run using IBM SPSS Statistics 27.0.

Results

Research Question 1

Overall, paired sample *t*-tests revealed that for essential (e.g., food, hygiene products) and nonessential (e.g., clothing, footwear, toys) items, there was a significant difference in the frequency of shopping in brick-and-mortar retailers, both national chains and small stores (see Table 1). Specifically, for essential products, there was a significant increase in frequency of shopping in brick-and-mortar stores across national chains (before $M = 3.00$, during $M = 4.22$, %

change = +47.30%, $t = 8.265$, $p < .001$) but a significant decline in frequency of shopping in brick-and-mortar stores across small businesses (before $M = 2.62$, during $M = 2.12$, % change = -19.08%, $t = 7.180$, $p < .001$). This suggests that consumers were frequenting brick-and-mortar national chain stores, rather than small businesses, for essential products during the pandemic.

However, for nonessential products, there was a significant decrease in shopping frequency across brick-and-mortar national chains (before $M = 2.50$, during $M = 1.97$, % change = -21.20%, $t = 7.575$, $p < .001$) and small businesses (before $M = 2.28$, during $M = 1.85$, % change = -18.86%, $t = 8.265$, $p < .001$). Thus, brick-and-mortar shopping frequency decreased during the pandemic for nonessential products, regardless of whether stores are national chains or small businesses. Interestingly, there was no significant change in online shopping frequency, regardless of product category (essential or nonessential) or whether the retailer was a national chain or a small business. For essential products (national chain: before $M = 2.11$, during $M = 2.19$, % change = +3.79%, $t = -1.074$, p -value = .284; small business: before $M = 2.06$, during $M = 1.97$, % change = -4.37%, $t = 1.382$, p -value = .168) and nonessential products (national chain: before $M = 2.06$, during $M = 1.97$, % change = -4.37%, $t = -1.333$, p -value = .183; small business: before $M = 1.97$, during $M = 1.88$, % change = -4.57%, $t = 1.497$, p -value = .136), no significant differences existed. Thus, the frequency of consumer online shopping behavior remained the same for participants.

Table 1. Research Question 1: Change in Shopping Frequency by Product Category and Retail Channel

Product Category	Retail Channel		Shopping Frequency Mean	Change (%)	t-value	p-value
	Brick-and-Mortar/Online	National Chain/Small Business				
Essential Products	Brick-and-Mortar	National Chain	Before (3.00) During (4.42)	+47.30%	8.265	< .001
		Small Business	Before (2.62) During (2.12)	-19.08%	7.180	< .001
	Online	National Chain	Before (2.11) During (2.19)	+3.79%	-1.074	.284
		Small Business	Before (2.06) During (1.97)	-4.37%	1.382	.168
Nonessential Products	Brick-and-Mortar	National Chain	Before (2.50) During (1.97)	-21.20%	7.575	< .001
		Small Business	Before (2.28) During (1.85)	-18.86%	6.583	< .001
	Online	National Chain	Before (2.06) During (1.97)	-4.37%	1.333	.183
		Small Business	Before (1.97) During (1.88)	-4.57%	1.497	.136

Note. A higher mean indicates greater shopping frequency.

Research Question 2

Co-shopping

Regarding changes in consumers' co-shopping behaviors (i.e., whether consumers shop by themselves or with others) due to COVID-19, *t*-tests revealed a significant change (before $M = 3.89$, during $M = 2.96$, % change = -23.91%, $t = 7.919$, $p < .001$) (see Table 2). Thus, the likelihood of co-shopping has declined by 23.91%, indicating that consumers are shopping more by themselves during the pandemic than before.

Table 2. Research Question 2: Change in Co-shopping Behavior

Co-shopping Behavior Mean	% Change	<i>t</i> -value	<i>p</i> -value
Before (3.89)			
During (2.96)	-23.91	7.919	< .001

Note. A higher mean indicates greater co-shopping behaviors.

