

**FUNDAÇÃO GETULIO VARGAS  
ESCOLA BRASILEIRA DE ADMINISTRAÇÃO PÚBLICA E  
DE EMPRESAS  
MESTRADO EM GESTÃO EMPRESARIAL**



**CAN BRAZILIAN CONSUMERS FORESEE THEIR  
FUTURE BEHAVIOR DURING THE PANDEMIC?**

DISSERTAÇÃO APRESENTADA À ESCOLA BRASILEIRA DE ADMINISTRAÇÃO  
PÚBLICA E DE EMPRESAS PARA OBTENÇÃO DO GRAU DE MESTRE

**WIVIANY FERREIRA DE OLIVEIRA**  
Rio de Janeiro - 2021



## **Acknowledgements**

To my adviser Eduardo Bittencourt Andrade, for all his guidance, teachings, and support in this work and for fulfilling my desire to understand and in the future work with consumer behavior.

To Yan for helping me so much during this process, for teaching me how to use STATA, without this it would not have been possible to reach the conclusions of my dissertation.

To all the Professors with whom I had the chance to learn during my time at EBAPE.

To all my friends, for hearing my anxieties. Thanks for making this journey lighter and more enjoyable.

To all my family members, who have always supported and encouraged me in my decisions. In special to my brother Aguinaldo who always encouraged me to study. I couldn't forget to thank my mother who taught me how to be a strong and determined woman. To my sister Wal for taking such good care of me and teaching me to be a loving and respectful person.

To Sergio for having had patience in my anxious moments and in my absence at certain times, for always believing in me even when I doubted. You are the best thing that could have happened to me.

## **Abstrato**

**Objetivo** - O objetivo deste estudo é examinar se as mudanças no comportamento do consumidor provocadas pela pandemia da COVID-19 são permanentes e se os consumidores podem fazer previsões sobre seus padrões de consumo futuro.

**Design/Metodologia** - A presente dissertação aplicou uma pesquisa longitudinal. Na Fase 1, antes da disponibilidade da vacina, a frequência dos comportamentos de consumo (em dezembro de 2020) foi analisada em um questionário e junto com estas perguntas, os participantes também indicaram suas previsões de comportamento futuro após a disponibilidade das vacinas. Na fase 2, em maio de 2021, inspecionamos se as previsões dos consumidores eram precisas, através da reaplicação do questionário.

**Conclusões** - Os resultados mostram que os consumidores podem prever com precisão o comportamento futuro em relação às compras de alimentos com base em aplicativos e compras de roupas on-line. Apesar da ausência de significância estatística, os participantes estavam errados sobre a direção de seu comportamento futuro em termos de consumo de álcool e compras de supermercado on-line. O único comportamento em relação ao qual os participantes estavam evidentemente errados foi relacionado a atividades físicas. Quando se trata de tal comportamento, suas expectativas sobre o futuro excederam claramente suas ações.

**Limitações da pesquisa** - As principais limitações do estudo se referem à dependência do comportamento auto relatado em vez do comportamento real, ao pequeno tamanho da amostra no tempo 2 (n=46) em relação ao tempo 1 (n=149), e ao fato de que a pandemia ainda estava em curso durante nosso período "pós-vacinação".

**Implicações práticas** - A pesquisa produziu insights valiosos sobre se os consumidores são capazes de prever o comportamento futuro, o que é central para a pesquisa de marketing. Ao fazer isso, também oferece informações relevantes sobre como as estratégias de marketing podem interferir no comportamento do consumidor.

**Palavras-chave:** Comportamento do consumidor; Predição; Pandemia da COVID-19; Expectativa; Compras on-line; Hábitos permanentes, Previsão.

**Categoria:** Tese de mestrado.

## **Abstract**

**Objective** - The objective of the study is to examine if the changes in consumer behavior brought about by the COVID-19 pandemic are permanent and if consumers can make predictions about their future consumption patterns.

**Design/Methodology** - The present dissertation applied a longitudinal survey. In Phase 1, before the availability of the vaccine, the frequency of consumption behaviors (in December 2020) was analyzed in a questionnaire and, alongside these questions, participants also indicated their predictions of future behavior after vaccines become available. In phase 2, in May 2021, we inspected if the consumers' predictions were accurate, through the reapplication of the questionnaire.

**Findings** - The results show that consumers can accurately predict future behavior regarding app-based food shopping and online clothing shopping. Despite the absence of statistical significance, participants were wrong about the direction of their future behavior in terms of alcohol consumption and online grocery shopping. Critically, the only behavior that participants were blatantly wrong about was related to physical activities. When it comes to such behavior, their expectations about the future clearly exceeded their actions.

**Research limitations** – The study's main limitations refer to reliance of self-reported behavior rather than actual behavior, the small sample size at time 2 (n=46) relative to time 1 (n=149), and the fact that the pandemic was still underway during our “post-vaccination” period.

