This research compares grocery shopping attitudes and behaviors before and during the COVID-19 pandemic, particularly online/offline shopping modes. Prior to COVID-19, more consumers shopped in person, even if it was not preferred; consumers who preferred to shop online were found to have greater need for control. During the pandemic, more consumers adopted online grocery shopping, and differences in need for control disappeared. Qualitative research suggests that need for control was superseded by lower-order needs related to food/safety. There is also a growing consumer desire to grocery shop in person, so postpandemic, this is anticipated to increase relative to online shopping.

Keywords: need for control; lower-order needs; in-person grocery shopping; online grocery shopping

INTRODUCTION

Grocery shoppers can belong to one of two market segments, depending on their preferred shopping mode (Mortimer et al., 2016). These are (1) shopping in person, physically handling and inspecting products before buying, completing purchases through checkout, and transporting items home, or (2) ordering online, relying on photos and written descriptions to select products, and picking up purchases or using delivery. The present research examines consumer attitudes and behaviors both before and during the COVID-19 pandemic to better understand how and why grocery shopping decisions have adapted and to anticipate how they will shift afterward. Findings provide academic insights as well as updated managerial advice.

Prior to the pandemic, known considerations for consumers deciding whether to shop online or in-person were the desired service process and the ability to avoid perceived disadvantages of other options (Goldsmith et al., 2001; Goldsmith & Bridges, 2000; Jayasankaraprasad & Kathyayani, 2014; Melis et al., 2015; Melis et al., 2016; Seitz et al., 2017). Some in-person shoppers liked choosing their own goods, but also did not wish to invest in learning to use
online shopping tools (Van Droogenbroeck & Van Hove, 2020). Some online shoppers preferred ease and convenience, but also wanted to avoid visiting a retail store in-person (Harris et al., 2017). In 2019, the present authors were examining personal characteristics that might influence consumer choice of shopping mode. Need for control (NFC) was found to be related to preference for online grocery shopping, which allows utilization of high-tech shopping options that provide power over the shopping process through ease of use, convenience, and efficiency (Anesbury et al., 2016; Bridges & Florsheim, 2008; Gupta et al., 2004; Jara et al., 2018; Seitz et al., 2017; Wu & Liu, 2021). During the pandemic, NFC was examined again, and found to be unrelated to choice of shopping mode. This finding is consistent with the work of Finsterwalder (2010), who observed increased importance to consumers of lower-order needs immediately following a catastrophic earthquake in Christchurch, New Zealand.

Qualitative research was undertaken to enhance understanding of the reasoning behind this choice and to suggest how consumers might shop following societal recovery. Propositions for further research are developed on the basis of the qualitative results; the concluding section offers suggestions for future design of online and offline shopping environments.

LITERATURE REVIEW AND CONCEPTUAL DEVELOPMENT

Choice of Virtual or In-Person Grocery Retailing Channels

Prior to the onset of the COVID-19 pandemic, consumers’ personal characteristics affected their choice of shopping channel (Gupta et al., 2004; Wu & Liu, 2021). The present research was originally intended to assess the impact of higher-order consumer needs (e.g., emotional and psychological well-being) and lower-order needs (e.g., food and safety) on shopping channel choices and prepandemic data were gathered to do this. However, following a major emergency that affected many people, salient needs were observed to change (Finsterwalder, 2010). Similarly, following the onset of COVID-19, previous theories regarding shopping channel choice were superseded by urgent consumer needs perceived to be more relevant (Aboelenien et al., 2021; Acosta, 2020; Withers, 2020). Not only is there an increased focus on lower-order needs (Itani & Hollebeek, 2021; Nguyen et al., 2021; Van Droogenbroeck & Van Hove, 2020), consumers may perceive greater risks for either in-person or online grocery shopping (Laato et al., 2020; Pantano et al., 2020).

Because of increased concerns over health and safety risks, the pandemic brought a new twist in grocery retailing: during the early months of lockdowns, most members of society were considered “nonessential” and could not leave home, except for medical reasons or going alone to purchase groceries. This experience might have enhanced consumer desire to shop for groceries in-person, because the activity was one of few outside the home in which they could continue to engage. Both online and offline retailers that were patronized during the pandemic could observe permanent changes in consumption patterns if consumers discovered unforeseen benefits of a new shopping method or grew attached to stores (and shopping methods) that helped them during the crisis (Pantano et al., 2020).
Milaković (2021) found that consumer characteristics influenced choice of shopping mode during the pandemic based on social cognitive theory, which suggests that consumers will work to reduce their vulnerability and enhance their resilience when under stress. To better understand how a widespread phenomenon such as COVID-19 can alter the relationship between consumers’ higher-order needs and shopping-related choices, the present research assesses how consumer need for control (NFC) influenced choice of shopping mode before and during the pandemic. A qualitative study is included to draw out consumer reasoning and thought processes as well as perceptions regarding the longevity of pandemic-related changes in grocery shopping mode choices.