Monthly Expenditures

Furthermore, monthly expenditures also significantly decreased due to the pandemic across all product categories assessed (see Table 3). The largest decrease happened for clothing/apparel (before $M = 2.87$, during $M = 1.60$, % change = -44.25%, $t = 22.232$, $p < .001$), followed by travel and tourism (before $M = 2.55$, during $M = 1.48$, % change = -41.96%, $t = 12.415$, $p < .001$), and footwear (before $M = 2.45$, during $M = 1.52$, % change = -37.96%, $t = 17.579$, $p < .001$). Media and entertainment (% change = -29.24%, $t = 12.650$, $p < .001$) and food and beverage (% change = -27.32%, $t = 18.676$, $p < .001$) experienced the smallest decrease.

Table 3. Research Question 2: Change in Monthly Expenditures by Product Category

Product Category	Before	During	% Change	<i>t</i>	<i>p</i> -value
Clothing/Apparel	2.87	1.60	-44.25%	22.232	< .001
Footwear	2.45	1.52	-37.96%	17.579	< .001
Accessories	2.07	1.38	-33.33%	12.755	< .001
Electronics	2.37	1.57	-33.76%	11.180	< .001
Services	2.37	1.48	-37.55%	13.941	< .001
Household Supplies	2.72	1.92	-29.41%	14.687	< .001
Media and Entertainment	2.36	1.67	-29.24%	12.650	< .001
Personal Care	2.63	1.76	-33.08%	16.598	< .001
Travel and Tourism	2.55	1.48	-41.96%	12.415	< .001
Food and Beverage	3.88	2.82	-27.32%	18.676	< .001

Note. A higher mean indicates greater monthly expenditures.

Research Question 3

Initially, EFA revealed that optimism is unidimensional, whereas resilience and emotions are bi-dimensional (see Table 4). Resilience emerged in active (3 items) and passive (3 items) forms,

explaining 70.06% of the total variance in the original measurement. The active resilience dimension demonstrates an individual's ability to be proactive in adjusting to disturbances (e.g., "I tend to bounce back quickly after hard times"), whereas passive resilience demonstrates an individual's resistance against stressful occurrences (e.g., "It is hard for me to snap back when something bad happens"). The two-dimensionality of resilience aligns with Burnard and Bhamra's (2019) bidimensional model describing resilience in terms of active and passive resilience. Three items emerging into passive resilience were reverse-coded for better interpretations. Emotions emerged in both negative (5 items; e.g., "tense") and positive (3 items; e.g., "relaxed") forms, together explaining 74.46% of the total variance in the original measurement. All scales showed high internal consistency (Cronbach's alphas > 0.84).

CFA was also used for evaluating the measurement model with five constructs (i.e., optimism, active resilience, passive resilience, negative emotions, and positive emotions). Acceptable model fit was achieved: $\chi^2 = 298.26$, $df = 113$, $\chi^2/df = 2.64$, Standardized RMR = .054, IFI = 0.95, TLI = 0.94, CFI = 0.95, RMSEA = 0.07, 90% CI [0.06, 0.08] (Fornell & Larcker, 1981). Therefore, the measurement model fits the data. Additionally, internal reliability, convergent validity, and discriminant validity were tested. All factor loadings were significant, and the average variance extracted (AVE) in indicators by their corresponding construct exceeded 0.50; thus, convergent validity was confirmed. All constructs have internal consistency since composite reliability was greater than 0.86. Discriminant validity was also confirmed; AVE estimates of each construct appeared greater than the squared multiple correlation estimates between all possible pairs of constructs (see Table 5). Therefore, further analyses and discussions were made based on the five independent variables.

Table 4. Exploratory Factor Analysis and Confirmatory Factor Analysis

Factor/Items	Std. Factor Loading	
	EFA	CFA
Optimism (<i>Var.</i> = 62.93%, α = 0.91, <i>CR</i> = 0.91)		
I keep going in the face of adversity	0.93	0.84
I keep trying in the face of obstacles	0.83	0.83
I never give up when faced with a challenge	0.81	0.81
I have the will to win	0.78	0.79
I continue to try even when it seems hopeless	0.74	0.75
I don't let anxiety keep me from accomplishing my goals	0.68	0.75
Passive resilience (<i>Var.</i> = 50.69%, α = 0.88, <i>CR</i> = 0.88, reverse coded)		
I tend to take a long time to get over setbacks in my life	0.90	0.74
It is hard for me to snap back when something bad happens	0.85	0.90
I have a hard time making it through stressful times	0.76	0.89
Active resilience (<i>Var.</i> = 19.37%, α = 0.86, <i>CR</i> = 0.86)		
I tend to bounce back quickly after hard times	0.87	0.84
It does not take me long to recover from a stressful event	0.83	0.84
I usually come through difficult times with little trouble	0.79	0.80