**Practical implications** - The research produced valuable insights on whether consumers are able to predict future behavior, which is central to marketing research. In doing so, it also offers relevant information about how marketing strategies can interfere in consumer behavior.

**Keywords:** Consumer behavior; Prediction; COVID-19 pandemic; Expectation; Online shopping; Permanent habits, Forecast.

**Category:** Master thesis.

Dados Internacionais de Catalogação na Publicação (CIP)

Ficha catalográfica elaborada pelo Sistema de Bibliotecas/FGV

Oliveira, Wiviany Ferreira de

Can brazilian consumers foresee their future behavior during the pandemic? /  
Wiviany Ferreira de Oliveira. – 2021.

39 f.

Dissertação (mestrado) - Escola Brasileira de Administração Pública e  
de Empresas, Centro de Formação Acadêmica e Pesquisa.

Orientador: Eduardo B. Andrade.

Inclui bibliografia.

1. Comportamento do consumidor – Brasil. 2. Consumidores – Atitudes.  
3. Covid-19 (Doença) – Aspectos sociais. 4. Comércio eletrônico. I. Andrade,  
Eduardo Bittencourt. II. Escola Brasileira de Administração Pública e de Em-  
presas. Centro de Formação Acadêmica e Pesquisa. III. Título.

CDD – 658.8342

Elaborada por Márcia Nunes Bacha – CRB

7/4403

**FUNDAÇÃO GETULIO VARGAS  
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**DATA DA DEFESA: 23/07/2021**

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## INTRODUCTION

As COVID-19 transformed the world, the consequences of the pandemic affected the population in many forms, especially when it comes to consumer behavior. People's routines have changed in various ways, whether related to work, spare time, or socialization amidst restrictions and social distancing rules. Working from home, homeschooling, videoconferences, and online shopping are just a few examples of activities that dramatically changed during this period.

Several scientific papers and consultancy work investigated the impact of the COVID-19 pandemic on consumer behavior, in Brazil and elsewhere. For example, in a study about food-related habits during the COVID-19 pandemic, Ellison, McFadden, Rickard and Wilson, (2020) documented interesting changes in people's eating behaviors. Results from March to April 2020 revealed a reduction in eating-out expenditures (e.g., restaurants or cafeterias) and, on the other hand, an increase in expenditures on online food ordering, mostly because of the restrictions and social distancing rules. But the lockdown and related preventive measures are not the sole forces guiding change among consumers. The fear of getting contaminated in stores is also an important issue. According to Szymkowiak, Gaczek, Jeganathan, and Kulawik (2020), perceptions about the risk of infection in commercial settings negatively affects the consumers' pleasure while shopping. In a similar vein, Sheth (2020) wondered how the pandemic and the ensuing social distancing policies have affected buying habits of consumers. In addition, the author broached the possibility that these changes may perpetuate in the post-pandemic scenario.

Although much is known about how consumer behavior has momentarily changed as a result of the pandemic, little is known about the extent to which these changes are lasting and on whether consumers can foresee them.

To address this issue, we conducted a two-phase longitudinal survey. In Phase 1, conducted in December 2020 (before vaccine availability), participants were asked to report their current consumption behaviors (e.g., "how often have you ordered food online in the past 30 days?") and to predict what this target behavior would look like once vaccines are available (e.g., "how often will you order food online 'after the pandemic' that is, after vaccines are made available?). In phase 2, the same participants were once again approached and asked about their current behavior.

Due to the theoretical challenges associated with setting specific hypotheses for each type of behavioral forecast, we used the inductive approach (Michalski, 1983). Thus, the main goal of this dissertation is to explore how consumers expect their post-vaccination behavior will be, and how accurate these predictions actually are, in addition to demonstrating how such prognosis can be wrong because of the current scenario. While there is ample evidence that people mispredict future emotions and actions (Andrade and Iyer, 2009; Wilson and Gilbert, 2003), it is particularly important to investigate how predictions relate to actual behavior in times of crisis where uncertainty and threat prevail. The COVID-19 pandemic represents one such scenario, noticeably in the Brazilian context, where the number of cases and deaths reached staggering figures. From a practical perspective, this research offers insights to marketers as to whether consumers are able to adequately indicate their future consumption habits. After all, if consumers are unable to make accurate predictions about their own behaviors, market researchers may have to consider alternative ways of exploring (and anticipating) tendencies in consumer behavior.

## **LITERATURE REVIEW**

### **CONSUMER BEHAVIOR DURING THE COVID-19 PANDEMIC**

Consumer behavior can be defined as “the dynamic interaction of affect and cognition, behavior, and the environment by which human beings conduct the exchange aspects of their lives” (The American Marketing Association, 1995). It is a continued process that varies across time, cultures, and events (Solomon, Bamossy, Askegaard and Hoog, 2006).

Over the life course, consumers develop their own needs and desires according to the social environment they are embedded in, which are often manifested in their feelings and decisions. Indeed, both transient and enduring external influences have proven largely influential in consumer behavior (Goldstein, Cialdini, and Griskevicius, 2008; Griskevicius, Ackerman, Cantú et al. 2013; McFerran, Dahl, Fitzsimons and Morales, 2010).