Potential Impact of Consumers’ Higher-Order Needs

The idea that consumers’ higher-order needs could influence shopping mode choices was inspired by the work of Maslow (1943), who described lower- and higher-order human needs and indicated that lower-order needs must be met first, after which consumers might seek fulfillment of higher-order needs. This was supported by Valacich et al. (2007), who found this order of meeting consumer needs to apply in online shopping environments, and by Finsterwalder (2010), who observed an increase in the salience of lower-order needs following a stressful natural disaster that caused basic needs to go unmet. As an example of how the impact of a higher-order need can be assessed, consider the work of Forsgren (1971), who measured both NFC and perceived amount of control, finding that consumers having lower levels of NFC are more satisfied than those having higher levels of NFC, ceteris paribus. Thus, NFC and the resultant level of satisfaction might influence consumer choice of shopping mode. To better measure NFC, Burger and Cooper (1979) developed a “desirability of control” scale, which assesses a consumer’s self-reported NFC. Thus, it is possible to reliably measure NFC using a validated scale.

Previous studies have examined the impact of various lower- and higher-order consumer needs on shopping preferences. Samli and Frohlich (1993) offered an example in retail banking where lower-order needs (e.g., efficiency of service) were increasingly met by technology. Customer satisfaction was then enhanced by addressing higher-order needs (e.g., interpersonal interaction). Another example was put forward by Hogg and Michell (1997), who observed that personal factors, both physiological and psychological, can influence consumption choices, and that retailers should meet consumers’ lower-order needs before focusing on higher-order needs. Raymond et al. (2003) concurred, indicating that marketing strategies should be adapted depending on the level in Maslow’s hierarchy of needs where customers tend to focus.

More recently, Nguyen et al. (2021) demonstrated that lower-order needs strongly affect grocery shopping mode choices during the COVID-19 pandemic: their research shows that more consumers shop online due to health and safety concerns. Itani and Hollebeek (2021) also adopted this theme, providing an example of a safety-related lower-order need that has increased in importance during COVID-19: specifically, consumers’ personal characteristics can affect hygiene consciousness, which results in increased social distancing behavior. These authors further observed that online grocery shopping increased during COVID-19, and that consumers intend to continue this behavior for three
months. However, postpandemic shopping intentions were not assessed; the authors reserved that topic for future research.

Rayburn et al. (2021) noted the importance of using longitudinal data to track changing consumer shopping behaviors over the course of the pandemic, and they were able to track these behaviors at three points during the pandemic. Both these authors and Itani and Hollebeek (2021) pointed out that longitudinal research is still needed to make a comparison between prepandemic shopping behaviors and those during the pandemic. In addition, Olbert (2021) indicated the value of determining whether consumers will return to a focus on higher-order needs (e.g., social and cultural) in the postpandemic period. On the topic of lower- and higher-order needs, Pincus (2004) stated that unmet needs can have behavioral and emotional meaning, and motivation results from unmet needs; therefore, he recommended future qualitative research to better understand and guide the use of quantitative findings.

The present research addresses several gaps identified in prior research, including quantitative analysis of longitudinal data offering a view of prepandemic through postpandemic grocery shopping attitudes and intentions. It also contributes to understanding of consumer attitudes and behaviors related to grocery shopping before, during, and after the pandemic through a qualitative approach.

**METHOD AND RESULTS FOR QUANTITATIVE PRE- AND DURING-COVID-19 SURVEYS**

Quantitative survey data were collected online, using Qualtrics, approximately one year before the outbreak of COVID-19; a gender-based quota sample of participants living in the United States was recruited through MTurk and compensated. This approach followed the IRB-approved procedure, which required submission of the survey design to a human subjects committee for evaluation of potential impact on respondents before beginning data collection, and also required that respondents provide their consent prior to participating in the study.

