



## The impact of the COVID-19 crisis on consumer purchasing motivation and behavior

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### ABSTRACT

The COVID-19 outbreak changed dramatically and altered the attitudes, intentions and purchasing patterns of consumers. This global crisis was particularly notable because of globalization—the interconnection of markets and countries—and its unprecedented coverage by traditional and digital media.

This research queried the impact of the COVID-19 crisis on consumers' motivation and behavior. The present paper was based on the results of mixed methods—qualitative and quantitative analyses—conducted in more than 55 countries and collectively engaging 1,015 participants. The studies were performed by the end of March 2020, at which time the pandemic was at its first peak, allowing data to be collected in real time, recording the actual behaviors of consumers and not simply what they could recall after the fact.

As a result of the COVID-19 crisis, many changes took place in consumer behavior related to products, channels, and motivations. These changes proved to be more related to consumers' perceptions of the crisis than to its practical effects. Several managerial and theoretical implications are provided, as well as compelling future research avenues.

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## 1. Introduction

The COVID-19 pandemic that took place worldwide became a severe threat not only to public health but also to most economies (Donthu & Gustafsson, 2020). Aiming to contain this outbreak, governments implemented more or less stringent strategies that range from total confinement measures to partial lockdowns of the economy (Kraemer et al., 2020). In this scenario, a clear concern arisen for both companies and governments: ascertaining how consumer purchasing behavior would affect by the COVID-19 crisis.

Consumer purchasing behavior (CPB) was recognized in existing literature as an extremely complex concept (Solomon, 1996;

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Hansen et al., 2004) that results from the interaction between the consumer and the environment (Hollbrook & Hirschman, 1982). Accordingly, purchasing behavior was driven by a broad set of factors or motivations. These motivations have historically been of the interest of academia since the 70s from many perspectives (Tauber, 1972; O'Guinn & Faber, 1989; Hausmann 2000; Close & Kukar-Kinney, 2010). In parallel, scholars like Blackwell et al. (2001) worked on identifying several of the factors, such as demographic, available resources, personality, family, culture, social class, attitude, and information processing factors. More recent studies classified motivations in hedonic, social and utilitarian (Voss et al., 2003; Kukar-Kinney et al., 2016) and several scholars worked afterwards on hedonic and utilitarian motivations related to restaurant's industry (Hlee et al., 2019), purchases (Abbasi et al., 2020) or shopping value (Picot-Coupey et al., 2021).

Alongside these studies, the literature also offered interesting research concerning CPB changes related to the occurrence of several different types of crises: financial crises (Voinea & Filip, 2011; Mansoor & Jalal, 2011; Brown et al. 2013), food-safety crises (Pennings et al., 2002; Wansink, 2004), country-of-origin crises

(Gineikiene & Diamantopoulos, 2017; Antonetti et al., 2019), and reputational crises (Van Herde et al., 2007; Zhao et al., 2011; Jeon & Baeck, 2016). Each study agreed that when a crisis occurs, regardless of its type, consumers modify their practices and attitudes. Some of these modifications persisted over time, and others simply disappeared.

Moreover, during the COVID-19 crisis, monitoring and coverage by the media was incessant, increasing the level of perceived risk and finally causing consumers to immediately change their behaviors (Jones, 2020). The additional spread of certain fake news through the Internet and social media did little to calm down people's anxiety, provided they were concerned about factors affecting their own health (Moorman & Matulich, 1993; Donthu & Gustafsson, 2020), like the COVID-19 did. Nevertheless, despite the interest on how unexpected events influence consumer's behavior (Sheth et al., 1991), none of these perspectives were presented in the course of a crisis with the characteristics of the COVID-19 crisis.

Hence, the unparallel characteristics of the COVID-19 crisis, in terms of impact, media coverage and public interest, opened a research venue that was yet unexplored. In this vein, the overarching goal of this research was to understand how consumer purchasing behavior and motivation changed in response to the COVID-19 crisis and how this change was influenced by exposure to COVID-19 related news and information. After a thorough literature review of both academic and practitioner sources, this paper was comprised of both qualitative and quantitative analyses that addressed this aim. The paper concluded with a final section dedicated to overall discussion and conclusions, including theoretical and managerial implications.

The main contribution is the use of several scales related to purchasing motivations (Lennox and Wolfe, 1984; Voss et al., 2003; Kukar-Kinney et al., 2016) in a global health-emergency setting like the COVID-19 pandemic, and overall, the innovative discovery of a new purchasing motivation coined as exigency motivation that appeared in such setting. This opens a new and interesting research venue in the field of consumer behavior.

## 2. Theoretical background

### 2.1. Consumers' motivations towards purchasing categories

CPB is driven by a broad set of factors or motivations (Hausmann 2000; Close & Kukar-Kinney, 2010). Studies like the one developed by Blackwell et al. (2001) was aimed at identifying such motivation factors and identified the following categories: demographic, available resources, personality, family, culture, social class, attitude, and information processing factors. Other scholars have lately provided a more accurate taxonomy that classifies these factors according to the following categories: hedonic motivation, social motivation, and utilitarian motivation (Voss et al., 2003; Kukar-Kinney et al., 2016).

This framework, which shapes consumer motivations toward product categories has been widely used in the field of CPB. For instance, several scholars recently worked on hedonic and utilitarian motivations (Hlee et al., 2019; Abbasi et al., 2020; Picot-Coupey et al., 2021). Likewise, a recent study by Rajan (2020) examined the impact of hedonic and utilitarian motivation factors on online shopping behavior, with the aim of disentangling which factors predict both impulse-driven and rational-driven purchases.

### 2.2. Consumer purchasing behavior and crises

From the original work of Fishbein and Ajzen (1975), and the subsequent reviews (Ajzen, 1991; Ajzen, 2015), we understood behaviors such as a person's observable action to carry out an intention—assuming the action is performed in an environment where prior conditions are constant and the individual is considered rational.

According to Schiffman et al. (2010), CPB comprised the actions of seeking, purchasing, using, assessing, and disposing of products and services. These actions were undertaken by consumers to satisfy their needs. Therefore, consumer behavior was a complex pattern of buying that entails three dominant external influences: cultural, sociological, and economic aspects of the consumer environment (Schiffman, 1993).

Despite the contextual changes and emotional impact arising in a crisis, research on CPB confirmed that individuals behave in a more rational way during crises (Theodoridou et al., 2019). As the authors proved, consumers tended to concentrate their purchases on basic goods, rather than luxury ones. Likewise, consumers tended to adjust their considerations of luxury products, switching to more economical products, and favoring products oriented towards covering their basic needs (Ang et al., 2000). Furthermore, when a crisis occurs, consumers did not want to spend money on high-quality or high-value products even when they could afford such items (Ferrell & Hartline, 2002).

However, consumers' attention was not limited to the current context; consumers also showed a particular concern about the near future (Ang et al., 2000). Crises tended to modify patterns of CPB in the long term as well, and these modifications could in time become into consumers' new habits or result in new preferences for brands or products (Arens & Hamilton, 2018). A study conducted by Flatters and Willmott (2009) identified five new habits or trends after the 2008 financial crisis: (1) a demand for simplicity, (2) discretionary thrift, (3) mercurial consumption, (4) green consumerism, and (5) ethical consumerism. Consequently, consumers were affected not only economically but also psychologically (Köksal & Özgül, 2007), and this impact was quite notable in terms of both short- and long-term consumption behaviors.

To shed light on the study of CPBs related to the COVID-19 crisis, we proposed the following research questions (RQ):

RQ1: How did consumer purchasing behavior change during the COVID-19 crisis?

RQ2: To what extent was the change in purchasing behavior driven by differences in consumer motivations during the COVID-19 crisis?

### 2.3. The impact of crisis-related information on CPB

In line with Amado et al. (2018), social networks are playing a significant role on influencing CPB. Moreover, according to Nistorescu and Puiu (2009), CPB tends to change during difficult, stressful moments of a crisis because of a change in the perceived levels of risk, provided that crises were directly linked to risk. This risk was not necessarily tangible or even real; it was rather the perception of risk that caused people to be afraid in crises (Altheide, 2002).

Most of this perception come from the information the consumers received about crises. Perceived risk may be affected by the media consumed (Wahlberg & Sjöberg, 2000) insofar as the information sources maintained a focus on the effects of the crisis. The more that individuals processed information about an uncertain future, harder conditions, growing unemployment, decreasing wages, or an upsurge of infected people or deaths, the greater the psychological effect that the crisis may exert on consumers (Amalia & Ionut, 2009). Correspondingly, Garmaise et al. (2020) proved that salient macro-economic bad news incited reductions of discretionary spending, even though the information was false. However, this effect can be nuanced by individual recognition of the information source, which was biased by political beliefs, as Barrios and Hochberg (2020) proved in the context of the COVID-19 crisis. These authors revealed that risk perceptions and subsequent attitudes in response to official statements were moderated by the individual's agreeableness towards the government.

Additionally, social media platforms were currently becoming increasingly popular platforms of information seeking and emerged as a critical element in the dissemination of and search for information (Alarcón et al., 2018). Indeed, Gottfried and Shearer (2016) found that 62% of U.S. adults got news from social media, despite that social media could facilitate the vast and fast spread of fake news (i.e., news with intentionally false information). In fact, the broad spread of fake news might exert a negative impact on individuals and society (Shu et al., 2017) and thus may be involved in the perception of risk and its psychological impact.

We deemed necessary a deeper study of the connection between crisis perception and the consumer motivation–purchasing behavior relationship, as mediated through exposure to media and social networks, and we put forth our next research question:

RQ3: To what extent did the overall perception of the COVID-19 crisis moderate the relationships between consumers' motivations and purchasing behavior?

#### 2.4. Consumer purchasing behavior and government measures

The COVID-19 pandemic impacted the world in many ways—chiefly in health-related aspects, but also in social and financial ones (Coibion et al., 2020; Spinelli & Pellino, 2020). Governments taken several steps to mitigate the spread of the virus, trying to reduce the number of infected people by way of measures such as the limitation of movement or even the complete lockdown of regions or countries (Spinelli & Pellino, 2020). In parallel, governments were also forced to launch initiatives to protect the economies of their countries (Anderson et al., 2020).

However, despite the quantity of measures that governments undertaken, they were insufficient in the eyes of some authors (e.g., Mitjà et al., 2020), and some countries were overwhelmed by the evolution of the crisis (Chinazzi et al., 2020). These circumstances, particularly the lockdown, affected household spending and macroeconomic expectations at a local level (Coibion et al., 2020).

Hale et al. (2020) worked on developing a measure of governments' responses to the COVID-19 crisis. According to these authors, the most common government steps were related to three different areas: (1) containment and closure, (2) economic responses, and (3) health systems. Curiously, no international research was found that delved into the relationships between these measures and the motivation and behavior of consumers. Hence, we introduced our final research question:

RQ4: To what extent did governments' responses to COVID-19 affect the relationship between consumer purchasing motivation and behavior?

### 3. Method

In order to adequately address each research question, we followed a mixed methodology that combines qualitative and quantitative analyses. Despite their inherent difficulties, mixed-method studies demonstrated gains in robustness and relevance in comparison to single-method studies (Davis et al., 2011).