The COVID-19 pandemic inflicted unprecedented health threats and dramatically changed the course of life during 2020. Given the uncertainty associated with the future and the risks posed by the coronavirus, the pandemic also affected consumer behavior in important ways (for a review, see Campbell, Inman, Kirmani and Price, 2020). In order to prevent the spread of the coronavirus, governments imposed some restrictive rules, such as the total or partial closure of business and services, which increased online consumption and, on the other hand, decreased in-person activities (Pantano, Pizzi, Scarpi and Dennis, 2020). Food shopping is of the aspects that changed the most, with a sharp increase in delivery services and a reduction in eating-out habits (Ellison, et al., 2020).

These changes are not limited to where/how consumers make their purchases; the pandemic also affected what consumers value and buy. Precisely, consumers now tend to purchase items that may help them cope with the many changes imposed by the pandemic (e.g., working from home). Thus, food, drinks, clothes, technological devices, furniture are just a few of the aspect's consumers became more attuned to when deciding what to buy (Abdulrahman and Viktor, 2020, p. 296). This is the reason why we choose as our dependable variables purchases such as online food ordering, online clothes shopping, online

supermarket and the intake of alcohol (Ellison, et al., 2020; Chodkiewicz, Talarowska, Miniszewska, Nawrocka, and Bilinski, 2020; Koch, Frommeyer, and Schewe, 2020).

But beyond these more intuitive shifts in consumption habits, psychological effects linked to uncertainty imposed by the pandemic also affected consumer behavior in curious ways. For instance, the sense of product scarcity, which is known for enhancing consumption (Hamilton, Thompson, Bone, Chaplin, Giskevicius, Goldsmith and Zhu, 2019), led several people to buy a massive and unnecessary number of products (e.g., toilet papers), causing a feeling of crisis in the beginning of the pandemic (Tsao, Raj and Yu 2019). Also, anxiety connected to the fear of becoming infected within a store, diminished the consumer's willingness to get out of their houses, altogether changing decision-making format, and affecting in-store pleasure during shopping (Szymkowiak, Gaczek, Jeganathan and Kulawik, 2020).

One of the first measures to reduce contamination was the implementation of lockdown or similar policies, but because of vaccination expansion, restrictions are starting to ease up in many regions of the world. However, it is still unclear whether the changes that have recently redefined the lives of billions of people are fleeting or enduring (Kirk and Rifkin, 2020). Despite being able to return to their normal lives after herd immunity due to widespread vaccination is reached, can consumers accurately predict how they will behave in the face of the changes and uncertainty imposed by the COVID-19 pandemic?

## CAN CONSUMERS ACCURATELY PREDICT FUTURE FEELINGS AND BEHAVIORS?

When purchasing services or goods, consumers often make predictions about how the consumption under consideration will make them feel or how they will behave. But given the uncertainty about events occurring in the future, these predictions are often inaccurate (Carroll, Fuhrer and Wilcox, 1994; Solomon, 2016; Mittelman, Gonçalves and Andrade, 2020; Kupor and Laurin, 2020; Dunn, Brackett, Ashton-James, Schneiderman, and Salovey, 2007). For instance, gym goers often mispredict how often they will exercise and, as a result, choose suboptimal gym membership contracts (DellaVigna and Malmendier, 2006). Consistent evidence of this misprediction has shown two simultaneous dimensions: the

projection of habit formation and the naive present-biased (Acland and Levy, 2015). Therefore, reasoned action and planned behavior contribute to the understanding of exercising intentions, but not to the prediction of exercising behavior (Godin, Valois and Lepage, 1993).

A parallel issue involves predictions about future consumption (Andrade and Iyer, 2009; Wilson and Gilbert, 2003)—which is slightly different from using predictions about future feelings and behaviors to inform current consumption. Indeed, consumers not only predict how current consumption will affect them in the future but also how they will manage consumption over the life course. Despite the importance of such predictions for personal planning, predicting future consumption is a particularly complex task, as it involves a myriad of events and ensuing feelings that are not readily clear at the time of judgement.

Because future events and personal states are uncertain, consumers tend to rely on current expectations to form impressions about prospective consumption behaviors (Oliver and Winer, 1987). For instance, when consumers are optimistic about the outlook for the economy, they give upbeat responses about upcoming events (Carroll, et al., 1994). In contrast, post-pandemic behavior depends on decisions that go beyond reason, as they consider greater experiences and negative emotions (Larsen, McGraw and Cacioppo, 2001).

As these examples illustrate, although individual differences in people's abilities to predict future emotions and behaviors may exist (Dunn, et al., 2007), people tend to extrapolate current states to future events (Lerner and Gonzalez, 2005) which often begets overestimation or underestimation, depending on the context (Dunning, Loewenstein and Van Boven, 2003; Ashton-James, Brackett, Dunn, Salovey and Schneiderman, 2006).