The total number of respondents completing the preCOVID-19 survey was 417; the group was 51% female and 61% under the age of 35. Respondents were asked to disclose weekly grocery budgets and to indicate percentages of the budget spent shopping in-person at local grocery stores and ordering online (from meal kit services, local grocery stores, or other types of stores). The average weekly grocery budget was US$136 (SD = $105), most of which was spent shopping in-person at local stores (M = 75.5%, SD = 33.3%); the remainder was split between online options (M_{OrderLocal} = 11.4%, SD = 20.2%; M_{OtherOnline} = 6.7%, SD = 12.4%; M_{MealKit} = 6.5%, SD = 12.1%). Participants were asked “Assuming that the monetary cost was the same, would you prefer to select your groceries in-person at a local store OR order them online?” In-person grocery shopping was preferred by 61% of the participants (n = 255), with the remaining 39% (n = 162) preferring to order online.

Finally, participants were asked to assess their need for control using an item selected from the Burger and Cooper (1979) scale that offered the best face validity for the grocery shopping situation (“I wish I could push many of life’s daily decisions off on someone else”). Response categories ranged from 1 (This
ANOVA findings indicate that, prior to the pandemic, NFC had a significant influence on choice of shopping mode \([F(1, 415) = 23.75, \ p < .01]\) because respondents that preferred to shop online exhibited higher levels of NFC \((M = 4.65, \ SD = 1.85)\) than did those that preferred to shop in-person \((M = 3.72, \ SD = 2.00)\).

A new sample of U.S.-based survey participants was recruited through MTurk in mid-2020 using quota sampling to obtain equal numbers of male and female respondents, resulting in a total of 93 usable responses. This group was 51% female, 81% under the age of 45, and hailed from all four regions of the United States as defined by the U.S. Census Bureau (14% were from the Northeast, 19% from the Midwest, 42% from the South, and 25% from the West). Participants answered the same questions in Qualtrics as did preCOVID respondents, including household grocery budget, spending using in-person and online options, and preferred grocery shopping mode. However, these respondents answered for both preCOVID-19 (“Prior to the COVID-19 outbreak...”) and during-COVID-19 time periods (“Currently...”). The budget allocations preCOVID and during-COVID were compared for shopping in various channels (in-person, online from local store with delivery, online from local store curbside pickup, online direct delivery from internet grocers, meal kit services). PreCOVID-19, these respondents reported spending an average of US $133 (SD = $97) on their weekly grocery shopping. Over 75% of the average budget was dedicated to in-person shopping at local stores \((M = 84.0\%, \ SD = 25.8\%)\), with 60% of respondents reporting they exclusively shopped this way. During COVID-19, the average weekly grocery budget was US$133 (SD = $84) and the portion of the budget spent in-person dropped significantly \([M = 60.8\%, \ SD = 39.8\%; \ t(92) = 6.20, \ p < .01]\). Furthermore, only 37% of respondents reported shopping in-person exclusively. Respondents were also asked about their perceptions of both risk and the amount of control available in each shopping mode: findings indicate that in-person shopping offers more control (82%) and greater risk (77%) than does online shopping.

To assess expectations for future grocery shopping as COVID-19 begins to dissipate, respondents were asked “How long do you anticipate a disruption in your typical way of shopping for groceries (the way that you shopped prior to the COVID-19 outbreak)?” Only six respondents reported not changing their habits. At the other end of the spectrum, nine respondents stated that they do not anticipate returning to their previous modes of grocery shopping at all. The remaining respondents anticipated returning to their familiar shopping behaviors in one to three months (27%), four to six months (34%), or in more than six months (24%). Respondents were also asked about their attitudes toward shopping: “Going forward, after the COVID-19 outbreak is over, assuming that the monetary cost was the same, would you prefer to select your groceries in-person at a local store OR order them online?” to which 74% reported they would prefer in-person shopping. This represents a significant increase from the 61% of respondents reporting a preference for shopping in-person before COVID-19 \((\chi^2 = 38.337, \ p < .01)\).

Comparing the during-COVID-19 and preCOVID-19 results, consumers adjusted their values and changed shopping preferences, consistent with the observations of Haley (2020). One comparison showed a major change between actual shopping channel choice and preferred shopping mode. Specifically,
before COVID-19, respondents reported making 24% of their grocery purchases online, but 39% stated that if prices were the same online as offline, they would prefer online shopping. By contrast, during COVID-19, 39% of respondents’ current budgets were spent online, yet only 26% of the respondents said this would be their preferred shopping method after COVID-19 ended. This indicates that many respondents view their current shopping mode as suboptimal.