#### 3.1. Qualitative analysis

The goal of our qualitative and first study was to confirm the validity of our research questions, particularly questions 1, 2 and 3. Therefore, we started with a discovery-oriented qualitative study (Jaworski and Kohli, 2017) in which we asked a series of participants (1) whether or not they had changed their general purchasing

behavior due to the COVID-19 crisis, (2) which product categories they had increased or decreased their overall purchases, (3) what motivations had led them to behave in this way, and (4) what perception of and exposure to information about the COVID-19 crisis they had. At this stage of our study, we were mostly interested in understanding and interpreting the experiences and perceptions of our respondents (Belk, 2017).

We prepared a questionnaire with eight open-ended questions. Then, we asked three academics to go through the questionnaire and assess whether the questions were simple and intelligible. They suggested reducing the number of questions to seven as it was important to maintain a focus on relevant information and, if necessary, more deeply explore the answers once key topics had been explored (Kumar et al., 2019). See Appendix A for the English-language list of the final questions.

We prepared a self-explanatory interview protocol to accompany the questions that included an introduction to the research topic and the key points of our inquiry (Arsel, 2017). We electronically shared the protocol and the questionnaire with 80 of our direct contacts, 55 of whom were located in Spain and 25 of whom were located in seven other countries. We engaged in theoretical sampling (Corbin & Strauss, 1990) to select the potential participants as we intended to receive contributions from countries experiencing different degrees of impact from the COVID-19 crisis (WHO, 2020). Participants had 2 days to complete the questionnaire. In total, 76 participants answered the seven questions (see Appendix B for a complete profile of the participants).

Finally, to complete and fully understand some of the answers, we contacted via telephone or Internet calls those participants whose questionnaires were poorly detailed or insufficiently clear and requested further clarification. After this verification process, we ended with a total of 74 valid questionnaires.

We opted to employ this two-round method instead of the standard face-to-face interviews for several reasons. The first was the social-interaction restrictions that had already been imposed in the countries where part of the research team was based. The second is that despite the possibility of organizing an online video call, we preferred to provide the participants with time to reflect on their answers (Kvale, 1983) as this was a situation they had never faced before. Third, the two-stage process would grant us the opportunity to review the initial written answers before making clarification calls. Therefore, during the clarifying calls, the questions were reoriented towards some new and interesting directions presented by the participants, as suggested by Arsel (2017).

Interviews were exported to a qualitative data-analysis program, NVivo 12.

We initially agreed on classifying participants in two groups, low-impact and high-impact, according to the level of impact of the disease in participants' respective countries of residence, with assessments to be made based on the number of cases per million inhabitants (WHO, 2020). The low-impact group was comprised of 16 participants belonging to four of the eight represented countries that had less than 100 cases: Chile, Peru, United Kingdom, and United States. Whereas the high-impact group included 58 participants from the other four countries, which had more than 200 cases per million people: Andorra, France, Germany, and Spain (the Appendix B with the list of participants also shows their country of residence and how these were classified). The purpose of this classification was to identify and study the differences (if any) in responses between the two groups. Particularly, we looked for differences in terms of purchasing behavior and motivation, and the personal perception of the crisis.

A thorough interpretive research procedure was followed and applied individually by two members of the research team. This procedure included categorization, abstraction, and iteration (Spiggle, 1994); open, axial, and selective coding processes were thus applied to the data, as recommended by Corbin and Strauss (1990).

This resulted in a total of approximately 15,000 words categorized in 98 codes (hierarchized in up to four levels) after the coding process. To conclude the data analysis, the two authors discussed their individual interpretations and outcomes and agreed upon the aggregated results presented in the corresponding section.

3.2. Quantitative analysis

As noted by Hulland et al. (2018), surveys continue to be a relevant method of acquiring new knowledge and insights within the marketing research field. Consequently, this study relies on survey data to examine the links between purchasing motivators and groups of products, focusing on the consumer as its unit of analysis. In this vein, this study models a set of purchasing motivation factors (i.e., hedonic; utilitarian; social-comparison, and exigency factors, elicited by the qualitative study) as antecedents, or drivers, that explain consumers' intentions to purchase distinct products or services that are clustered into four categories: basic-needs products; non-basic-needs products; entertainment, traveling, and leisure; and electronic products.

Based on the literature review and the priorly conducted qualitative study, the reasoning that underlies the conceptual model (see Fig. 1) and hypotheses posited within this study deals with the inference that within the COVID-19 crisis scenario, consumers will be oriented more towards buying basic-needs products than towards

buying those of any other kind. This is in line with prior studies which proved how CPB patterns differ and are altered as a response to distinct types of crises (i.e., Voinea & Filip, 2011; Mansoor & Jalal, 2011; Brown et al., 2013; Pennings et al., 2002; Wansink, 2004; Gineikiene & Diamantopoulos, 2017; Antonetti et al., 2019; Van Herde et al., 2007; Zhao et al., 2011; Jeon & Baeck, 2016). Hence, we hypothesize:

- H1: In the COVID-19 crisis scenario, exigency factors are positively related to the purchasing of basic-needs products and negatively related to other purchasing categories.
- H2: In the COVID-19 crisis scenario, utilitarian factors are positively related to the purchasing of basic-needs products and negatively related to other purchasing categories.
- H3: In the COVID-19 crisis scenario, hedonic factors are negatively related to the purchasing of basic-needs products and positively related to other purchasing categories.
- H4: In the COVID-19 crisis scenario, social-comparison factors are positively related to all purchasing categories.

Subsequently, this study models purchasing motivation as a second-order composite construct shaped by its four dimensions (i.e., hedonic factors; utilitarian factors; social-comparison factors, and exigency factors) and aims to examine the extent to which a consumer's overall COVID-19 crisis awareness moderates the direct relationships between Purchasing Motivation and two distinct categories of

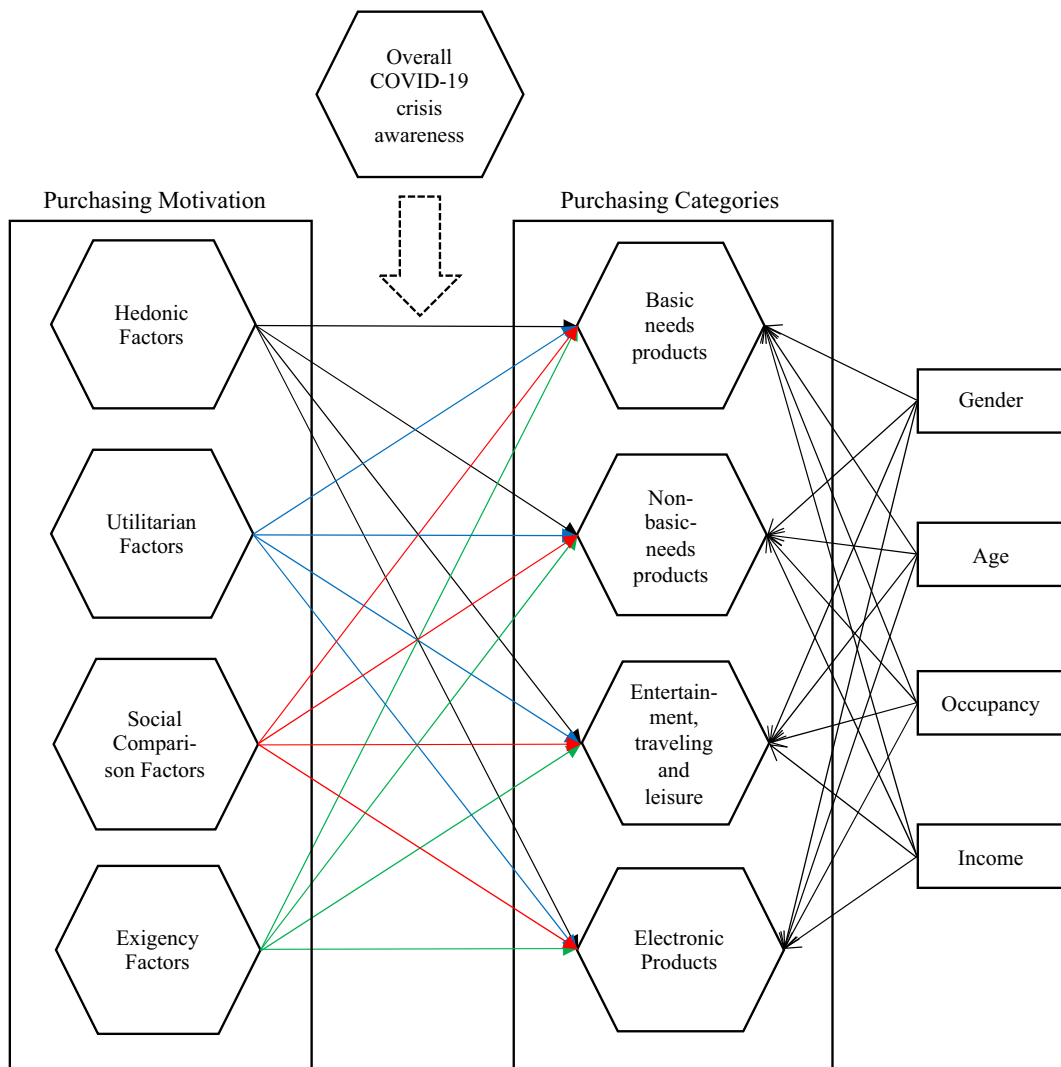


Fig. 1. Conceptual model.

products: –i.e., Basic needs products vs. Other purchasing categories. Hence, we hypothesize:

*H5: The consumer's overall COVID-19 crisis awareness positively moderates (reinforces) consumers' purchasing behavior.*

**Sample and data collection.** As the COVID-19 crisis has become a global issue (Chinazzi et al., 2020), we have decided to assess how this phenomenon has affected customer behavior worldwide. Consequently, individuals belonging to different countries shape the international sample for empirically testing the research model and hypotheses posited in this paper. The data-collection instrument used in this study was an online survey. We distributed the survey through several mailing efforts and shared it on multiple social media platforms (LinkedIn, Twitter, Facebook, WhatsApp, etc.) during the period from March 27<sup>th</sup> to April 3<sup>rd</sup>. As a result, a total of 1,015 questionnaires were received from across 57 countries; these form the final sample under assessment. Additionally, several *a priori* strategies for minimizing nonresponse were undertaken (i.e., university sponsorship, follow-ups, precontact, reasonable questionnaire extensions, a colored layout, and assurance of absolute confidentiality and anonymity). Additionally, a series of t-tests were carried out to contrast early respondents (the first 30 replies) with late ones (the final 30 replies), proving the absence of significant differences regarding the items that compose the primary constructs being assessed. This suggests that nonresponse bias is not a serious concern.

Following Kline (2005), the sample used in this study (n=1015 individuals) would be considered a large sample. Nevertheless, to corroborate the sufficiency of the sample size, we used the G\*power 3.1 tool to compute the G\*power test (Faul et al., 2009). More precisely, we carried out an *a priori* analysis, a procedure through which a required sample size is estimated as a function of pre-determined values for the desired significance level ( $\alpha$ ), statistical power ( $1-\beta$ ), and population effect size (Faul et al., 2009). The G\*power test indicated that the smallest sample size required to obtain a power of 0.95, being alpha 0.05 and 4 predictors, is 74 individuals. Thus, our final sample (n=1015) more than meets the initial sample size requirements (Roldán & Sánchez-Franco, 2012).