The COVID-19 pandemic is a particularly interesting context to investigate whether people are able to accurately predict future consumption. This scenario engendered a high degree of uncertainty about the future of the healthcare system, the economy, and social isolation policies (Kirk and Rifkin, 2020). Also, the widespread and pervasive threat imposed by the virus induced a generalized anxiety in the population and gave rise to particularly negative prospects about the future (Wilson and Gilbert, 2003). Finally, although the COVID-19 pandemic imposed numerous changes in personal habits, it is not clear where they came to stay or if they are just transitory reactions to an unprecedented event in modern society.

Previous work has suggested that research involving multiple points in time is especially valuable as it facilitates the analysis of persistent effects on beliefs and expectations (D’Acunto, Tuan, Dalli, Viglia and Okumus, 2020; Bu, Hanspal, Liao, and Liu, 2020; Fancourt, Steptoe, and Bu, 2020). We adopt this approach to investigate whether people are indeed able to accurately predict future consumption habits in a context where uncertainty and threat prevail.

## **METHOD**

The participants were recruited via social media and through personal contacts, and, as a thank you note, invited to take part in a voucher lottery of R\$250. The survey was conducted among Brazilian participants in two waves. The first round of data collection took place between December 1st and December 15, 2020, where 159 individuals (56.4% females; Mage = 39.0, SD = 13.1) provided valid responses to the survey (10 were eliminated due to incomplete responses). The second round of data collection took place between April 27 and May 18, 2021 where 46 individuals from the initial sample responded also to this follow-up survey (69.6% females; Mage = 40.3, SD = 11.3).

### FIRST WAVE OF DATA COLLECTION

After agreeing to the terms and conditions of the survey, participants were asked to answer about shopping and consumption habits in the past 30 days, and to foresee the same answers in a post-pandemic scenario—which is defined as a period of vaccine availability. Five types of consumption behavior were examined: online shopping for food, clothes, grocery, alcoholic beverages consumption and exercises routine. In terms of current behavior, the question was: “during the past 30 days, how many times have you ordered food online/bought clothes online/ordered grocery online/consumed alcoholic beverages and exercised (walks, runs, gym, pilates, sports, etc.)? Around \_\_\_\_ times.” In terms of future behavior, the question was: “After the pandemic (that is, after vaccination), how many times in a month do you think you will order food online/buy clothes online/order grocery online/consume alcoholic beverages and do exercises (walks, runs, gym, pilates, sports, etc.)? Around \_\_\_\_ Times”. Responses to these questions were assessed in a scale ranging from 0 (none) to 30 (30 or more).

After completing the questions, which served as our main dependent variables, participants completed a socio-demographic questionnaire in which they indicated their age, gender, number of residents per household (1 = 1 person, 4 = over 5 people), monthly family income (1 = R\$1000 to R\$2000, 4 = more than R\$10000), political-ideological orientation (1 = left, 3 = center, 5 = right) and location of residence (city). Participants also indicated their intention to get vaccinated: “when the vaccine is available, do you intend to get the vaccine?”



Participants were dismissed after completing the questionnaire. See appendix for more details on the survey instrument and descriptive statistics.

## SECOND WAVE OF DATA COLLECTION

In the second wave, participants were recruited from the contact information provided in the first wave. After agreeing to the terms and conditions of the survey, respondents used the same scale (from 0 (none) to 30 (30 or more times)) to indicate how often in the past 30 days they had [ordered food online/ bought clothes online/ ordered grocery online/ consumed alcoholic beverages /and exercised (walks, runs, gym, pilates, sports, etc.)]. The question allowed the comparison of expectations of future behavior in the first wave with actual behavior in the second wave.

Following the questions, participants completed a sociodemographic questionnaire identical to the one used in the first wave. Participants also indicated whether they had already been vaccinated (no; yes, but only the first dose and yes, both doses) and whether they intended to get vaccinated (yes, no, I don't know).

Participants were dismissed after completing the questionnaire. See appendix for more details on the survey instrument and descriptive statistics.

## RESULTS

### *Predictions: Behavior at T1 versus Expected Behavior at T2*

We started the data analysis by comparing behavior performed during the first wave and future behavior expectations for each of the five reported behaviors. The results of the paired t-tests are described in Table 1. As illustrated in the table, people believed they would consume less food online ( $M_{\text{food-Behavior T1}} = 7.04$  vs.  $M_{\text{food-Expectation T2}} = 4.71$ ;  $t = 3.59$ ;  $p = 0.008$ ) and they would exercise more ( $M_{\text{Exercise-Behavior T1}} = 11.17$  vs.  $M_{\text{Exercise-Expectation T2}} = 17.34$ ;  $t = -4.54$ ;  $p < 0.001$ ). However, they expected to not behave differently in terms of alcoholic beverages consumption ( $M_{\text{Alcohol-behavior T1}} = 6.26$  vs.  $M_{\text{Alcohol-Expectation T2}} = 7.02$ ;  $t = 0.88$ ;  $p = 0.37$ ), online clothing shopping ( $M_{\text{Clothes-Behavior T1}} = 0.86$  vs.  $M_{\text{Clothes-Expectation T1}} =$

1.06;  $t = 0.85$ ;  $p = 0.39$ ), and online grocery shopping ( $M_{\text{Supermarket-Behavior T1}} = 0.86$  vs.  $M_{\text{Supermarket-Expectation T1}} = 0.76$ ;  $t = 0.69$ ;  $p = 0.68$ ).