Finally, participants were asked to assess their need for control, using the same item as prior to the pandemic. However, during COVID-19, ANOVA results \[ F(1, 91) = 1.81, p = .18 \] show no significant difference in NFC between those who prefer in-person shopping and those who prefer online shopping \[ M_{\text{InPerson}} = 5.10, SD = 1.82; M_{\text{Online}} = 4.54, SD = 1.56 \]. This suggests that NFC is not a salient criterion for grocery shopping mode choice during the pandemic.

Although the during-COVID quantitative survey responses indicate increased preference for shopping in-person, and no impact of need for control on choice of shopping mode, they do not reveal the reasons for these changes. It may be that respondents missed getting out and shopping more than they anticipated, or that online shopping became increasingly mundane and/or risky, or perhaps respondents had negative experiences with online grocery shopping during the pandemic. To better understand the issues, a series of qualitative, open-ended questions were asked next.

**QUALITATIVE STUDY DATA AND ANALYSIS**

A phenomenological qualitative research approach was used to better understand how the pandemic affected grocery shopping attitudes and behaviors. Respondents in the during-COVID-19 study were invited to continue, answering open-ended questions to enhance understanding of their attitudes and shopping experiences in their own words. This approach is appropriate because the research purpose was to better understand the findings observed in the quantitative survey by developing “descriptions of the essences of these experiences” (Creswell, 2013, p. 77).

Open coding was performed on the qualitative data, as recommended by experts in qualitative research methods (Corbin & Strauss, 2008; Creswell, 2013; DeVaney et al., 2018), resulting in categories of responses. Positive attributes respondents reported about in-person shopping (“What do you like about shopping for groceries IN PERSON?”) included: (1) making their own selections from among available items, (2) comparing prices/promotional deals and making substitutions as needed, and (3) obtaining items at the desired time through an acceptable process.

Verbatim examples of these positive attributes include:

- “I can pick out exactly what I like. I can also pick an appropriate substitute if what I want is out of stock.”
- “(I like) seeing and being able to buy what looks or smells good.”
- “I like being able to pick the items I want by holding them and seeing them; having the chance to see new items that I wouldn’t have thought to look for.”
- “I get to choose exactly what I want and add extra things into my cart if I find good deals.”
• “I often remember that I need things that I didn’t put on the list.”
• “I like interacting with the people and I like seeing things that I may or may not normally buy.”

Negative attributes of in-person shopping (“What do you dislike about shopping for groceries IN PERSON?”) included: (1) presence of other shoppers, (2) frequent stockouts, lack of available substitutes or deals, (3) fears of COVID-19, and (4) process-related issues such as having to go out, spend time shopping, and stand in long checkout lines. The above categories for shopping in-person were the same regardless of whether the respondent preferred to shop in-person or online; however, respondents tended to provide more information if they preferred to shop in-person.

Verbatim examples of these negative attributes include:

• “I don’t like how crowded stores are or how inconsiderate some shoppers can be (blocking aisle with cart; standing around talking to others).”
• “I don’t like the crowds, the frustration with finding certain items. I hate waiting in line and dealing with traffic.”
• “They don’t always have everything you need or at the ripeness you need.”
• “Nowadays, it’s especially dangerous to shop in person because people may not adhere to social distancing guidelines or not wear gloves or masks.”
• “Right now, it’s a production. Mask, gloves, wipes... it’s an additional layer of dress. And everything has to be considered upon returning to the house.”
• “I don’t like waiting in line at the checkout.”

Categories of positive attributes of shopping online (“What do you like about shopping for groceries ONLINE?”) that resulted from open coding included: (1) easy, quick, convenient to order, (2) no need to leave the house, (3) amount spent can be easily tracked and impulse buying avoided, and (4) it naturally provides social distance and reduced risk of COVID-19.

Verbatim examples of these positive attributes include:

• “I can sit in the comfort of my own home, think about the meals I want to prepare, take my time shopping.”
• “I can browse the store at my leisure, choose what I want, and have it delivered directly to my door.”
• “It’s convenient and I don’t have to leave the house.”
• “(It’s) easy, can add up as I shop, less chance of impulse buying.”
• “I save money by not impulse buying.”
• “It protects my family from corona virus.”
• “It is easier than putting a mask on and going in(to the store).”