**Measures.** This study relies on the use of previously employed and validated measurement scales to measure the purchasing motivation factors. Hedonic and utilitarian factors were measured through two scales proposed by Voss et al. (2003). Social-comparison factors were measured through an adaptation of the self-monitoring scale proposed by Lennox and Wolfe (1984). The rest of the variables included in the models assessed in this study were measured through scales that we developed on the basis of the priorly conducted qualitative analysis. All the items were measured on the basis of 7-point Likert type scales, except for those items measuring control variables. The survey items appear in full within the Appendix C.

**Data analysis.** The conceptual model and hypotheses proposed in this study were tested through the implementation of partial least squares structural equation modeling (PLS-SEM), a variance-based structural equation-modeling approach (Roldán & Sánchez-Franco, 2012). The PLS-SEM technique has gradually gained credence among the academic community of the social sciences, becoming a broadly applied method in fields such as marketing broadly (Hair et al., 2012) and consumer behavior particularly (Green, 2001). The main factor underlying this choice is that the variables shaping our research model are modeled as composite constructs (Benitez-Amado et al., 2017). Plenty of theoretical studies (Henseler et al., 2014; Rigdon, 2012; Rigdon et al., 2017) and empirical simulation contributions (Becker et al., 2013; Sarstedt et al., 2016) endorse and even praise the usage of PLS-SEM techniques for models comprising composite constructs. Thus, in line with prior studies, the PLS-SEM path-modeling estimates are expected to be both consistent (Rigdon, 2016) and unbiased (Sarstedt et al., 2016) under these

circumstances. An additional motive that validates the choice of PLS-SEM is the usage of latent variable scores in a subsequent analysis for modeling second-order superordinate (i.e., multidimensional) constructs through the implementation of the two-stage approach (Chin, 2010; Wright et al., 2012). This study used SmartPLS 3.2.9 software (Ringle et al., 2015).

#### 4. Results

We now present the results of our empirical studies. Firstly, in our qualitative study we worked on analysing the responses of participants regarding the changes in purchasing behavior, motivation and quantities of certain product categories. Then we studied the perception of the crisis as expressed by the respondents of the qualitative questionnaire. Secondly, we moved onto the quantitative study. In this part, we included the assessment of the measurement model, the structural model, and a multigroup analysis.

**Changes in purchasing behaviors.** Responding to the first item on the questionnaire, most participants affirmed a certain degree of change in their purchasing behaviors. The explanations provided by the participants resulted in different categorizations of changes in their behavior.

We coded a first group of changes under the label 'Purchasing Mode'. This group mainly encompassed changes in the type of store purchased from, but also in other habits such as purchase frequency. With regard to the type of store, there were two directions of change. The first was the transition from physical to online stores, as Participant 69 (P69) expressed: "COVID-19 has increased the portion of purchases that I make through the Internet. I used to buy a few things online already, but never clothes and food. Nowadays, I make 100% of my purchases online." The second change was in relation to the size of the store: "I had to visit smaller stores because I couldn't find my products in the supermarket where I usually buy [them]" (P53). Regarding purchase frequency, the participants who expressed having experienced this change reported an overall decrease in the frequency of visits to stores. P65 said that he had stopped making regular purchases, and P30 explained that because she was trying to concentrate all of his purchases in one trip instead of making multiple visits to stores, she was increasing the volume of his purchases and reducing their variety. This leads us to the other two groups of changes.

The second group was labeled 'Quantity of Products'. The change in the quantity of purchased products owed to three causes. The first was the need to overstock certain products. P13 wrote, "I have bought more meat and fish than usual, which I put in the freezer." The second cause was a change of certain habits of consumption. This change was explained by P15: "Our purchasing behavior has changed a lot, overall, in terms of quantity because we are more people eating at home now and we don't go to restaurants." The third cause had to do with two aspects of the reaction to the crisis itself: compulsiveness and fear. Discussing the former, some participants explicitly declared that they compulsively bought greater quantities. In the words of P48, "Yes, there was a certain change because I compulsively acquired many more things and in greater quantity than on normal occasions." In relation to the latter aspect, fear of the disease and of being infected made some participants spread their purchases over time, as expressed by P70: "Due to this crisis, I am buying more quantities of basic goods, to return to the supermarket as little as possible."

The third and final group of changes was termed 'Type of Products'. This group effectively referred to the crisis's impact on the composition of participants' shopping baskets—in particular, increasing "the expenditure on and the amount of basic goods, especially those related to hygiene and food." (P8). According to the participants, two types of products tended to receive more basket space. The first was non-perishable foods, as stated by P18: "I have stocked non-

**Table 1**  
List of purchasing changes experienced by consumers.

| Purchasing changes   | Participants' evidence  |
|----------------------|---|
| Purchasing mode      | Type of store: <ul style="list-style-type: none"> <li>• From physical to online</li> <li>• Size of the store</li> </ul>   |
| Quantity of products | Overstock of certain products<br>Change of consumption habits<br>Reaction to the crisis: <ul style="list-style-type: none"> <li>• Compulsiveness</li> <li>• Fear</li> </ul> |
| Type of products     | Increase of basic goods: <ul style="list-style-type: none"> <li>• Non-perishable goods</li> <li>• Hygiene-related</li> </ul>  |

**Table 2**  
Changes in the shopping basket and motivation.

| Expressed changes | Participants' evidence  |
|-------------------|---|
| Basic goods       | Increase  |
| Nonbasic goods    | Increase home entertainment<br>Decrease of the others: <ul style="list-style-type: none"> <li>• Postponed</li> <li>• Suspended</li> </ul> |
| Motivations       | Confinement measures<br>Contagion risk<br>Shortage of supplies<br>Other's behaviors<br>Economic situation                                 |

perishable products at the expense of other superfluous products.” The second class was hygiene-related products associated with the crisis, as explicitly mentioned by P39, who declared an increase in the purchasing of “products like handwash and kitchen paper,” and P44, who stated, “I have increased the quantities of cleaning and personal-care products [purchased].”

Table 1 shows a summary of the different purchasing changes and how the impact of this change was evidenced by participants.

However, the degree of this impact was differently assessed by each individual. On the one hand, we identified a set of respondents who expressed a small impact on purchasing behavior, such as P31, who professed that her purchasing behavior changed “almost nothing,” except for a few types of products. “I bought some frozen food that I was not used to buying before the crisis,” she continued. On the other hand, we also identified a group of participants who spoke of a more radical change in their behavior. In the words of P27, “The crisis has changed my purchasing behavior radically. Before it, I barely had food at home and used to buy it on a daily basis or ordered from home-delivery restaurants.”

**Motivations and decreases/increases of product purchasing behavior.** Questions two through five on the questionnaire served to identify in detail the two types of products that saw increases or decreases in the purchasing behavior of the participants. These questions also helped to elaborate consumers’ motivations to behave as they did.

A first group of products that highlighted by participants was the one that comprised basic goods. We considered part of this group all food and nonalcoholic drinks, cleaning and personal-care products, and medicines. Most of the participants reported that they had increased their purchases of these items. P6, for example, “bought more basic products, like food, but without any impulse [purchase],” and P48 explained that she had “increased cleaning and washing products like bleach, soaps, and other disinfectants.”

Based on the participants’ responses, we identified a second group composed of nonbasic products. In this case, a few participants reported that they had actually increased the purchase of some non-basics, such as entertainment services and products to be used at home. P2 said, “I have increased the purchase of entertainment items such as board games, puzzles, or movies for streaming.” Most respondents, however, had significantly cut back their expenditures on this type of item or postponed their purchases *sine die*. Examples of these restrained or suspended expenses included travel and leisure services, as illustrated by P25, who said that she had “stopped going to restaurants” and “held up a trip that had been going to take place shortly.” Another example was durable goods, although in this case, purchases were primarily postponed rather than definitively canceled. P1 stated, “I have postponed the purchase of some nonessential products, like a sofa or a TV set. At least for the short term; we will see in the following weeks, especially the television.”

Among respondents’ motivations, the one that proved most important was “the confinement measures” (P34). Almost all

participants declared that being confined had motivated them to change their purchasing behaviors. The change was positive in general, i.e., it caused respondents to increase their purchases of some products, like those mentioned by P2: “we wanted to have food at home, personal-care products, during the confinement and have more entertainment for adults and children.” But it also had negative effects and caused participants to decrease their purchases of some other products, as P13 said: “I cannot and should not go out. Moreover, most of the stores are closed. Only supermarkets are open.”

For participants, another important motivation was “to avoid the contagion” (P23). Hence, these participants did not remark on the confinement itself, but rather on their perception of the situation and their apprehension of being infected. In the words of P33: “I would be fearful when going out, and I prefer not to take the risk of being infected.”

A third motivation presented by participants was a concern about the shortage of products. P71 expressed a “certain worry for the supply of products,” which was why he decided to buy some products not only for immediate consumption but also in greater quantities—because of the “just in case” factor.

To observe what other people were doing constituted another motivation, which was even powerful enough to drive some participants to act compulsively. On this phenomenon, P48 said, “I got crazy when I went to the supermarket and saw more people buying with full-to-the-limit shopping carts. Then, I started to buy products in quantities greater than I needed.”

A final motivation of decreasing purchases that was expressed by respondents was the perspective of their economic situation. P31, for example, indicated some uncertainty about his family income in the coming months, “I don’t know how much my business will recover when this is all over.”, and P12 declared, “I prefer not to waste my money now on nonbasic goods.”

Table 2 shows a summary of the changes in the shopping basket and the facts that motivated them with the evidence shown by participants.

Results from both the high- and the low-impact group were similar in terms of motivations and behaviors. The latter group, however, was concerned with the future effects of the crisis. For instance, P58 articulated his response as follows: “We don’t know how long this crisis would last and what impact it would have here in the U.S.,” and P8 wanted “to be prepared for the coming confinement.” Participants from the high-impact group, in contrast, referred to a situation they were experiencing already. In this regard, P12 said, “There is now a risk of shortage and we are afraid we will not have food for the confinement,” and P35 concluded, “Definitively, the current emotional situation also negatively impacts our willingness to buy new goods or simply to spend any money.”

**Perception of the crisis.** As evidenced by the questionnaires, the manner in which received information had changed the perception of the crisis was comparable between the two groups of respondents. This was an unexpected result. Several respondents from both groups

asserted that their concerns about the virus had increased significantly, such as P27, who said, “the information I read about the crisis frightened me and altered my perception of the true risk of the outbreak.” Also, a significant number of participants across all countries expressed another change in their perceptions related to the degree and impact of the crisis. P56 expressed her concern in the following fashion, referring to the magnitude of the crisis: “The news I received affected me a lot. At the beginning, I saw it as something that was too far away and would never get to us, and now it is everywhere.” P23 assessed the impact as follows: “this is going to stop the world economy, and that impact will be huge on everyone. Nowadays, I see the virus with fear, much fear.” Despite this general agreement on the change in perceptions, a minority of respondents attested to a lower influence of the media and, consequently, showed a softer perception of the crisis. In the words of P64: “I don’t think my perception has varied too much. I keep thinking that this is something that will go away sooner or later and that I will not die because of this virus.” Similarly, P61 closed his answer with “I don’t pay too much attention to the news because they say the same things every day, and no one even know what is going to happen.” But also, this result of a softer perception appeared in both groups of respondents.