Table 1: Behaviors and Expectations in Time 1 and Time 2

Variable	Mean	SD	P-Value
<b>Food Online</b>			<b>Food Online</b>
Behavior at T1	7.04	7.71	T1 vs. Expected at T2: $p = 0.0008$
Expected Behavior at T2	4.71	5.69	Expected at T2 vs. T2: $p = 0.2128$
Behavior at T2	5.67	5.67	T1 vs. T2: $p = 0.1505$
<b>Supermarket Online</b>			<b>Supermarket Online</b>
Behavior at T1	.76	1.68	T1 vs. Expected at T2: $p = 0.6850$
Expected Behavior at T2	.69	1.44	Expected at T2 vs. T2: $p = 0.5034$
Behavior at T2	.97	2.72	T1 vs. T2: $p = 0.6838$
<b>Clothes Online</b>			<b>Clothes Online</b>
Behavior at T1	.86	1.29	T1 vs. Expected at T2: $p = 0.3989$
Expected Behavior at T2	1.06	1.78	Expected at T2 vs. T2: $p = 0.8408$
Behavior at T2	.97	2.27	T1 vs. T2: $p = 0.7429$
<b>Alcohol Consumption</b>			<b>Alcohol Consumption</b>
Behavior at T1	6.26	8.19	T1 vs. Expected at T2: $p = 0.3787$
Expected Behavior at T2	7.02	8.60	Expected at T2 vs. T2: $p = 0.1378$
Behavior at T2	5.17	7.87	T1 vs. T2: $p = 0.2828$
<b>Exercises</b>			<b>Exercises</b>
Behavior at T1	11.17	9.87	T1 vs. Expected at T2: $p < 0.001$
Expected Behavior at T2	17.34	9.52	Expected at T2 vs. T2: $p < 0.001$
Behavior at T2	9.34	9.97	T1 vs. T2: $p = 0.1141$

*Accuracy of Predictions: Expected Behavior at T2 versus Behavior at T2.*

Future behavior expectations reported in the first data collection were compared to the actual behaviors from the respondents, as reported in the second data collection. The analysis allows the understanding of whether participants had accurate predictions about their future behavior. The results of the paired  $t$  tests are reported in Table 1.

Participants exercised less than expected ( $M_{\text{Exercise-ExpectationT1}} = 17.34$  vs.  $M_{\text{Exercise-BehaviorT2}} = 9.34$ ;  $t = 5.28$ ;  $p = 0.00$ ). There is also some indication, though not statistically significant that they drank less than expected ( $M_{\text{Alcohol-ExpectationT1}} = 7.02$  vs.  $M_{\text{Alcohol-BehaviorT2}} = 5.17$ ;  $t = 1.51$ ;  $p = 0.13$ ). However, the expectations about online food ordering ( $M_{\text{Food-ExpectationT1}} = 4.71$  vs.  $M_{\text{Food-BehaviorT2}} = 5.67$ ;  $t = -1.26$ ;  $p = 0.21$ ), online clothing purchases ( $M_{\text{Clothes-ExpectationT1}} = 0.86$  vs.  $M_{\text{Clothes-BehaviorT2}} = 1.06$ ;  $t = 0.20$ ;  $p = 0.84$ ) and online grocery shopping ( $M_{\text{Supermarket-ExpectationT1}} = 0.69$  vs.  $M_{\text{Supermarket-BehaviorT2}} = 0.97$ ;  $t = -0.67$ ;  $p = 0.50$ ) were accurate.

### *Behavior in T1 versus Behavior in T2.*

At last, the differences in behavior reported at T1 with behavior reported at T2 were detected using paired t-tests. As shown in table 1, people seem to reduce the purchase of food online ( $M_{\text{Food-Behavior T1}} = 7.04$  vs.  $M_{\text{Food-Behavior T2}} = 5.67$ ;  $t = 1.46$ ;  $p = 0.15$ ) and practice less exercises ( $M_{\text{Exercise-Behavior T1}} = 11.17$  vs.  $M_{\text{Exercise-Behavior T2}} = 9.34$ ;  $t = 1.16$ ;  $p = 0.11$ ). Though the differences were not statistically significant, it possibly resulted from lack of power due to a relatively small sample size and high variance. However, they continued to consume alcoholic beverages ( $M_{\text{Alcohol-Behavior T2}} = 6.26$  vs.  $M_{\text{Alcohol-Behavior T2}} = 5.17$ ;  $t = 1.08$ ;  $p = 0.28$ ), shopping clothes online ( $M_{\text{Clothes-Behavior T1}} = 0.86$  vs.  $M_{\text{Clothes-Behavior T2}} = 0.97$ ;  $t = -0.33$ ;  $p = 0.74$ ) and ordering grocery online ( $M_{\text{Supermarket-Behavior T1}} = 0.76$  vs.  $M_{\text{Supermarket-Behavior T2}} = 0.97$ ;  $t = -0.48$ ;  $p = 0.68$ ) at the same rate as before.