Although respondents preferring online and in-person shopping mentioned the same categories of positive attributes, respondents preferring to shop online reported more emotional content. Online shoppers used such terms as “fear,” “embarrassment,” “pressure,” and “avoiding people,” which appeared only rarely for in-person shoppers. However, the online group did not frequently mention “social distancing” or “not having to leave the house,” perhaps believing that these features of online shopping are obvious.
Negative attributes reported of online shopping ("What do you dislike about shopping for groceries ONLINE?") included: (1) inability to see/touch items before buying, (2) stockouts, difficulty of selecting/substituting optional items, (3) scheduling/delivery problems, and (4) issues related to shoppers spreading COVID-19. Verbatim examples of these negative attributes include:

- "I have to rely upon others to pick good fruit/vegetables."
- "I can’t touch the items, which helps with certain types of meats that tend to be fatty sometimes."
- "You never know if they’re going to be out of something, substitute something badly, or pick out almost-expired produce or meat."
- "Sometimes things are out of stock and the substitutions are not things that will work for me."
- "I don’t like people touching my groceries."
- "During the pandemic, I have freshness/quality concerns, but I’m not comfortable with a shopper picking up items with their hands and potentially spreading the virus."
- "I do not like to wait for products to ship."
- "Due to the COVID-19 restrictions it is harder to get a grocery cart/time for pickup."

Following the questions regarding positive and negative attributes of in-person and online shopping, respondents who reported shopping in-person during COVID-19 were asked how this experience had changed ("If you have shopped for groceries IN PERSON during the COVID-19 outbreak, what changes did you notice in the store itself?"). Open coding was performed, identifying three categories of items: (1) stockouts and purchase limitations, (2) changes in the store physical environment to enhance safety, and (3) increased prices. Verbatim examples of these categories of changes include:

- "There are a lot of shelves out of stock, both in food items and nonfood items."
- "There are still some empty shelves at my local stores. It is still hard to find toilet paper, Clorox wipes, ground beef, and many more things."
- "(There are) restrictions on how much you could buy of the same product."
- "Meats are currently limited to one kind per person per day."
- "The bulk bins were empty and they aren’t going to restock them until the restrictions loosen."
- "Many stores limit the number of customers in the store at any one time. This means lining up outside to wait to be allowed in. Inside the store, there are arrows on the floor to help direct traffic. There are signs that masks are required before anyone is allowed to enter."
- "Checkout is different because there are markers to show where people should stand to ensure everyone is spread out at least six feet. At the checkout register, they installed plastic guards."
- "We can no longer use our reusable bags."
- "Reusable bags are suddenly frowned upon, although I’ve not been told no. Hours have changed to allow for cleaning and vulnerable-patrons-hours."
- "I see signs at the entrance of the store to maintain social distancing. There are lines on the floor at the checkout to indicate how far to stand from other
people. There are signs on the floor of each aisle indicating whether or not it’s an entrance or exit, as the store is trying to create one-way traffic and minimize customer’s interactions with each other.”

- “I noticed higher prices on some items.”
- “Prices have shot up on meats.”

Respondents who said that the in-person shopping experience had changed were asked how long they thought the new characteristics might last (“Which, if any, of these changes do you expect to continue permanently in the store?”); unfortunately, not all respondents made projections. Among 43 respondents making stockout-related comments, only six mentioned that they expected stockouts and purchase limitations to end after COVID-19 (none of them expressed the belief that this would be permanent). There was more disagreement among respondents about the continuation of safety measures: out of 75 making safety-related comments, 19 offered the view that the changes would not continue beyond the pandemic, whereas 15 believed the changes to be permanent. Other changes in shopping behavior reported during the pandemic included (1) accepting nonpreferred brands or products and (2) increases in amounts purchased. Verbatim examples of these comments include:

- “I have purchased different brands due to my normal brands being out-of-stock more often.”
- “I purchased brands (that were) available, not what we normally would have for about 2/3 of the groceries we’ve bought.”
- “Since some items are out of stock, we had to try new products.”
- “I’ve had to buy larger prepackaged bags of stuff like rice and beans.”
- “(I am) buying more chicken, as pork and beef have been either unavailable or high priced.”
- “(There is a) serious lack of quality toilet paper. I basically have to buy a crappy 9 pack (small rolls) every time I go.”
- “There were brief issues on limits of water which were lifted - typically I’m used to buying five 24 or 32 packs and could only get two. Living in the desert, we need a little more water than most.”
- “I’ve purchased more groceries than I need in order to try and minimize my trips to the grocery store, as well as buy some extra products in case they’re sold out next time.”
- “I have started to stock up on more pantry items to keep on hand.”
- “I purchased a little extra food than I need every time that I do go grocery shopping because I don’t know if there’s going to be any shortages in the future.”
- “We have purchased more than we needed at times especially with meat, toilet paper, soap, things like that.”
- “I stocked up on cat food, cereal, cleaning supplies, toilet paper.”
- “I’ve purchased more meat than normal to have on hand in the freezer.”
- “I bought some more of nonperishable things like canned food, frozen food, pasta, rice, and beans.”
- “I definitely purchase more than I used to. I’m afraid that when something is in stock, I’d better get it because I might not be able to get it later. Lack of food causes me high anxiety.”
‘I am cooking more frequently and ‘better’ (i.e., healthier, more involved) meals so I am purchasing more overall at the grocery store.’

In regard to plans for a return to an originally preferred shopping method after COVID-19, most respondents said they do plan to return to familiar modes, with some adjustments. Based on the quantitative analysis, a significant percentage of shoppers changed their channel preference from online to in-person after the pandemic began. A follow-up question (“How will you decide when to change your current grocery shopping habits?) asked how the respondent would know it was time to return to the “new normal.” Some respondents stated they had already returned to previous shopping modes; others provided specific indicators they would use. These included some that described the progression of COVID-19, such as: “when there are no new cases in the area,” “when people stop dying,” “when COVID rates drop very low,” “when the virus is over,” “when there is a vaccine available,” and “after we have achieved herd immunity.” Others provided indirect or more affective cues, including: “when I feel it is safe,” “as soon as it’s allowed,” “when the governor says it’s safe,” and “when hospitals say it is safe to go and visit patients again.” In summary, many respondents wanted to eventually return to their previous shopping modes, but some planned to make longer-term changes due to their experiences.

Open-ended items obtained respondents’ interpretations of control and risk in each shopping mode (“What type(s) of additional control does this method of shopping offer?”). Open coding suggests that individuals who perceive greater control when shopping in-person believe they can (1) choose what they want to buy, (2) see/touch items before buying, and (3) make comparisons/substitutions and take advantage of deals. All three of these categories of attributes relate to outcomes of in-person shopping. On the other hand, individuals who perceive greater control when shopping online believe they benefit from a more effective process. For instance, respondents report they are better able to track the cost of purchases while shopping, make price comparisons, and search on desired product features. Open coding of the responses regarding risk (“What type(s) of risks are reduced with this method of shopping?”) suggests that individuals perceiving less risk when shopping in-person believe they can avoid product contact by a delivery driver and reduce risk of missing desired items. On the other hand, individuals perceiving less risk when shopping online are more focused, typically mentioning avoiding contact with other people and also COVID-19.

Axial coding (Corbin & Strauss, 2008) was performed next. In this stage of analysis, data from open coding was examined, including changes in shopping behavior due to COVID-19, expectations regarding the pandemic’s duration, when restrictions will be lifted, and what will be the “new normal.” Connections were drawn between related codes to create axes that highlight the connections between the categories identified in open coding. Axial coding suggested several relationships.

1 More respondents preferred to shop in person following the onset of COVID-19. This may be due to trial usage of online shopping in which the processes and/or outcomes did not meet expectations. Will these new choice criteria continue to drive shopping venue preference after COVID-19 abates?
2 Although market segments continue to be defined by shopping channel preference, customer values appear to have been influenced by experiences during COVID-19, including difficulties arranging online orders and/or shortages and substitutions. Are customers more influenced by shopping experiences or fear of COVID-19?

3 Changes in respondent behavior during COVID-19 (e.g., increased cooking at home, buying of prepared meals, etc.) necessitate different purchases and might place greater value on shopping outcomes. Do lifestyle changes impact shopping channel choices, and will this continue after COVID-19?

4 Some respondents are not buying groceries in the channel they reportedly prefer. This may be related to new concerns (e.g., safety from COVID-19) overriding the importance of NFC and/or other higher-order needs. Why do consumers shop in a suboptimal channel; does this behavior relate more to process or outcome? How are the present choice (actual) and future choice (preferred) related to shopping expectations?