A possible explanation for this result is that the perception about the crisis is by nature subjective, similarly to the purchasing behavior and motivation. This is the reason why, although surprising, perception of the crisis showed no association with the country of residence of the respondents, even if the country was high impacted in terms of cases per million people. In light of these latest results, the research team decided to revisit the classification of participants and included a new categorization of the contributions according to the reported perception of the crisis and its influence. This categorization split the data into two halves, one whose sources professed a soft perception (of a low impact) and another whose authors declared the opposite, a rough perception (high impact) of the crisis. These groups were independent of the country of residence of any respondent. The results of this latter classification were two extremes of behavioral change by the respondents. One represented the majority of individuals, previously described, who showed a significant change in their purchasing behavior.

The other extreme comprised those individuals who showed a moderate change of behavior, associated with a softer perception of the crisis, like P26, who said, “up to now, my perception has not changed, and neither has my purchasing behavior. I rely on the capacity of the supermarkets to replenish their products as needed and their capacity to continue running their business even if the crisis worsens. Well, maybe I made some more impulse purchases to enjoy my confinement.” The primary justification given by this group was that the situation was not as critical as thought by most others—or, at least, they did not perceive it as such. “I haven’t increased my purchases; I keep doing my shopping daily. I didn’t stock any product because there was information about the supply to supermarkets and that soothed me,” said P10.

Table 3 shows a summary of the two levels of perception with the evidence shown by participants.

This new classification (negative and mild perception of the crisis) invited us to reanalyze the responses to the first items of the questionnaire (questions one through five). This new analysis confirmed the fact that consumers with more severe perception of the crisis changed their motivation and behavior to a greater extent. The

**Table 3**  
Levels of the crisis perception.

| Expressed perception | Participants' evidence                             |
|----------------------|--|
| Negative             | Concern about the virus<br>Magnitude of the crisis |
| Mild                 | Low general concern                                |

example of P50 when talking about the shopping basket illustrates this: “I always had some canned food [...], but I have purchased many more now.” Conversely, the few participants who expressed a mild perception of the crisis were also those whose changes in terms of purchasing behavior were tempered. Such as the change in the quantity of products, as answered by P22 to the question about the products they have increased their purchase: “up to now, practically none, except some because of the measures imposed.”

In conclusion, respondents to the qualitative questionnaire of this first study helped to corroborate the validity of our research questions. Thus, regarding RQ1, our results confirmed that the vast majority of respondents had changed their behavior in terms of their purchasing mode and the quantity and variety of products purchased regardless of the level of severity of the crisis in the consumer’s country of residence. Consumers changed their purchasing behavior in one or more of the following aspects: (1) the purchasing mode, (2) the quantity of products, or (3) the type of product. We observe that these three aspects are key elements in the configuration of the purchasing behavior of consumers (Manchanda et al., 1999; Yoo et al., 2006).

As we intended with our second research question—and touched on with the first—we further explored the effects of the crisis on the consumers’ purchasing motivations, as well as the final two elements of the CPB, which are the quantity and type of products. We classified the products into two groups, basic and non-basic goods. According to the results, these two groups were distinctly impacted by the change in consumers’ motivations. Basic goods experienced an increase in purchases, whereas purchases of non-basic goods decreased. Moreover, each group of products and each direction of change was associated with different motivations. We see a similarity between these motivations and those utilized by Kukar-Kinney et al. (2016), namely hedonic, utilitarian, and social motivations. However, there are some elements of the expressed motivations that originate exclusively in the context of the COVID-19 crisis. Consequently, we consider it necessary to include a new type of motivation, which we term “exigency motivation”.

Exigency motivation is defined as the impetus to make special purchases of products that appears only during crisis periods and is related to the overall perception of the crisis. This new purchasing impulse is aimed at covering the basic needs through certain products, but exceeding, however, the original functional purpose of these particular products.

Table 4 shows the summary of the different motivations expressed by participants, their impacts on the two groups of products, and the concepts of motivations drawn from the literature, alongside the new motivation elicited by this research.

It is remarkable that these motivations did not exhibit notable differences between both groups of consumers (those in severely impacted countries and those in less-impacted ones). The only peculiarity was in terms of timing: in severe-impact countries, motivations were based on actual facts, while in low-impact ones, motivations were instead based on expected events.

**Table 4**  
List of motivations and impacts on consumers’ purchasing behaviors.

| Expressed motivations  | Impact on purchasing behavior  | Associated motivation concepts   |
|--|--|--|
| Confinement  | Increase of basic goods<br>Decrease of nonbasic goods                            | Utilitarian motivation (Voss et al. 2003)<br>Hedonic motivation (Voss et al. 2003) |
| Apprehension   | Decrease of nonbasic goods   | Social motivation (Lennox and Wolfe 1984)  |
| Shortage of products<br>Others’ behavior<br>Economic situation | Increase of basic goods<br>Increase of basic goods<br>Decrease of nonbasic goods | Exigency motivation  |

Because we wanted to identify differences between the two groups of participants in relation to the crisis, we explored their exposure to and influence by the information received, as well as their changes in the perception of the crisis. Differences were not evident in these cases either. In terms of the influence of news and information, we saw that for both levels of crisis severity, the types of news received and accessed were the same: (1) government measures and states of confinement, (2) COVID-19 and its spread, and (3) product shortages and the population's purchasing behavior. There was only one exception, which was the set of news referring to what was occurring in those countries more highly impacted by the crisis. This news more strongly influenced customers living in low-impact countries because of the 'contagion' effect that the news had: in crisis situations, news and reactions spread faster than the cause of the crisis itself. This effect is not new; it was previously studied in financial crises (Baur, 2012; Khalid & Kawai, 2003), but had never before been observed in public health emergencies.

Regarding their perceptions in general, all respondents demonstrated a similar pattern. The level of severity of the crisis in the country of residence did not demonstrate any effect on how consumers changed their perception of the crisis in response to the information received. Indeed, we could identify subjects in both groups of countries who did not show any change in their perception and thus in their purchasing motivation and behavior. Consequently, we propose that the effects of the different motivations identified in our study (utilitarian, hedonic, social, and exigency) on the purchasing behaviors of consumers are moderated by the individual perception of the crisis but not by the severity of the crisis itself.

#### 4.1. Measurement model

Once assessed the empirical results derived from the qualitative study, we subsequently present the assessment of the measurement model, which is the first stage of the quantitative study appraisal. In the first position, the constructs that form the four distinct purchasing motivations, as well as the first-order constructs that comprise the dimensions that form the Overall COVID-19 crisis awareness (OCA) are modeled in Mode A. This way, assessing the measurement model implies examining the following steps: individual item reliability, construct reliability, convergent validity, and discriminant validity. Table 5 reveals that most of the items attain outer loadings above the 0.707 critical level. Hence, the individual item reliability step is satisfied; only a few of these loadings were under this threshold and these were removed, following the recommendations for item-trimming specified by Hair et al. (2011), for being too low. Besides, all of these constructs attained composite reliabilities (CR), Cronbach's Alphas, and Dijkstra–Henseler's indicators ( $Rho_A$ ) greater than 0.7 (Nunnally and Bernstein 1994). These also attained convergent validity, given that their average variance extracted (AVE) surpassed the 0.5 level (Fornell and Larcker, 1981). Finally, applying both the Fornell–Larcker standard and the narrowest HTMT approach (Henseler et al., 2015), Table 6 denotes that all constructs attain discriminant validity.

In second place, the endogenous constructs representing the distinct groups of products and services (i.e., basic-needs products; non-basic-needs products; entertainment, travel, and leisure; and electronic products) were modeled in Mode B. Consequently, these variables ought first to be examined in terms of the potential existence of multicollinearity among their items and second in the assessment of their outer weights (Roldán and Sánchez-Franco, 2012). In this vein, Petter et al. (2007) posit that variance inflation factor (VIF) values over 3.3 suggest the existence of excessive multicollinearity between items. In our study, as can be observed in Table 5, the greatest VIF value for indicators reaches only 1.690, well under the 3.3 critical level. Thus, it may be settled that multicollinearity is not a concern in this study. The magnitude and significance of the outer weights must

also be evaluated. Such appraisal may provide interesting information about the extent to which each of the manifest variables contribute to forming its corresponding construct, enabling researchers to establish a ranking of these items according to their contributions (Chin 1998).

#### 4.2. Structural model

Following the guidance provided by Hair et al. (2014), this study applies a bootstrapping (5000 random resamples) procedure to generate the standard errors, t-statistics, p-values, and 95% bias corrected confidence intervals (BCCI), which allow the assessment, for statistical support, of the direct relationships hypothesized in the conceptual model. Tables 7 and 8 include the key parameters that should be considered when assessing the structural–inner–model linkages. First, the coefficient of determination ( $R^2$ ) is regarded as the principal measure to employ when measuring the explained variance of the endogenous constructs. It is hard to provide rules of thumb for acceptable  $R^2$  values as this is heavily dependent on the model complexity and the research discipline (Hair et al., 2016). Hence, while values around 0.2 are deemed high in disciplines such as consumer behavior, in studies aimed at predicting customer satisfaction or loyalty much higher values of over 0.7 might be expected (Hair et al., 2016). Table 7 reveals that the structural model entails acceptable predictive relevance for the endogenous constructs, given that most  $R^2$  coefficients are between 0.1 and 0.2. Moreover, all of the direct and moderation relationships hypothesized are shown to be statistically significant, except for following cases: Hedonic factors→Basic-needs products; Hedonic factors→Electronic products; Social-comparison factors→Electronic products; and Utilitarian factors→Electronic products, which are proved non-significant. Therefore, we find empirical evidence to sustain, totally or partially, the five hypotheses posited in this research.

This study empirically reveals that, as hypothesized, exigency and utilitarian factors are positively related to the purchasing of basic-needs products in the context of the COVID-19 crisis. Moreover, these two factors are both negatively related to product categories Electronic Products, Entertainment Travel and Leisure, and Non Basic Products, although the Utilitarian Factors→Electronic Products relationship is not proven to be statistically significant. In addition, as hypothesized, the empirical results support that hedonic factors are negatively related to basic-needs product purchasing and positively related to the rest of the product categories, while social-comparison factors are positively related to the purchasing of all product categories. However, the Hedonic Factors→Basic Needs Products, Hedonic Factors→Electronic Products, and Social Comparison Factors→Electronic Products relationships are not proven to be statistically significant.

In light of the results of the empirical analysis presented in this study, we find support for hypotheses H1–H4, which stated that in the context of a major health crisis such as the one experienced worldwide due to the COVID-19 virus, consumers tend to redirect their purchases towards the consumption of basic necessities, to the detriment of other, less pressing products and services. In addition, statistical evidence is found to affirm that said purchasing behavior is explained by virtue of utilitarian, exigency, and social-comparison factors.

Moreover, as hypothesized in H5, the empirical results support that customers' overall level of crisis awareness positively moderates the links between Purchasing Motivation and two distinct categories of products: –i.e., Basic needs products vs. Other purchasing categories–. All the relationships hypothesized in this study, both direct and moderation links, have been proved statistically significant. This implies not only that consumers in this scenario opt to purchase basic goods, to the detriment of other product types, but also that these direct relationships are moderated (reinforced) by the degree of awareness that consumers have about the COVID-19 situation.