Therefore, for some behaviors, participants could accurately predict their expected behavior after vaccination started. They were correct about the direction and the intensity of the effect. However, two exceptions are worth noting. First, participants overestimated how much they would exercise. They expected to increase the amount of exercise but ended up exercising significantly less after vaccination started. Second, for alcohol consumption and online shopping in supermarket, the difference in means between prediction and actual behavior were not statistically different but participants were inaccurate about the direction of the effect. For alcohol consumption, they predicted to consume more, but ended consuming less. For online shopping in supermarkets, they expected to use it less, but ended up to using online shopping more.

## **GENERAL DISCUSSION**

The COVID-19 pandemic has changed habits all around the world, including the consumer behavior (Ivkovic, 2021; Ellison, et al., 2020; Cox, Ganong, Noel, Vavra, Wong, Farrell and Deadman, 2020; Sheth, 2020; Kirk and Rifkin, 2020; Hashem, 2020). However very little is known about whether such changes will be enduring or fleeting. Most importantly, very little is known about whether consumers are able to accurately indicate the answer to this question. The present study addresses these existing gaps in literature.

We conducted a two-wave survey to compare consumer expectations and behaviors in a pre-pandemic and post-pandemic period (i.e., before and after vaccine availability). This method allowed for a comparison of how consumers expected vaccination would influence future or actual behavior. Our results revealed that respondents adequately predicted several behaviors (food online, online grocery shopping, online clothes shop, and alcoholic beverages consumption), except for exercising practice, which respondents' estimations surpassed the behavior performed after the vaccine. Nonetheless, respondents were also mistaken about the direction of the effect for online grocery shopping. They expected they would do less but ended up increasing relative to their expectations, and also relative to behavior in T1. For the consumption of alcoholic beverages consumers expected an increase in consumption but ended up consuming less at T2 relative to the behavior during first wave of data collection.

## PRATICAL AND THEORETICAL IMPLICATIONS

The present research has theoretical and marketing implications. From a theoretical perspective, the study contributed to the preexisting literature on future behavior expectations (Warshaw, and Davis, 1985; Andrade and Iyer, 2009; Wilson and Gilbert, 2003; Ben-David, I., Femand, Kuhnen, and Li, 2018) by analyzing how expectations and behavior are related in an uncertain context: the COVID-19 pandemic in Brazil. Despite the current scenario, consumers demonstrated accurate predictions. The only behavior that diverged was exercise practicing, in which consumers overestimated the practice of physical activity (DellaVigna and Malmendier 2006).

The results are consistent with the idea that people seem to overestimate socially desirable behaviors or behaviors that contribute to their well-being. In fact, for the other

behaviors, consumers adequately indicated future behavior. Regarding physical activities, the estimates were far above the behavior reported, possibly because consumers desire to improve their health status in the future.

Another interesting issue is the absence of heterogeneity in the predictions. As reported in Table A2 in the appendix, people from different social groups (gender, age, income, and political orientation) showed similar differences in the analysis of Expectation versus Behavior. These results are inconsistent with the systematic differences in people's ability to predict future situations (Dunn, et al., 2007).

The study also sheds light on a question regarding the pandemic: are changes brought about by the COVID-19 pandemic permanent or do they simply reflect a temporary phenomenon? Although important, there is little research on how COVID-19 has affected consumer behavior (Ivkovic, 2021; Ellison, et al., 2020; Cox, et al., 2020; Sheth, 2020; Kirk and Rifkin, 2020; Hashem, 2020). This research offers initial evidence that changes seem to be permanent, given the similar behavior analyzed in the first and the second waves.

The current study also provided valuable insights for marketing practitioners by showing that consumers can indeed predict future behavior. As market research revolves around people's ability to predict behavior in certain situations, the study reveals a promising way to get information from consumers. In addition, we showed that most trends accelerated by apps during the pandemic (online food ordering and grocery shopping) seem to be relatively enduring and may shape market trends, at least in a short-term.

## LIMITATIONS AND FUTURE RESEARCH

The small sample size represents a relevant limitation (i.e., 46 participants) of this research. As future behavior predictions statistically translate into the difference between expectation and behavior, a survey with a larger sample can determine whether the results are related to people's predictive capacity or the low statistical power of our analyses. Also, since our question regarding family income did not discriminate among those who make more than R\$ 10.000,00, it is not possible to assess the impact of income among consumers of higher socio-economic status. Further, our survey asks participants to answer what was their consumption behavior in the last 30 days. Given that memory tends to fade rather

quickly, this could be a problem. It would have been easier for them to remember what they did last week (Roy, Christenfeld, and McKenzie, 2005).