During COVID-19, the importance of higher-order needs has apparently been superseded by increased importance of lower-order needs, including safety from disease and getting usable groceries. In addition, overall preference for shopping in-person has increased. Qualitative findings help shine light on these changes.

The final step in the qualitative analysis was selective coding. In selective coding, relationships observed during axial coding create an integrated set of propositions (Corbin & Strauss, 2008). These propositions are an outcome that serves as the final representation of the shoppers’ comments, at a higher level of abstraction than the results of open and axial coding.

P1. Preference for shopping in person has increased during COVID-19 but has not been enacted; actual shopping in person will increase following COVID-19. This may be due to fears subsiding or to improvements in the experience, in addition to societal changes.

P2. Market segments continue to be defined by shopping channel preference, which may be influenced by experiences during COVID-19, such as process difficulties (in-person or online), shortages/substitutions, and/or fear of disease.

P3. Lifestyle changes occurring during COVID-19 will continue afterward, leading to increased in-person grocery shopping.

P4. During COVID-19, some consumers do not actually shop in the channel they reportedly prefer. Afterward, customers will return to a “new normal” and discontinue shopping in a suboptimal channel.

DISCUSSION

In the preCOVID-19 survey, respondents who preferred to shop online exhibited greater NFC than did in-person shoppers, which suggests a desire to closely manage the shopping experience and to take advantage of convenience, ease of
use, and efficiency. These shoppers are apparently quite concerned about the process of grocery shopping. This was perhaps the most interesting finding of the preCOVID-19 survey: online shoppers cared more about control of the shopping process than did offline shoppers. Those who preferred to shop in-person apparently valued other aspects, possibly related to shopping outcomes.

In the during-COVID-19 survey, a significantly increased percentage of respondents expressed a preference for shopping in-person. This is consistent with the observation of Withers (2020), who stated that pent-up demand leads to more in-person shopping, the work of Haley (2020), who suggested that membership in market segments shifts during a crisis, and that of Olbert (2021), who observed that the pandemic has caused a rapid evolution in consumer needs and values. In addition, shopper satisfaction with online ordering for pickup and delivery fell 30% during the early months of the pandemic (Kleckler, 2020), providing support to the present finding of a shift in preference toward in-person grocery shopping.

In addition to shifting where respondents desire to shop, COVID-19 appears to have led to changes in decisions related to higher-order needs. In the during-COVID survey, NFC no longer differentiated between shoppers that prefer online versus in-person venues. This may be due to the blurring of the market segments owing to a significant percentage of shoppers changing their preference from online to in-person during the pandemic. Another potential explanation might be a shift in what it means to have control. Apparently, shoppers began to place greater value on other elements of the shopping experience and, instead of deciding where to shop based on higher-order needs, they base their channel choices on lower-order needs (e.g., food and safety), as suggested by the present qualitative research performed during COVID-19 and by industry reports (Pastore, 2020).

There are some interesting avenues available for further research, including verifying the reasons behind increased preference for shopping in-person during COVID-19, whether they were direct outcomes (e.g., trial usage of online shopping falling below expectations) or indirect results (e.g., desire for a past, more fondly recalled time). Industry reports indicate that shoppers think stores selling different types of merchandise can pose different levels of risk (Pastore, 2020). Future research could investigate nongrocery retailers to determine whether they experienced similar shifts in consumer preferences as those uncovered in this study with grocery shoppers.

It would be of interest to find out how groceries purchased during COVID-19 were being used: perhaps purchases changed due to lifestyle modifications, such as increased cooking at home or increased buying of prepared meals. Another potential investigation would examine the reasons that some customers do not shop in their preferred channels. It appears that, prior to COVID-19, this could have been entirely due to higher prices in online channels; however, during COVID-19, more respondents shopped online, including those who preferred in-person shopping. Further investigation of the dependence of shopping channel choice on higher-order needs before and lower-order needs during COVID-19 would shed light on this decision and on how retailers could better address shopper needs.
CONCLUSION

During COVID-19, consumers apparently neglected higher-order needs in favor of meeting lower-order needs, specifically food and safety. This is consistent with decisions to shop online, despite (in many cases) preferring to shop in-person and also believing that shopping online is more expensive. After things return to a new normal, some respondent preferences will have changed permanently: perhaps most interesting is that a greater percentage is expected to prefer in-person shopping.