**Table 5**  
Individual item reliability, composite reliability, convergent validity, potential multicollinearity, and weights evaluation for the model under assessment.

| Construct / Dimension / Item   | Outer loadings | Outer weights | VIF   | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|--|----------------|---------------|-------|------------------|-------|-----------------------|----------------------------------|
| <b>Hedonic factors [Mode A]</b>  |                | 0,238         | 1,055 | 0,842            | 0,855 | 0,888                 | 0,613                            |
| P1_1_Fun   | 0,837          |               |       |                  |       |                       |                                  |
| P1_2_Exciting  | 0,770          |               |       |                  |       |                       |                                  |
| P1_3_Delightful  | 0,831          |               |       |                  |       |                       |                                  |
| P1_4_Thrilling   | 0,695          |               |       |                  |       |                       |                                  |
| P1_5_Enjoyable   | 0,775          |               |       |                  |       |                       |                                  |
| <b>Utilitarian factors [Mode A]</b>  |                | 0,421         | 1,054 | 0,834            | 0,894 | 0,882                 | 0,653                            |
| P1_10_Practical  | 0,843          |               |       |                  |       |                       |                                  |
| P1_6_Effective   | 0,693          |               |       |                  |       |                       |                                  |
| P1_7_Helpful   | 0,834          |               |       |                  |       |                       |                                  |
| P1_9_Necessary   | 0,852          |               |       |                  |       |                       |                                  |
| <b>Social comparison factors [Mode A]</b>  |                | 0,020         | 1,160 | 0,802            | 0,834 | 0,863                 | 0,563                            |
| P2_2_When I have been uncertain about my purchasing behavior, I have looked to the behavior of others for cues | 0,568          |               |       |                  |       |                       |                                  |
| P2_3_I have purchased the same products that others have purchased   | 0,858          |               |       |                  |       |                       |                                  |
| P2_4_I have purchased the same quantities that others have purchased   | 0,833          |               |       |                  |       |                       |                                  |
| P2_5_I have purchased at the same places that others have purchased  | 0,671          |               |       |                  |       |                       |                                  |
| P2_6_It is important for me to follow a purchasing behavior similar to that of others                          | 0,783          |               |       |                  |       |                       |                                  |
| <b>Exigency factors [Mode A]</b>   |                | 0,843         | 1,169 | 0,745            | 0,761 | 0,840                 | 0,569                            |
| P3_1_Confinement   | 0,689          |               |       |                  |       |                       |                                  |
| P3_2_Contagion risk  | 0,691          |               |       |                  |       |                       |                                  |
| P3_3_Shortage of supplies  | 0,773          |               |       |                  |       |                       |                                  |
| P3_4_Crisis duration   | 0,853          |               |       |                  |       |                       |                                  |
| <b>Basic needs products [Mode B]</b>   |                |               |       |                  |       |                       |                                  |
| P7_1_Food and non-alcoholic drinks   |                | 0,667         | 1,136 |                  |       |                       |                                  |
| P7_4_Personal care   |                | 0,198         | 1,364 |                  |       |                       |                                  |
| P7_6_Medicines   |                | 0,305         | 1,205 |                  |       |                       |                                  |
| P7_7_Cleaning products   |                | 0,251         | 1,435 |                  |       |                       |                                  |
| P7_9_Utilities   |                | -0,044        | 1,057 |                  |       |                       |                                  |
| <b>Non basic needs products [Mode B]</b>   |                |               |       |                  |       |                       |                                  |
| P7_2_Alcoholic drinks  |                | 0,122         | 1,175 |                  |       |                       |                                  |
| P7_3_Gourmet products or delicatessen  |                | 0,626         | 1,216 |                  |       |                       |                                  |
| P7_5_Cosmetics and perfumes  |                | -0,150        | 1,179 |                  |       |                       |                                  |
| P7_12_Clothes and fashion accessories  |                | 0,659         | 1,142 |                  |       |                       |                                  |
| <b>Entertainment, travelling and leisure [Mode B]</b>  |                |               |       |                  |       |                       |                                  |
| P7_8_Home entertainment and online educational courses   |                | 0,148         | 1,017 |                  |       |                       |                                  |
| P7_13_Travelling and transport   |                | 0,739         | 1,517 |                  |       |                       |                                  |
| P7_14_Leisure services, like restaurants and cinemas   |                | 0,332         | 1,507 |                  |       |                       |                                  |
| <b>Electronic products [Mode B]</b>  |                |               |       |                  |       |                       |                                  |
| P7_10_Consumer electronics   |                | 0,052         | 1,690 |                  |       |                       |                                  |
| P7_11_Home appliances  |                | 0,966         | 1,690 |                  |       |                       |                                  |
| <b>Overall COVID-19 Crisis awareness [MC Mode B]</b>   |                |               |       |                  |       |                       |                                  |
| <i>COVID-19 Crisis perception [Mode A]</i>   |                | 0,879         | 1,083 | 0,785            | 0,804 | 0,852                 | 0,537                            |
| P4_1_Confinement measures  | 0,756          |               |       |                  |       |                       |                                  |
| P4_2_Dimension of the breakout   | 0,849          |               |       |                  |       |                       |                                  |
| P4_3_Economic impact   | 0,649          |               |       |                  |       |                       |                                  |
| P4_4_Social impact   | 0,695          |               |       |                  |       |                       |                                  |
| P4_5_Risk of infection   | 0,698          |               |       |                  |       |                       |                                  |
| <i>News and media exposure [Mode A]</i>  |                | 0,346         | 1,229 | 0,712            | 0,806 | 0,815                 | 0,527                            |
| P5_1_Confinement measures  | 0,853          |               |       |                  |       |                       |                                  |
| P5_2_Government decisions  | 0,741          |               |       |                  |       |                       |                                  |
| P5_4_Information from other affected countries   | 0,622          |               |       |                  |       |                       |                                  |
| P5_5_Behavior of people  | 0,668          |               |       |                  |       |                       |                                  |
| <i>Social networks exposure [Mode A]</i>   |                | 0,154         | 1,166 | 0,881            | 0,896 | 0,904                 | 0,543                            |
| P6_1_Confinement measures  | 0,756          |               |       |                  |       |                       |                                  |
| P6_2_Government decisions  | 0,761          |               |       |                  |       |                       |                                  |
| P6_3_Economic impact   | 0,761          |               |       |                  |       |                       |                                  |
| P6_4_Information from other affected countries   | 0,802          |               |       |                  |       |                       |                                  |
| P6_5_Behavior of people  | 0,772          |               |       |                  |       |                       |                                  |
| P6_6_Scientific data about the disease and virus   | 0,721          |               |       |                  |       |                       |                                  |
| P6_7_Shortage of supplies in stores  | 0,719          |               |       |                  |       |                       |                                  |
| P6_8_Fake news   | 0,579          |               |       |                  |       |                       |                                  |

Notes: AVE: average variance extracted; MC: multidimensional construct.

**Table 6**  
Discriminant validity for the model analyzed.

| Fornell-Larcker criterion             |                      |                    |                     |                                       |                 |                          |                                   |                           |                     |
|---------------------------------------|----------------------|--------------------|---------------------|---------------------------------------|-----------------|--------------------------|-----------------------------------|---------------------------|---------------------|
|                                       | Basic needs products | Contextual factors | Electronic products | Entertainment, travelling and leisure | Hedonic factors | Non basic needs products | Overall COVID-19 crisis awareness | Social comparison factors | Utilitarian factors |
| Basic needs products                  | 0.603                |                    |                     |                                       |                 |                          |                                   |                           |                     |
| Contextual factors                    | 0.466                | 0.755              |                     |                                       |                 |                          |                                   |                           |                     |
| Electronic products                   | 0.020                | -0.111             | 0.756               |                                       |                 |                          |                                   |                           |                     |
| Entertainment, travelling and leisure | -0.032               | -0.142             | 0.200               | 0.716                                 |                 |                          |                                   |                           |                     |
| Hedonic factors                       | -0.042               | -0.122             | 0.058               | 0.096                                 | 0.783           |                          |                                   |                           |                     |
| Non basic needs products              | 0.002                | -0.166             | 0.318               | 0.511                                 | 0.142           | 0.555                    |                                   |                           |                     |
| Overall COVID-19 crisis awareness     | 0.184                | 0.307              | -0.072              | -0.235                                | -0.115          | -0.235                   | 0.685                             |                           |                     |
| Social comparison factors             | 0.318                | 0.345              | -0.016              | 0.143                                 | 0.008           | 0.083                    | -0.023                            | 0.750                     |                     |
| Utilitarian factors                   | 0.077                | 0.044              | -0.022              | -0.229                                | 0.172           | -0.208                   | 0.175                             | -0.101                    | 0.809               |

| Heterotrait–Monotrait Ratio (HTMT) criterion |                      |                    |                     |                                       |                 |                          |                                   |                           |                     |
|--|----------------------|--------------------|---------------------|---------------------------------------|-----------------|--------------------------|-----------------------------------|---------------------------|---------------------|
|  | Basic needs products | Contextual factors | Electronic products | Entertainment, travelling and leisure | Hedonic factors | Non basic needs products | Overall COVID-19 crisis awareness | Social comparison factors | Utilitarian factors |
| Basic needs products                         | 0.603                |                    |                     |                                       |                 |                          |                                   |                           |                     |
| Contextual factors                           | 0.466                | 0.755              |                     |                                       |                 |                          |                                   |                           |                     |
| Electronic products                          | 0.020                | -0.111             | 0.756               |                                       |                 |                          |                                   |                           |                     |
| Entertainment, travelling and leisure        | -0.032               | -0.142             | 0.200               | 0.716                                 |                 |                          |                                   |                           |                     |
| Hedonic factors                              | -0.042               | -0.122             | 0.058               | 0.096                                 | 0.783           |                          |                                   |                           |                     |
| Non basic needs products                     | 0.002                | -0.166             | 0.318               | 0.511                                 | 0.142           | 0.555                    |                                   |                           |                     |
| Overall COVID-19 crisis awareness            | 0.184                | 0.307              | -0.072              | -0.235                                | -0.115          | -0.235                   | 0.685                             |                           |                     |
| Social comparison factors                    | 0.318                | 0.345              | -0.016              | 0.143                                 | 0.008           | 0.083                    | -0.023                            | 0.750                     |                     |
| Utilitarian factors                          | 0.077                | 0.044              | -0.022              | -0.229                                | 0.172           | -0.208                   | 0.175                             | -0.101                    | 0.809               |

### 4.3. Multigroup analysis

This study investigates whether the links examined in the conceptual model are subject to significant differences according to the stringency level of the measures adopted by each government in response to the COVID-19 outbreak. The reasoning that underlies this study deals with the interest in ascertaining whether the level of stringency of government measures during the COVID-19 pandemic scenario might have affected consumers' purchasing motivations and behaviors, as was queried in our fourth research question. Hence, this study is purely exploratory in nature. To this end, this study relies on a database collected from public sources by a team of students and staff at the University of Oxford. This database has been used to build a "stringency index" aimed at rigorously and consistently tracking and contrasting government policies and responses around the world (Hale et al., 2020).

To this aim, the database was filled with new data regarding the stringency levels of the measures adopted by each government in response to the COVID-19 outbreak. This data has been collected from public sources by a team formed of over one hundred University of Oxford students and staff from all around the world. Thus, the ongoing project "Oxford COVID-19 Government Response Tracker (OxCGRT)", headed by Hale et al. (2020), has systematically gathered data on diverse governmental responses (including school and university closures, travel bans, etc.) and subsequently scored the stringency of each such policy and aggregated these scores into a common Stringency Index that records on a 0–100 scale the quantity and severity of government measures. However, the authors clarify that this index is neither aimed at nor valid for "scoring" the accuracy or efficacy of a country's response. With this in mind, we have taken the data of this index for the period March 27<sup>th</sup> 2020 to April 2<sup>nd</sup> 2020, which corresponds to the period in which we obtained the survey data, and calculated the average of the stringency index for this period and for each of the countries represented in our sample. Fig. 2 reveals the evolution,

during the considered period, of the relationship between the numbers of COVID-19 cases and the stringency of government responses.