Another interesting aspect to consider is why consumers incorrectly predict future behavior only for physical activities. One possibility is that people overestimate future behaviors that are socially desirable. In addition, our data collection may have been imprecise by the closing of gyms during the pandemic. Along the same lines, the survey asks participants to answer what their behavior would be “after the pandemic (that is, after vaccination)”. Unfortunately, during the second wave of data collection the pandemic was still ongoing. Vaccination had indeed started but economic activities were still not at pre-pandemic levels. A large part of the population was not vaccinated at the time of collection, according to national vaccination plan, which may be responsible, for example, for the absence of differences in the behavior observed in the first collection compared to the behavior observed in the second collection. Future research may investigate consumer behavior when the pandemic is indeed over.

## CONCLUSION

In the months following the COVID-19 pandemic, we have seen several contents undeniably relevant to the subject (Ellison, et al., 2020; Szymkowiak, et al., 2020; Sheth, 2020; Andrade, Vietes e Ramos, 2020; Tsao et al., 2019; Prentice, Quach, Thaichon, 2020; Pantano, et al., 2020; Vargo, Zhu, Benwell, Yan, 2021).

Food purchase and the decision to buy were habits that changed the most, in part because of technology, as it brought security in the fear of contamination (Vargo, Zhu, Benwell, and Yan, 2021; Chenarides, Grebitus, Lusk, and Printezis, 2021; Caso, Guidetti, Capasso, and Cavazza, 2021). And as post-pandemic behaviors depend on decisions beyond rational. Since experiences, feelings and positive or negative emotions are considered, predictions can be underestimated or overestimated, depending on the moment and scenario in which people meet and how purchase processes develop. In conclusion, the study identified how consumers expect post-pandemic (or post-vaccination) behavior to be and how adequate predictions were, demonstrating that despite current uncertainties, consumers have relatively accurate perceptions about future behavior.

## **Appendix**

CONSENTIMENTO INFORMADO: Você está sendo convidado(a) a participar da pesquisa intitulada “Compra e consumo durante a pandemia”, desenvolvida por Wiviany



Oliveira. Que será utilizada como material para o desenvolvimento da dissertação de mestrado na FGV/EBAPE. Este estudo tem por objetivo entender melhor o comportamento dos consumidores de compra e consumo durante a pandemia.

Após a conclusão do estudo, você poderá fornecer o seu e-mail ou outro contato para concorrer a um sorteio de um vale-compras da Amazon no valor de R\$ 250,00 (duzentos e cinquenta reais).

Sua participação não é obrigatória. A qualquer momento, você poderá desistir de participar e retirar seu consentimento. Sua recusa, desistência ou retirada de consentimento não prejudicará a pesquisa de nenhuma forma.

Não há riscos significativos de qualquer tipo relacionado à sua participação nesta pesquisa sobre seus hábitos e consumo durante a pandemia. Ao final dessas perguntas, você deverá preencher também algumas questões sócio demográficas.

O estudo leva de 5 minutos para ser concluído. Os dados obtidos por meio desta pesquisa serão confidenciais e não serão divulgados em nível individual, visando assegurar o sigilo de sua participação.

A pesquisadora responsável se comprometeu a tornar públicos nos meios acadêmicos e científicos os resultados obtidos de forma consolidada sem qualquer identificação de indivíduos participantes.

Ao clicar no botão abaixo, declaro que entendi os objetivos, riscos e benefícios de minha participação na pesquisa, e que concordo em participar.

Sua participação não gerará nenhum tipo de despesa.

A sua participação nesta pesquisa consistirá em responder algumas perguntas bastante ampla.

Este estudo faz parte da minha dissertação de Mestrado da FGV-EBAPE. Estou interessada em saber mais sobre o comportamento de compra e consumo das pessoas durante e após a pandemia. Sua ajuda, como consumidor(a), será, portanto, de extrema valia.

O questionário leva em torno 5 minutos para ser preenchido. Qualquer dúvida, por favor, fique à vontade para entrar em contato comigo por e-mail ([wivianyoliveira@gmail.com](mailto:wivianyoliveira@gmail.com))

Muito obrigada!

Depois de completar o questionário deixe o seu e-mail, ou Instagram, ou Facebook ou

celular (a informação que você sentir mais confortável em fornecer) para concorrer a um vale compras da Amazon de R\$ 250.00.\*

\* Todas as informações fornecidas neste questionário são sigilosas não podendo ser fornecida a terceiros e utilizadas somente para caráter de pesquisa e para o sorteio.