Factor/Items	Std. Factor Loading	
	EFA	CFA
Negative emotion (Var. = 52.41%, α = 0.94, CR = 0.94)		
Tense	0.90	0.90
Nervous	0.90	0.89
Anxious	0.89	0.90
Fearful	0.85	0.82
Stressed	0.82	0.86
Positive emotion (Var. = 22.05%, α = 0.87, CR = 0.88)		
Relaxed	0.91	0.71
Comfortable	0.85	0.92
Reassured	0.73	0.87

Note. Var. = variance explained, α = Cronbach's alpha, CR = composite reliability

Table 5. Convergent and Discriminant Validity

	Mean (SD)	Optimism	Passive Resilience	Active Resilience	Negative Emotion	Positive Emotion
Optimism	5.31 (1.05)	0.63	0.05	0.36	0.01	0.09
Passive Resilience	4.22 (1.53)		0.72	0.23	0.37	0.04
Active Resilience	4.46 (1.37)			0.68	0.08	0.23
Negative Emotion	2.80 (1.15)				0.76	0.11
Positive Emotion	2.62 (1.02)					0.70

Note. The numbers in the diagonal are the average variance extracted by each construct. The numbers above the diagonal show the squared correlation coefficients between the constructs.

Three hierarchical multiple regression analyses were run to determine regression coefficients of predictors of interest after controlling for covariates (see Table 6). A regression model included five independent variables and a dependent variable of the change in shopping frequency, monthly expenditures, and co-shopping separately. Covariates were placed in the first step, followed by the independent variables added in the second step.

Shopping Frequency

The first step of the model, where demographic covariates were entered, accounted for 0.7% of the variance in change in shopping frequency due to COVID-19, but their prediction was insignificant (adjusted $R^2 = .007$, $F = 1.52$, $p = .197$). The full model in the second step, where independent variables were added, significantly explained 7% of the variance (adjusted $R^2 = .070$, $F = 3.62$, $p < .001$, *Sig F change* $< .001$). Results suggest that lower positive emotions ($B = -0.15$, $t = -2.662$, $p = .008$), lower passive resilience ($B = -0.09$, $t = -2.280$, $p = .023$), higher active resilience ($B = 0.15$, $t = 3.065$, $p = .002$), and lower optimism ($B = -0.17$, $t = -2.882$, $p =$

.004) influence shopping frequency (i.e., an increase in shopping frequency during the pandemic compared to before). However, negative emotions do not influence changes in shopping frequency ($B = 0.01, t = .209, p = .834$).

Co-shopping

The regression model in the first step was insignificant (adjusted $R^2 = -.009, F = 0.267, p = .899$), indicating that the predictive power of covariates toward change in co-shopping is negligible. The full model in the second step was significant, accounting for a 2.8% variance of change in co-shopping (adjusted $R^2 = .028, F = 1.991, p = .040, Sig F change = 0.006$). The lower passive resilience ($B = -0.24, t = -2.436, p = .015$) and optimism ($B = -0.37, t = -2.680, p = .015$) consumers tend to hold, the more likely they are to shop with someone else. Active resilience ($B = 0.19, t = 1.655, p = .099$), negative emotions ($B = -0.18, t = -1.352, p = .177$), and positive emotions ($B = -0.23, t = -1.765, p = .079$) are not related to changes in co-shopping behavior.

Monthly Expenditures

In terms of change in monthly expenditures, the regression model with covariates in the first step significantly accounted for 3% of the variance (adjusted $R^2 = .027, F = 3.19, p = .014$), and the full model in the second step predicted 4% of the variance ($R^2 = 0.042, F = 2.53, p = .008$). Next, we turned to each independent variable to see if it predicted changes in monthly expenses after controlling for covariates, especially income ($B = -0.03, t = -2.104, p = .036$). Two variables, optimism ($B = -0.10, t = -2.334, p = .020$) and active resilience ($B = 0.09, t = 2.389, p = .017$), were shown to be significantly related to change in monthly expenses in that higher optimism decreases change in monthly expenditure, while higher active resilience increases monthly expenditure during the pandemic in comparison with before the pandemic.