To test whether there exist significant differences according to stringency level in the model 2 proposed, this paper relies on the use of PLS-MGA. This method is a non-parametric multigroup analysis approach based on a significance test of the difference of group-specific results that yields PLS-SEM bootstrapping outcomes of each data group (Hair et al., 2017). As Sarstedt et al. (2011) note, the PLS-MGA approach (Henseler et al., 2009) that can be executed through SmartPLS software extends Henseler's original nonparametric multigroup analysis technique.

To develop this method, the sample was split into two groups according to the levels of the stringency index. Group 1 (High stringency) comprised those countries whose index Fig. was over 80 points, while group 2 encompassed those countries whose index Fig. was less than 80. When translated to our sample, group 1 scaled to 780 cases and group 2 reached 232 records. Henseler's (2009) PLS-MGA approach compares, for every path-modeled relationship, each bootstrap estimate parameter for the two groups. In this way, the method counts the number of occasions where the bootstrap estimate of group 1 is higher than that of group 2. Subsequently, this method develops a p-value (one-tailed test). Hence, it might be concluded that there are significant differences at the 5% probability-of-error level if the p-value is lower than 0.05 or higher than 0.95 for a set of group-specific path coefficients (Hair et al., 2017). As Table 9 depicts, all the p-values for the two compared groups (High stringency vs. Low stringency) fall within the 0.05–0.95 interval. Therefore, it can be concluded that when the sample is divided by stringency measures, there are not significant differences between the two groups regarding the relationships modeled.

By implementing the PLS-MGA technique, our study reveals that there are not significant differences between groups 1 and 2 on the basis of the countries' stringency levels. This implies that consumers have behaved and responded, at least in terms of purchases and

**Table 7**  
Structural model results.

| Relationships   | Path coefficient | T Statistics | P Values | 95% BCCI |        | Support |
|---|------------------|--------------|----------|----------|--------|---------|
| <b>Direct effects</b>   |                  |              |          |          |        |         |
| Exigency factors → Basic needs products [R <sup>2</sup> = 0.255]                  | 0.396 ***        | 11.817       | 0.000    | 0.317    | 0.449  | Yes     |
| Exigency factors → Electronic products [R <sup>2</sup> = 0.029]                   | -0.115 **        | 2.696        | 0.007    | -0.188   | -0.015 | Yes     |
| Exigency factors → Entertainment, travelling and leisure [R <sup>2</sup> = 0.129] | -0.164 ***       | 4.860        | 0.000    | -0.231   | -0.106 | Yes     |
| Exigency factors → Non basic needs products [R <sup>2</sup> = 0.165]              | -0.164 ***       | 4.731        | 0.000    | -0.218   | -0.080 | Yes     |
| Hedonic factors → Basic needs products  | -0.013 ns        | 0.379        | 0.705    | -0.078   | 0.050  | No      |
| Hedonic factors → Electronic products   | 0.051 ns         | 1.398        | 0.163    | -0.020   | 0.118  | No      |
| Hedonic factors → Entertainment, travelling and leisure                           | 0.106 ***        | 3.138        | 0.002    | 0.038    | 0.165  | Yes     |
| Hedonic factors → Non basic needs products  | 0.169 ***        | 5.435        | 0.000    | 0.107    | 0.230  | Yes     |
| Social comparison factors → Basic needs products                                  | 0.188 ***        | 4.840        | 0.000    | 0.099    | 0.258  | Yes     |
| Social comparison factors → Electronic products                                   | 0.015 ns         | 0.431        | 0.666    | -0.055   | 0.078  | No      |
| Social comparison factors → Entertainment, travelling and leisure                 | 0.184 ***        | 4.230        | 0.000    | 0.097    | 0.261  | Yes     |
| Social comparison factors → Non basic needs products                              | 0.089 **         | 2.598        | 0.010    | 0.023    | 0.155  | Yes     |
| Utilitarian factors → Basic needs products  | 0.083 **         | 2.824        | 0.005    | 0.020    | 0.133  | Yes     |
| Utilitarian factors → Electronic products   | -0.014 ns        | 0.404        | 0.686    | -0.078   | 0.057  | No      |
| Utilitarian factors → Entertainment, travelling and leisure                       | -0.199 ***       | 4.488        | 0.000    | -0.275   | -0.110 | Yes     |
| Utilitarian factors → Non basic needs products                                    | -0.171 ***       | 4.565        | 0.000    | -0.243   | -0.097 | Yes     |
| <b>Controls</b>   |                  |              |          |          |        |         |
| Control [Age] → Basic needs products  | -0.028 ns        | 0.655        | 0.513    | -0.125   | 0.051  |         |
| Control [Age] → Electronic products   | -0.078 *         | 1.680        | 0.094    | -0.153   | 0.036  |         |
| Control [Age] → Entertainment, travelling and leisure                             | -0.052 ns        | 1.448        | 0.148    | -0.115   | 0.026  |         |
| Control [Age] → Non basic needs products  | -0.188 ***       | 4.827        | 0.000    | -0.266   | -0.113 |         |
| Control [Gender] → Basic needs products   | 0.045 ns         | 1.551        | 0.122    | -0.012   | 0.100  |         |
| Control [Gender] → Electronic products  | 0.008 ns         | 0.207        | 0.836    | -0.072   | 0.080  |         |
| Control [Gender] → Entertainment, travelling and leisure                          | 0.082 **         | 2.746        | 0.006    | 0.027    | 0.140  |         |
| Control [Gender] → Non basic needs products                                       | 0.094 **         | 2.919        | 0.004    | 0.025    | 0.153  |         |
| Control [Income] → Basic needs products   | 0.019 ns         | 0.494        | 0.621    | -0.063   | 0.088  |         |
| Control [Income] → Electronic products  | 0.097 **         | 2.577        | 0.010    | 0.017    | 0.166  |         |
| Control [Income] → Entertainment, travelling and leisure                          | 0.018 ns         | 0.556        | 0.579    | -0.044   | 0.083  |         |
| Control [Income] → Non basic needs products                                       | 0.172 ***        | 4.470        | 0.000    | 0.091    | 0.243  |         |
| Control [Occupancy] → Basic needs products  | 0.015 ns         | 0.390        | 0.696    | -0.061   | 0.091  |         |
| Control [Occupancy] → Electronic products   | 0.022 ns         | 0.459        | 0.646    | -0.071   | 0.112  |         |
| Control [Occupancy] → Entertainment, travelling and leisure                       | -0.067 ns        | 1.631        | 0.104    | -0.148   | 0.011  |         |
| Control [Occupancy] → Non basic needs products                                    | 0.052 ns         | 1.446        | 0.149    | -0.024   | 0.118  |         |

Notes: 95% BCCI: 95% bias corrected percentile bootstrap confidence interval. Bootstrapping based on n = 5,000 subsamples.;

\*\*\* p-value 0.001;

\*\* p-value 0.01;

\* p-value 0.05 [based on t(4999), one-tailed test]; t(0.05, 4999) = 1.645; t(0.01, 4999) = 2.327; t(0.001, 4999) = 3.092; ns = not significant.

consumption, in a fairly homogeneous way, regardless of the strictness of measures and policies implemented by their various governments. When it comes to the assessment of consumer behavior during the COVID-19 outbreak, it seems fairly unimportant how strict these government policies have been.

**5. Discussion**

Consumer purchasing behavior and its antecedent motivations have changed during the COVID-19 crisis. This research proved that the circumstances surrounding the COVID-19 crisis, namely the truly global dimension of the pandemic and the exceptional associated measures, have substantially impacted the way in which individuals performed their various purchases.

In particular, regarding the products categories, we observed that a crisis having the particular characteristics of the COVID-19 case proved sufficiently able to affect a new balance between purchases of basic-needs products and those of other product categories. Additionally, this shift in CPB was associated with a change in the motivations of consumers. This transformation was produced by two characteristics of the COVID-19 crisis: its impact on individual circumstances and, simultaneously, its global scale. The former reinforces the utilitarian motivations to purchase of basic goods, whereas the latter positively impacted the purchasing of products of any category. Thus, a new equilibrium of motivations was created by the COVID-19 crisis. In fact, a new motivation was revealed as a determinant. We termed this exigency motivation, which is a motivation emanating from this special context.

The empirical results of our study proved that the exigency motivation is positively linked to the purchase of basic goods, while the

**Table 8**  
Summary of Moderation analysis results.

| Relationships   | Path coefficient | T Statistics | P Values | 95% BCCI |       | Support |
|---|------------------|--------------|----------|----------|-------|---------|
| <b>Moderation effects</b>   |                  |              |          |          |       |         |
| Moderation [Overall COVID-19 crisis awareness * Purchasing Motivation → Basic Needs Products] [R <sup>2</sup> = 0.246]        | 0.095***         | 3.358        | 0.001    | 0.041    | 0.153 | Yes     |
| Moderation [Overall COVID-19 crisis awareness * Purchasing Motivation → Other purchasing categories] [R <sup>2</sup> = 0.150] | 0.091 **         | 2.535        | 0.011    | 0.021    | 0.164 | Yes     |

Notes: 95% BCCI: 95% bias corrected percentile bootstrap confidence interval. Bootstrapping based on n=5,000 subsamples.

\*\*\* p-value=0.001;

\*\* p-value=0.01;

\* p-value =0.05 [based on t(4999), one-tailed test]; t(0.05, 4999) = 1.645; t(0.01, 4999) = 2.327; t(0.001, 4999) = 3.092; ns = not significant.

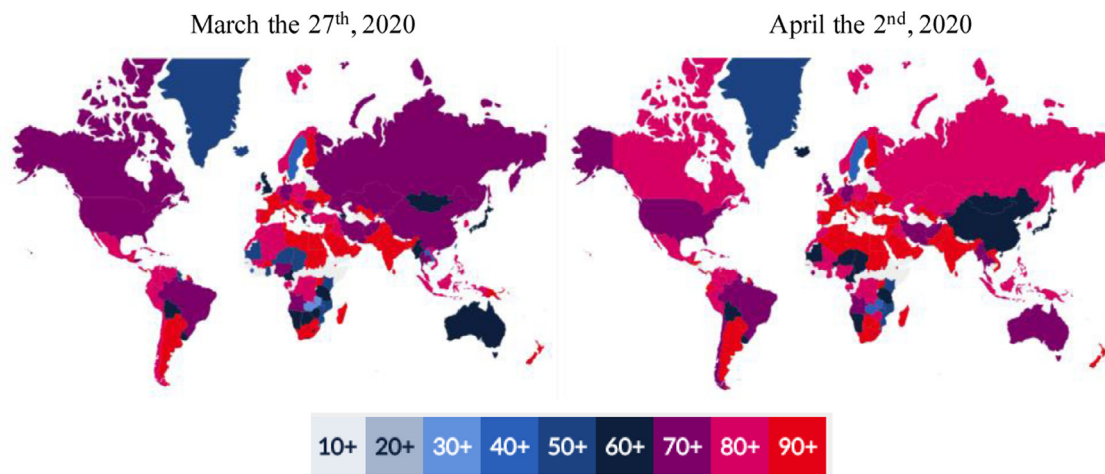


Fig. 2. Heat map showing the level of stringency of government responses (Hale et al. 2020).

relationship with the other purchasing categories was negative. In the particular case of electronic products, this negative relationship could be explained by the following two factors: first, the high expense that they may imply compared to other product categories, and second, the uncertainty regarding the duration of lockdown measures.