Practically, this research provides information to help retailers stay attuned to the needs that consumers expect to satisfy in a grocery shopping trip. During COVID-19, consumers are most concerned about food and safety. Therefore, it is important to provide a clean in-store environment, fresh food, and employees that conform to pandemic safety guidelines. Stores should not become too crowded to allow appropriate distancing, and consistent with the findings of Chang et al. (2021), other marketing tactics should support efforts to meet consumer expectations. Prices may need to be higher to cover increased costs of goods and supplies. Promotional activities should be consistent with food and safety needs: for instance, advertising should not show employees or customers failing to wear masks. Additionally, promotions that make recommendations on how to prepare meals might be helpful to consumers that do not have much experience cooking.

Although before COVID-19 began, more consumers shopped in-person than preferred this mode, during COVID-19, more consumers shop online than prefer to. Open-ended responses suggest it might help if online retailers could improve both product availability and delivery accuracy and timeliness. Reducing the consumer effort required to locate desired brands and products could also help: for instance, consumers might either sign up for notifications or preorder hard-to-find items so they can be contacted when items become available for pickup.

After the COVID crisis has passed, grocers must consider how to best address lasting changes made by consumers in their grocery shopping and food preparation routines. Grocers will also need to update procedures to better handle any shortcomings observed during the crisis. For instance, to assist consumers shopping in-person, kiosks could be installed on store shelves to offer a wider array of goods that could be conveniently ordered for pickup in the store on the next shopping excursion. Because many shoppers began to cook more often during the pandemic, grocers could encourage this trend by offering either in-person or online cooking demonstrations or by expanding “meal kit” offerings. Finally, to overcome dissatisfaction of online grocery shoppers with ordering systems, a system that more closely mimics the experience of shopping in-person could be offered. Specifically, a new interface could show an entire category as it would appear on a store shelf, instead of arranging items to appear on screen one after another or in a grid. Shoppers could then select an item to drill down for more information and ordering.

The present research answers calls from academics to further explore grocery shopping behavior in the digital era, especially factors influencing shoppers to order online and collect in-store (Davies et al., 2019; Milioti et al., 2021). Perhaps the primary contribution to theory offered by this research is the finding that higher-order needs (in this case, NFC) can drive grocery shopping channel choice, assuming that lower-order needs are met. However, when the ability to
meet lower-order needs is in question, consumer attention moves to fulfilling critical lower-order needs, including food and safety. This research provides evidence that drivers of consumer choice can change in the face of a crisis.

The relationship between preference and choice observed in this research is of academic interest. Specifically, prior to the pandemic, many consumers who preferred to shop online instead shopped in-person, apparently because online shopping is perceived to be more expensive. However, during the pandemic, many consumers shopped online despite expressing a preference for in-person shopping, apparently owing to safety concerns. This contradictory behavior is worthy of further research.

Finally, qualitative research suggests that recent lifestyle changes will continue beyond COVID-19. This includes greater interest in trying unfamiliar foods and new recipes, doing more cooking at home in general, and increasingly using foods that are perceived to be healthier. All of these are consistent with greater preference for and incidence of grocery shopping in-person and should be considered by retailers in selecting products to offer as well as in designing promotions.

The present research has limitations. First, the focus is narrow in that grocery shopping is considered exclusively. Future studies could focus in other retailing categories and allow for a greater variety of possible independent variables, such as those related to consumer involvement or cross-cultural influences.

A second limitation of the present research is that it was conducted entirely within the United States, which may mean that findings during COVID-19 are more extreme due to both the lengthy duration and heavy caseload as compared to other countries. This would make any effects easy to observe, whereas in countries that invested in prevention and reduced duration, cases, and deaths, the differences may not be as dramatic. Furthermore, market conditions could be very different in other countries. For instance, although grocery prices are perceived to be higher when shopping online in the United States and in Germany (Fedoseeva et al., 2017), online shopping modes are considered less expensive in China.

In conclusion, several important changes in grocery shopping behavior are identified in the present study. First, under normal conditions, it appears that online shoppers primarily value an easy and efficient service process whereas those who shop in person primarily value the shopping outcome; such divergent goals may drive differences in preferred shopping channel attributes. Second, shoppers under crisis conditions apparently refocus on lower-order needs, including those for food and safety. Consumers might temporarily abandon or neglect higher-order goals, and may even change their preferences in the longer term as circumstances stabilize.

**AUTHOR CONTRIBUTIONS**

Both authors contributed equally to all stages of research for this article, including planning the study, conducting data collection and analysis, interpreting the results, and writing/revising the article.
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