Table 6. Research Question 3: Multiple Regression Analyses

Predictor	Shopping Frequency			Monthly Expenditure			Co-shopping		
	B	S.E.	p-value	B	S.E.	p-value	B	S.E.	p-value
<i>Independent variables</i>									
Optimism	-0.17	0.06	0.004**	-0.10	0.04	0.020*	-0.37	0.14	0.008**
Passive resilience	-0.09	0.04	0.023*	-0.06	0.03	0.065	-0.24	0.10	0.015*
Active resilience	0.15	0.05	0.002**	0.09	0.04	0.017*	0.19	0.12	0.099
Negative emotion	0.01	0.05	0.834	-0.01	0.04	0.908	-0.18	0.13	0.177
Positive emotion	-0.15	0.06	0.008**	0.00	0.04	0.913	-0.23	0.13	0.079
<i>Covariates</i>									
Age	0.00	0.00	0.759	0.00	0.00	0.120	0.01	0.01	0.190
Gender (reference: male)	-0.18	0.11	0.104	-0.08	0.08	0.296	-0.32	0.26	0.902
Income	-0.03	0.02	0.146	-0.03	0.01	0.036*	-0.01	0.04	0.789
Education	-0.01	0.04	0.801	-0.04	0.03	0.092	-0.03	0.09	0.746

Note. B = Unstandardized coefficients; * $p < 0.05$, ** $p < 0.01$

Discussion and Implications

The purpose of this study was to examine consumer behavior at the start of the COVID-19 pandemic one month after its onset in the United States. This study investigated three research questions to understand shopping behaviors during the pandemic.

The first research question asked whether COVID-19 has changed consumer shopping behaviors in terms of product categories and retail channels. Consumers in this study reported an increase in purchasing essential products and a decrease in purchasing nonessential products. This overall finding mirrors findings from the marketing research literature (Bachman et al., 2020; Coibion et al., 2020). Specific results provide further clarity on consumer behavior during these trying times. Results indicate that, for essential products, there was a significant increase in the frequency of shopping in brick-and-mortar stores across national chains but a significant decline in the frequency of shopping in brick-and-mortar stores across small businesses. Furthermore, for nonessential products, there is a significant decrease in shopping frequency across brick-and-mortar national chains and small businesses. Thus, brick-and-mortar shopping frequency for nonessential products has decreased during the pandemic, regardless of whether stores are national chains or small businesses. While these findings do represent a point-in-time glimpse of purchasing at the start of the pandemic, later studies have indicated that consumers have changed their consumption patterns as a result of the pandemic (Mitterling et al., 2020); thus, this research should be interpreted in light of the data collection timepoint.

Beyond identifying changes in consumer purchasing for product categories, the first research question of this study also examines the extent to which consumers frequented national chains and small businesses. Findings from this study show that, unfortunately, small businesses may suffer the most due to COVID-19. Data indicate that consumers first visited national chain stores rather than small businesses for essential products (e.g., food, hygiene products). In fact, results indicate that, for essential products, the frequency of shopping at national chain brick-and-mortar stores increased but decreased for small businesses. While this information is useful, it is important to note that, in some states, small businesses were mandated to close, whereas national chain stores could remain open. This mandate may have impacted findings and is worthy of additional insight in future studies. Additionally, supply chain issues were rampant throughout the pandemic, and consumers may have relied on national chain stores to fulfill their needs, given their buying power to obtain limited stock. However, small businesses may not have had the same options to obtain difficult-to-find products. For nonessential products (e.g., clothing, footwear, toys), there was an overall decrease in the frequency of shopping across retail channels, indicating that consumers may be simply going without nonessential products. This finding aligns with household data indicating that consumers have difficulty paying for usual household expenses (e.g., food, mortgage payments, medical expenses; Garner et al., 2020). This finding is consistent with recent literature indicating spending reductions in nonessential categories, including clothing and travel (Coibion et al., 2020; Garner et al., 2020). The most