Nevertheless, although the crisis circumstances and related information speeded fast across different countries, it was individual perceptions of these facts that arguably ruled the relationship between purchasing motivation and behavior, rather than the objective facts themselves on matters such as numbers of deaths or infections.

Finally, consumer responses and attitudes were shown to be the same, regardless of what stringent initiatives were carried out by governments. This emphasized the importance of exigency motivation and crisis perception when it came to consumer purchasing behavior.

5.1. Theoretical implications

For the first time in an academic research paper, the scales of hedonic and utilitarian motivations designed by Voss et al. (2003) and the scale of social-comparison factors proposed by Lennox and Wolfe (1984) were used in a global health-emergency setting like the

one provoked by the COVID-19 pandemic. There were two implications here; the first was that in a crisis moment, the utilitarian motivation was more important than the hedonic (insofar as its relationship to CPB). The second implication was that these scales were validated in this particular context.

An additional implication was that the set of motivations presented by Voss et al. (2003) related to hedonic and utilitarian factors, and those presented by Lennox and Wolfe (1984) about social-comparison factors, proved to be insufficient to fully explain the changes in CPB in a crisis environment like the COVID-19. Hence, by virtue of the information collected from the qualitative study, we were able to assemble a new motivation scale known as exigency motivation. This new scale and its items could be very useful in future research as it could help to create a wider and deeper understanding of CPB in a health-crisis context.

The next theoretical implication that emerged from this paper also concerned the design and proposition of a new scale model to measure the perception of a crisis, taking into consideration exposure to the news (conventional media and social media) in a situation similar to coronavirus pandemic. As we presented in the quantitative study, we relied on the information obtained by our qualitative studies to frame an ad hoc scale. This allowed us to create a better fit and improved measures of the impact and the relationship between

Table 9  
PLS-MGA results.

| Relationships   | Path Coefficients Original (High stringency) | Path Coefficients Original (Low stringency) | Total Effects diff ( High stringency - Low stringency ) | p-value (High stringency vs Low stringency) |
|---|--|---|---|---|
| Direct effects  |  |   |   |   |
| Purchasing motivation → Basic needs products  | 0.427  | 0.539                                       | 0.112   | 0.792                                       |
| Purchasing motivation → Electronic products   | -0.060                                       | -0.181                                      | 0.122   | 0.114                                       |
| Purchasing motivation → Entertainment, travelling and leisure   | -0.161                                       | -0.164                                      | 0.004   | 0.524                                       |
| Purchasing motivation → Non basic needs products  | -0.214                                       | -0.184                                      | 0.03  | 0.598                                       |
| Moderation effects  |  |   |   |   |
| Moderation [Overall COVID-19 crisis awareness * Purchasing Motivation → Basic Needs Products] [R <sup>2</sup> = 0.246]        | 0.100  | 0.074                                       | 0.025   | 0.343                                       |
| Moderation [Overall COVID-19 crisis awareness * Purchasing Motivation → Other purchasing categories] [R <sup>2</sup> = 0.150] | 0.097  | 0.014                                       | 0.083   | 0.164                                       |

Note: ns = not significant.

consumed media/news, consumers' purchasing behaviors, and their motivations in a situation as critical as the COVID-19 outbreak.

The final implication that emerged from the quantitative study was that there were no significant differences in the linkages between motivations and CPBs based on the level of stringency assessed from government measures. This might be explained by the fact that in modern days, news and reactions speeded faster than the cause of the crisis itself. This effect was not new, having previously been studied in the case of financial crises, (Baur, 2012; Khalid & Kawai, 2003) but it had previously never been observed in public-health emergencies.

## 5.2. Managerial Implications

The COVID-19 crisis not only affected individuals but also hindered and harmed business and economic activities to a great extent (McKinsey, 2020). Considering product purchase behaviors, we observed that some product categories, such as non-perishable foods, personal care, and cleaning products, among others, saw a huge demand spike in a short period of time. On the other hand, product categories like fashion, luxury, and durable goods saw no demand at all. This reality was directly linked with the utilitarian motivation that compels people to buy basic products instead of goods or services of another sort. In particular, companies providing non-essential products or services must prepare strategies, contingency plans and policies for their different functions that allow them to face periods of several months with limited or no sales. Principally, this should help retail and distribution companies in the future to predict certain demand peaks in case of a crisis and therefore maintain a more suitable stock by creating value for their customers (Kumar & Reinartz, 2016).

Mobile applications and social media platforms have been claimed to be drivers of change in consumers' behavior (Ramos, Rita & Moro, 2019). In this vein, the confinement measures had an enormous impact on the way in which people purchased. The Internet and the online shopping made possible the continued purchase of many products and services, yet it changed substantially the customer journey map, urging companies to understand this new experience and to adapt accordingly (Lemon and Verhoef, 2016). However, this meant an enormous challenge for many companies, who had to enter on a process of change and adaptation (Cepeda-Carrión et al., 2017) that involved converting their offline businesses into online businesses almost overnight. This forced companies to resize their online capacities, to the detriment of their offline ones in terms of human resources, delivery, technology, purveyors, and stock control. This experience will prove very useful in the future, and it is likely that some of these new habits and preferences will be maintained over time—an implication we also identify in a study conducted by Kim (2020). This is consistent with the view of Shakina and Barajas (2020), which claim that fostering a proactive attitude towards innovation is a reasonable response to adverse conditions such as the ones caused by a crisis.

Finally, for companies, particularly those in non-essential product sectors, was the need to pivot their business models. Because consumers change due to crises (Antonetti et al., 2019; Brown et al., 2013), as we confirmed in this research, many companies had to change too and reinvent themselves. Indeed, only some were able to do so intelligently and took full advantage of the opportunities offered by technology to face this reinvention process. For example, companies that used their social networks to sell their products

(Kumar et al., 2016) while monetizing these channels (Park et al., 2018).

## 5.3. Limitations and directions for future research

The theoretical and empirical insights featured in this research study were not exempt from certain limitations. These should be considered when attempting to properly grasp this study's discoveries.

In relation to qualitative studies, it was recognized that reliability, validity, and generalizability were the most important limitations that ought to be addressed (Creswell, 2009). Regarding reliability, special care was taken to design and document the research procedure in order to secure the consistency of the research across various settings. Such a structured procedure was an essential cornerstone of excluding eventual errors or biases on the part of researchers or participants (Kvale, 1994). Concerning validity, we worked to improve the accuracy of our analyses and results by (1) ensuring the size and saturation of the collected data and (2) engaging in a deep and thorough literature review about past crises. Also, we believe that a high level of generalizability was obtained by the ensuring that participants had diverse profiles, as shown in the corresponding web appendices.

Although this paper provides evidence of causality, the causality itself cannot be corroborated; it is the researcher's role to *assume* the directions of causal relationships by inferring them from theory (Fornell & Larcker, 1981). Further, the data employed in this paper is of a cross-sectional nature, which impeded the grasping of sequential influences or linkages among the main constructs of the posited models. Hence, collecting data at a future time (in a post-crisis scenario) and developing an additional longitudinal study might yield interesting and complementary insights.

Provided these limitations, as well as the theoretical and managerial implications mentioned above, we proposed a series of future research avenues. According to Arens and Hamilton (2018), some of the patterns and habits that emerged during crises persist over time. Thus, it would be interesting to search for and study this effect in the particular case of the COVID-19 crisis. If such a study were performed, its results could be compared with those of this study, and the fidelity of consumers' recollections of their actual behavior during the COVID-19 crisis could be assessed. It could also be of interest to delve into other aspects of consumer behavior related to the COVID-19 crisis, such as satisfaction, customer value or brand loyalty, to name just three. In addition, the profusion of neuromarketing and the use technological equipment aimed at recording and measuring the consumers' brain activity and emotional states (González-Morales et al., 2020) while making their purchasing decisions under distinct situations might also be a potentially fascinating line of research.

An additional interesting line of research that we plan to develop in the future is tied to panic buying, a phenomenon observed during the early stages of the pandemic, as well as the different types of hoarding.

Another promising research course would be to study the impact of the COVID-19 crisis on different aspects of companies such as manager's reaction to crisis, or how managers take decisions in high uncertainty and complex moments. The effects of crises on companies' activities have undoubtedly attracted the interest of academia in recent decades (Brenčić et al., 2012; Lisboa, 2016; Mbeteh et al., 2020).

## Web appendix A

Table 1: List of questions used in Study 1.

| Question | Wording   |
|----------|---|
| 1        | To what extent do you think the COVID-19 crisis has changed your purchasing behavior? Please give an example.   |
| 2        | To what extent have you postponed the purchase of certain products/services due to the COVID-19 crisis? What type of products/services?                                     |
| 3        | What are the different motivations for which you postponed the purchase of these products/services?   |
| 4        | To what extent have you increased the purchase of certain products/services due to the COVID-19 crisis? What type of products/services?                                     |
| 5        | What are the different motivations for which you increased the purchase of these products/services?   |
| 6        | Of all the information and news related to the COVID-19 crisis, what has most influenced the way you buy?   |
| 7        | To what extent have the contents of and news from media and social networks, whether true or false, changed your perception of the COVID-19 crisis? Please give an example. |

## Web appendix B

Table 1 Profile of participants of the Study 1

| Participant | Age   | Country | Gender | Household income   | Household size | Occupancy     | Impact | Perception |
|-------------|-------|---------|--------|--------------------|----------------|---------------|--------|------------|
| 1           | 51-60 | Spain   | Female | €36.000 - €59.999  | 3              | Self-employed | High   | Mild       |
| 2           | 41-50 | Spain   | Female | >€120.000          | 4              | Employed      | High   | Negative   |
| 3           | >70   | Spain   | Male   | €36.000 - €59.999  | 2              | Retired       | High   | Mild       |
| 4           | 51-60 | Spain   | Male   | €60.000 - €119.000 | 2              | Employed      | High   | Mild       |
| 5           | 61-70 | Spain   | Male   | €12.000 - €23.999  | 2              | Employed      | High   | Negative   |
| 6           | 51-60 | Spain   | Male   | €36.000 - €59.999  | 5              | Employed      | High   | Negative   |
| 7           | 51-60 | Spain   | Female | €60.000 - €119.000 | >5             | Home care     | High   | Negative   |
| 8           | 51-60 | Perú    | Female | €36.000 - €59.999  | 4              | Self-employed | Low    | Negative   |
| 9           | 41-50 | Perú    | Female | €36.000 - €59.999  | 5              | Employed      | Low    | Negative   |
| 10          | 41-50 | Spain   | Female | €12.000 - €23.999  | 3              | Employed      | High   | Mild       |
| 11          | 41-50 | UK      | Female | >€120.000          | 3              | Employed      | Low    | Negative   |
| 12          | >70   | Spain   | Male   | €36.000 - €59.999  | 2              | Retired       | High   | Negative   |
| 13          | >70   | Spain   | Male   | >€120.000          | 3              | Self-employed | High   | Negative   |
| 14          | 31-40 | Spain   | Female | €60.000 - €119.000 | >5             | Unemployed    | High   | Negative   |
| 15          | >70   | Spain   | Female | €12.000 - €23.999  | 1              | Retired       | High   | Negative   |
| 16          | 61-70 | Spain   | Male   | €60.000 - €119.000 | 2              | Self-employed | High   | Negative   |
| 17          | 41-50 | Spain   | Male   | <€12.000           | 1              | Employed      | High   | Mild       |
| 18          | 41-50 | Spain   | Female | €60.000 - €119.000 | 4              | Employed      | High   | Negative   |
| 19          | >70   | Spain   | Male   | €24.000 - €35.999  | 2              | Retired       | High   | Mild       |
| 20          | 61-70 | Spain   | Male   | €24.000 - €35.999  | 3              | Retired       | High   | Negative   |
| 21          | 31-40 | Spain   | Female | €36.000 - €59.999  | 1              | Employed      | High   | Negative   |
| 22          | 61-70 | Spain   | Male   | >€120.000          | 4              | Employed      | High   | Mild       |
| 23          | 61-70 | Spain   | Male   | €60.000 - €119.000 | 2              | Retired       | High   | Mild       |
| 25          | >70   | Spain   | Male   | €24.000 - €35.999  | 3              | Retired       | High   | Negative   |
| 26          | >70   | Spain   | Male   | €36.000 - €59.999  | 2              | Retired       | High   | Mild       |
| 27          | 31-40 | France  | Female | €60.000 - €119.000 | 4              | Employed      | High   | Negative   |
| 28          | 31-40 | Chile   | Male   | €36.000 - €59.999  | 2              | Employed      | Low    | Negative   |
| 29          | >70   | Spain   | Female | €60.000 - €119.000 | 2              | Retired       | High   | Negative   |
| 30          | 41-50 | Spain   | Female | >€120.000          | >5             | Self-employed | High   | Negative   |
| 31          | >70   | Spain   | Male   | €60.000 - €119.000 | 2              | Retired       | High   | Negative   |
| 32          | 41-50 | Spain   | Female | €60.000 - €119.000 | 1              | Self-employed | High   | Mild       |
| 33          | 41-50 | Spain   | Female | >€120.000          | 5              | Employed      | High   | Negative   |
| 34          | 41-50 | Spain   | Male   | €60.000 - €119.000 | 5              | Employed      | High   | Negative   |
| 35          | 51-60 | Spain   | Male   | >€120.000          | 3              | Employed      | High   | Negative   |
| 36          | 41-50 | Spain   | Male   | €36.000 - €59.999  | 3              | Self-employed | High   | Negative   |
| 37          | 41-50 | Spain   | Male   | >€120.000          | 1              | Employed      | High   | Negative   |
| 38          | 15-20 | UK      | Female | €36.000 - €59.999  | 5              | Student       | Low    | Negative   |
| 39          | 41-50 | Spain   | Male   | >€120.000          | 4              | Employed      | High   | Negative   |
| 40          | 31-40 | Chile   | Male   | €36.000 - €59.999  | 2              | Employed      | Low    | Negative   |
| 41          | 51-60 | US      | Female | >€120.000          | 2              | Self-employed | Low    | Negative   |
| 42          | 21-30 | Perú    | Male   | €24.000 - €35.999  | 1              | Employed      | Low    | Negative   |
| 43          | 51-60 | Spain   | Female | €36.000 - €59.999  | 2              | Employed      | High   | Negative   |
| 44          | >70   | Spain   | Male   | €36.000 - €59.999  | 2              | Retired       | High   | Negative   |
| 45          | 51-60 | Spain   | Male   | >€120.000          | 4              | Self-employed | High   | Negative   |
| 46          | 41-50 | Spain   | Male   | €60.000 - €119.000 | 5              | Employed      | High   | Mild       |
| 47          | 61-70 | Spain   | Female | >€120.000          | 2              | Employed      | High   | Negative   |
| 48          | 31-40 | Spain   | Male   | >€120.000          | 4              | Employed      | High   | Negative   |
| 49          | 61-70 | Spain   | Female | €24.000 - €35.999  | 2              | Retired       | High   | Mild       |
| 50          | 31-40 | France  | Male   | €60.000 - €119.000 | 1              | Employed      | High   | Negative   |
| 51          | 31-40 | France  | Male   | €24.000 - €35.999  | 2              | Employed      | High   | Negative   |
| 52          | 41-50 | Spain   | Female | €60.000 - €119.000 | 4              | Employed      | High   | Mild       |
| 53          | 41-50 | Spain   | Male   | >€120.000          | 4              | Employed      | High   | Negative   |
| 54          | 41-50 | Spain   | Female | €24.000 - €35.999  | 2              | Employed      | High   | Mild       |
| 55          | 21-30 | Chile   | Female | €12.000 - €23.999  | 2              | Self-employed | Low    | Negative   |
| 56          | 31-40 | UK      | Female | €36.000 - €59.999  | 3              | Employed      | Low    | Negative   |
| 57          | 41-50 | Perú    | Female | €36.000 - €59.999  | 5              | Employed      | Low    | Negative   |
| 58          | 51-60 | US      | Male   | €60.000 - €119.000 | 1              | Self-employed | Low    | Mild       |

| Participant | Age   | Country | Gender | Household income   | Household size | Occupancy     | Impact | Perception |
|-------------|-------|---------|--------|--------------------|----------------|---------------|--------|------------|
| 59          | 31-40 | Perú    | Female | €12.000 - €23.999  | 2              | Employed      | Low    | Negative   |
| 60          | 31-40 | Perú    | Female | €12.000 - €23.999  | 2              | Employed      | Low    | Negative   |
| 61          | 21-30 | UK      | Male   | €12.000 - €23.999  | 1              | Employed      | Low    | Mild       |
| 62          | 31-40 | France  | Male   | €24.000 - €35.999  | 2              | Employed      | High   | Negative   |
| 63          | 41-50 | Germany | Male   | >€120.000          | 5              | Employed      | High   | Negative   |
| 64          | 31-40 | Andorra | Male   | >€120.000          | 5              | Self-employed | High   | Mild       |
| 65          | 21-30 | Spain   | Male   | €60.000 - €119.000 | 5              | Student       | High   | Negative   |
| 66          | 21-30 | Spain   | Female | <€12.000           | 1              | Student       | High   | Negative   |
| 67          | 21-30 | Spain   | Female | €36.000 - €59.999  | 4              | Student       | High   | Negative   |
| 68          | 21-30 | Spain   | Female | €36.000 - €59.999  | 3              | Student       | High   | Negative   |
| 69          | 21-30 | Perú    | Male   | €60.000 - €119.000 | 5              | Student       | Low    | Negative   |
| 70          | 21-30 | Spain   | Female | <€12.000           | 2              | Student       | High   | Negative   |
| 71          | 21-30 | Spain   | Male   | €24.000 - €35.999  | 2              | Student       | High   | Negative   |
| 72          | 21-30 | Spain   | Male   | <€12.000           | 2              | Student       | High   | Mild       |
| 73          | 21-30 | Spain   | Male   | €24.000 - €35.999  | 4              | Student       | High   | Mild       |
| 74          | 41-50 | Spain   | Male   | €60.000 - €119.000 | 3              | Employed      | High   | Negative   |
| 75          | 51-60 | Spain   | Male   | >€120.000          | 4              | Self-employed | High   | Negative   |

## Web appendix C

### Survey items

1. Please, assess your purchasing experience during the COVID-19 crisis according to the following factors:

- P1\_1\_Fun
- P1\_2\_Exciting
- P1\_3\_Delightful
- P1\_4\_Thrilling
- P1\_5\_Enjoyable
- P1\_6\_Effective
- P1\_7\_Helpful
- P1\_8\_Functional
- P1\_9\_Necessary
- P1\_10\_Practical

2. Please, assess the following sentences according to your purchasing motivation during the COVID19 crisis:

- P2\_1\_If everyone else is purchasing in a certain manner, this must be the proper way to purchase.
- P2\_2\_When I have been uncertain about my purchasing behaviour, I have looked to the behaviour of others for cues.
- P2\_3\_I have purchased the same products that others have purchased.
- P2\_4\_I have purchased the same quantities that others have purchased.
- P2\_5\_I have purchased at the same places that others have purchased.
- P2\_6\_It is important for me to follow a purchasing behaviour similar to that of others.

3. Please, assess the level of influence of the following factors on your purchasing behaviour:

- P3\_1\_Confinement.
- P3\_2\_Contagion risk.
- P3\_3\_Shortage of supplies.
- P3\_4\_Crisis duration.
- P3\_5\_Personal economic perspective.

4. Please, assess in general how relevant the following aspects related to the COVID-19 crisis are for you:

- P4\_1\_Confinement measures.
- P4\_2\_Dimension of the breakout.
- P4\_3\_Economic impact.
- P4\_4\_Social impact.
- P4\_5\_Risk of infection.
- P4\_6\_Government actions.
- P4\_7\_Mass media news credibility.
- P4\_8\_Social networks news credibility.

5. Please, assess the amount of news that you have received and read through mass media (television, paper or online newspapers and radio) about the following topics related to the COVID-19 crisis:

- P5\_1\_Confinement measures.
- P5\_2\_Government decisions.
- P5\_3\_Economic impact.
- P5\_4\_Information from other affected countries.
- P5\_5\_Behaviour of people.
- P5\_6\_Scientific data about the disease and virus.
- P5\_7\_Shortage of supplies in stores.
- P5\_8\_Fake news.

6. Please, assess the amount of news that you have received and read through social media (Whatsapp, Twitter, Instagram, Facebook, etc.) about the following topics related to the COVID-19 crisis:

- P6\_1\_Confinement measures.
- P6\_2\_Government decisions.
- P6\_3\_Economic impact.
- P6\_4\_Information from other affected countries.
- P6\_5\_Behaviour of people.
- P6\_6\_Scientific data about the disease and virus.
- P6\_7\_Shortage of supplies in stores.
- P6\_8\_Fake news.

7. Please, asses which products from the following list you have bought more/less quantities of compared to the quantity you used to buy (either it was big or small amount) due to COVID-19 crisis:

- P7\_1\_Food and non-alcoholic drinks.
- P7\_2\_Alcoholic drinks.
- P7\_3\_Gourmet products or delicatessen.
- P7\_4\_Personal care.
- P7\_5\_Cosmetics and perfumes.
- P7\_6\_Medicines.
- P7\_7\_Cleaning products.
- P7\_8\_Home entertainment and online educational courses.
- P7\_9\_Utilities.
- P7\_10\_Consumer electronics.
- P7\_11\_Home appliances.
- P7\_12\_Clothes and fashion accessories.
- P7\_13\_Travelling and transport.
- P7\_14\_Leisure services, like restaurants and cinemas.

8. Demographics

- Gender: 1=Male; 0=Female.
- Age:

- 15-20 years
- 21-30 years
- 31-40 years
- 41-50 years
- 51-60 years
- 61-70 years
- Over 70 years

- Country of residence (short answer)
- Occupation:

- Student
- Home care
- Self-employed
- Employed
- Unemployed
- Retired

- How many people live in your household (including you)?
- Household gross income (in euros) including all income from those members that live together:

- Less than €12.000 annually



- Between €12.000 and €23.999 annually
- Between €24.000 and €35.999 annually
- Between €36.000 and €59.999 annually
- Between €60.000 and €119.999 annually
- €120.000 annually or more

- Have you been infected by the coronavirus?: 1=Yes; 0=No.
- Has any member of your household been infected by the coronavirus?: 1=Yes; 0=No.

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