concerning finding is the toll that COVID-19 has on small businesses. Considering that small businesses create entrepreneurial opportunities for upward financial mobility, this channel and its corresponding owners may be most fragile as a result of COVID-19. It may have been challenging for small businesses to open during government-imposed shutdowns (Garner et al., 2020), and national chain stores may have a greater pool of financial resources (Josephson et al., 2017), which allow these retailers to address the need for social distancing and increase consumer comfort. Contrary to consumer data (Garner et al., 2020; NRF, 2020), participants in this study noted no changes in online shopping. Given the timing of this study (one month into the pandemic), it is possible that consumers later altered their shopping behavior by increasing online shopping prevalence. Some family stress literature points to a time of processing before one reacts or adapts to a stressor (Patterson, 2002). Applying this understanding in the current context may help to explain why there was no change in shopping channels. Perhaps changes in shopping channels happened later after households had processed the initial stressor. This explanation would be in keeping with longitudinal consumer data regarding increased online shopping (Nielsen, 2020).

The second research question of this study examined the extent to which consumers may have changed their shopping behaviors in terms of monthly expenditures for various product categories. Findings demonstrated a decrease in expenditures across all product categories examined. The largest decreases were for clothing/apparel, travel and tourism, and food and beverage. These findings are consistent with those of other studies, showing a marked decline in expenditures for apparel and services, such as travel, tourism, and food and beverage (Federal Reserve Bank of St. Louis, 2021). Based on consumer studies from later in the pandemic (Mitterling et al., 2020), it appears that the initial decreases in spending in these categories have held constant. The likelihood that consumers return to pre-pandemic expenditures in these categories is worthy of examination, which is critical to help revitalize these large industries.

Last, the third research question of this study investigated whether consumers' emotions during COVID-19 and individual characteristics (resilience and optimism) are related to their current decision-making in terms of shopping frequency, change in monthly expenses, and co-shopping. In line with previous research (e.g., Choi & Lin, 2009; Folkman, 2013; Sneath et al., 2009), findings from this study highlight that consumers' individual psychological characteristics and emotional experiences during times of distress play a role in shopping behavior. Data indicates that lower positive emotions, lower passive resilience (i.e., resistance against stressful occurrences), and higher active resilience (i.e., finding challenges to overcome stressful occurrences) are significantly associated with a positive increase in shopping frequency. Furthermore, results indicate that lower levels of passive resilience and optimism are related to increases in co-shopping. As for emotional experiences, not negative but positive emotions are shown to be critical in driving positive changes in consumer shopping frequency. That is, positive emotions can increase shopping frequency. Positive emotions can trigger motivation, where feeling good (i.e., positive emotions) can move consumers towards thinking about

products that solve problems for themselves and others. Further, individual characteristics, specifically active and passive resilience and optimism, are found to be responsible for driving positive changes in shopping frequency and co-shopping behaviors. While these are new findings in the literature, recent research on consumer behavior during the COVID-19 pandemic helps shed light on the results of this study. Guthrie et al. (2021) argue that in times of environmentally imposed constraints (i.e., the COVID-19 pandemic), consumers tend to react in various ways based on their prescribed emotions in order to regain control of any lost freedoms. This means that in times of stress, consumers may self-select to overcome issues quickly and swiftly (i.e., active resilience) and with a positive outlook (i.e., optimism) or may tend to take longer to recover (i.e., passive resilience); all of which will influence consumer behavior as a coping mechanism by adopting new behaviors and exerting control. Following the coping phase that includes purchase behavior changes, consumers adopt their consumption habits to a new normal (Guthrie et al., 2021).

Limitations and Future Studies

As with all research, this study is not without limitations. While the purpose of this study was to examine consumer behavior at the start of the COVID-19 pandemic, the snapshot in time makes it difficult to extrapolate the findings beyond this initial time period. The extent to which shopping behavior changed as the pandemic progressed cannot be captured by the data collected, inviting further longitudinal investigation of the phenomenon. Similarly, given the supply chain disruptions in obtaining products at the onset of the pandemic (Chen et al., 2021), this may have impacted how consumers responded to purchase behavior questions. Additionally, despite the researchers' efforts to obtain data representative of the overall population by capturing quotas through Qualtrics (i.e., gender and income) of the general US population, the small sample size limits the generalization of findings to U.S. consumer shopping behavior in general. Future research may replicate this study with a larger, nationally representative sample and include additional quotas, including race. It is also possible that consumers' race and/or place of residence (i.e., urban, suburban, rural) may have an impact on shopping choices and availability of retail stores (e.g., small businesses, national chain stores). It would be interesting to discover a deeper analysis of consumers' characteristics and consumers' location as it relates to the research questions proposed in this study. Last, this study examined not causal relationships but correlations among research variables—if and how consumer psychological traits and emotions during the pandemic are associated with shopping behaviors. Future research can offer a more in-depth explication of a conceptual model in which causal relationships among antecedents, mediators, and consequences are proposed along with potential moderators with further exploration of consumer behaviors during and post-COVID-19 pandemic.

Implications

This study has implications for future research and practice. The results indicate that middle-class, white households at the start of the pandemic were in a holding pattern, waiting to see what COVID-19 would bring. The reasons for this behavior are unknown and beyond the scope of the study.

Consumers in this study reported no changes in online shopping one month into the pandemic. However, additional studies clearly show an increase in consumer online shopping throughout the pandemic (e.g., Jensen et al., 2021; Tyrväinen & Karjaluoto, 2022). The extent to which this behavior was a reaction to the initial shock of the pandemic should be examined to understand better consumers' responses to this economic stressor and their coping strategies. The role of family emergency funds, employment status, economic concerns, or health and safety concerns and their impacts on consumer behavior at the start of the pandemic are worthy of additional investigation. Finally, this study provides insights into consumer behavior one month into the COVID-19 pandemic. Other research can be compared against these findings to more fully understand the long-range impacts of the pandemic on consumer behavior and family finances.

Findings from this study can help inform Extension professionals working with family finances. The findings can be used in training Extension professionals to understand better the impact of external shocks on the household and family finances. These findings also help to demonstrate the impact of the larger macro environment on the family system and individual consumption behavior. Findings point to the importance for families to prepare for unexpected events and disasters. While these events are unexpected, they can be seen as somewhat cyclical in the economy; thus, Extension educators can help families actively prepare for such downturns in the economy and other economic disasters (Setiadi & Frederika, 2022). Education on developing a household emergency plan can be offered. Strategies for establishing emergency savings can be shared. Lists of community resources available in times of financial distress can also be compiled and distributed. For Extension professionals working in personal finance, these findings also reiterate the importance of realizing that current financial trends and the larger macro environment impact families and family finances. For example, during COVID-19, financially fragile families were considerably impacted by the pandemic and the economic challenges that ensued. As Extension educators, it is important that this understanding inform and guide the education that is delivered. For example, in light of these trends, education on triaging debt, planning for emergencies, and strategies for generating additional household income are warranted. Additionally, as society moves past the pandemic, Extension educators can use lessons from the pandemic as recent examples of the importance of being financially prepared through budgeting, savings, and positive financial management strategies. This study and subsequent consumer research are important to inform the development of educational programs designed to help families navigate crisis or distress.

Conclusion

COVID-19 has brought widespread changes to consumer spending (e.g., a shift in shopping channels) and purchasing behavior (e.g., frequency of shopping). This study captures shifts in consumer behavior, thus contributing to the research literature. In summary, shopping for essential products increased in frequency for brick-and-mortar national chains but declined in brick-and-mortar stores across small businesses (RQ1). Findings also revealed that consumers were now shopping more by themselves than prior to the pandemic and have decreased their overall spending across various product categories, including clothing, footwear, accessories, electronics, services, household supplies, media and entertainment, personal care, travel and tourism, and food and beverage (RQ2). Last, results indicate that lower levels of positive emotions, passive resilience, and optimism, as well as higher levels of active resilience, influence higher levels of shopping frequency. Additionally, lower levels of passive resilience and optimism are associated with increases in co-shopping behaviors (RQ3). Findings from this study serve as a springboard for additional consumer research during COVID-19 and a stream of research useful in informing the practice of consumer education.

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