**Q1** Nos últimos 30 dias, quantas vezes você pediu comida por aplicativo?

**Q2** Após a pandemia (ou seja, após a vacina), quantas vezes no mês você acha que pedirá comida por aplicativo?

**Q3** Nos últimos 30 dias, quantas vezes você comprou roupas online?

**Q4** Após a pandemia (ou seja, após a vacina), quantas vezes no mês você acha que comprará roupas online?

**Q5** Nos últimos 30 dias, quantas vezes você fez compras de supermercado online?

**Q6** Após a pandemia (ou seja, após a vacina), quantas vezes no mês você acha que fará compras de supermercado online?

**Q7** Nos últimos 30 dias, quantas vezes você consumiu bebidas alcoólicas?

**Q8** Após a pandemia (ou seja, após a vacina), quantas vezes no mês você acha que consumirá bebidas alcoólicas?

**Q9** Nos últimos 30 dias, quantas vezes você fez exercícios físicos (caminhadas, corridas, academia, pilates, esportes, etc.)?

**Q10** Após a pandemia (ou seja, após a vacina), quantas vezes no mês você acha que fará exercícios físicos (caminhadas, corridas, academia, pilates, esportes, etc.)?

**Q11** Quando a vacina estiver disponível você pretende tomar?

Sim

Não

Talvez

**Q12** Qual é a sua idade?

**Q13** Qual é o seu gênero?

Feminino

Masculino

Prefiro não informar

**Q14** Quantas pessoas moram na mesma casa incluindo você?

1 pessoa

2 pessoas

Entre 3 e 5 pessoas

Mais de 5 pessoas

**Q15** Qual é a renda familiar?

1.000 a 2.000

2.000 a 5.000

5.000 a 10.000

Mais de 10.000

**Q16** Qual é a sua orientação político-ideológica?

De esquerda

De centro-esquerda

De centro

De centro-direita

De direita

**Q17** Em qual estado você mora?

Muito obrigada por participar desse estudo. Por favor, deixe seu contato (e-mail, ou Instagram, ou WhatsApp) para concorrer a um vale compras da Amazon de R\$250,00. Sua privacidade e anonimato serão preservados e seu contato não será compartilhado com ninguém.

### **Segunda Rodada de Coleta de Dados**

Há alguns meses (dezembro de 2020), você participou de um estudo sobre o seu comportamento de compra e consumo durante a pandemia. Agora gostaríamos de verificar seu comportamento após a disponibilidade da vacina. Lembro que este estudo faz parte da minha dissertação de Mestrado da FGV-EBAPE. Sua ajuda, como consumidor(a), será, portanto, de extrema valia. Muito obrigada!

CONSENTIMENTO INFORMADO: Você está sendo convidado(a) a participar da segunda rodada da pesquisa intitulada “Compra e consumo 2 durante a pandemia”, desenvolvida por Wiviany Oliveira. Que será utilizada como material para o desenvolvimento da dissertação de mestrado na FGV/EBAPE. Este estudo tem por objetivo entender melhor o comportamento dos consumidores de compra e consumo durante a pandemia.

Após a conclusão do estudo, você poderá fornecer o seu e-mail ou outro contato para concorrer a um sorteio de três PIX de R\$ 250,00 (duzentos e cinquenta reais) cada\*. Qualquer dúvida, por favor, fique à vontade para entrar em contato comigo por e-mail (wivianyoliveira@gmail.com).

Sua participação não é obrigatória. A qualquer momento, você poderá desistir de participar e retirar seu consentimento. Sua recusa, desistência ou retirada de consentimento não prejudicará a pesquisa de nenhuma forma.

Não há riscos significativos de qualquer tipo relacionado à sua participação nesta pesquisa sobre seus hábitos e consumo durante a pandemia. Ao final dessas perguntas, você deverá preencher também algumas questões sociodemográficas.

O estudo leva cerca de 3 minutos para ser concluído. Os dados obtidos por meio desta pesquisa serão confidenciais e não serão divulgados em nível individual, visando assegurar o sigilo de sua participação.

A pesquisadora responsável se comprometeu a tornar públicos nos meios acadêmicos e científicos os resultados obtidos de forma consolidada sem qualquer identificação de indivíduos participantes.

Ao clicar no botão abaixo, declaro que entendi os objetivos, riscos e benefícios de minha participação na pesquisa, e que concordo em participar.

Sua participação não gerará nenhum tipo de despesa.

A sua participação nesta pesquisa consistirá em responder algumas perguntas bastante amplas.

\* Todas as informações fornecidas neste questionário são sigilosas não podendo ser fornecida a terceiros e utilizadas somente para caráter de pesquisa e para o sorteio.

**Q1** Nos últimos 30 dias, quantas vezes você pediu comida por aplicativo?

**Q2** Nos últimos 30 dias, quantas vezes você comprou roupas online?

**Q3** Nos últimos 30 dias, quantas vezes você fez compras de supermercado online?

**Q4** Nos últimos 30 dias, quantas vezes você consumiu bebidas alcoólicas?

**Q5** Nos últimos 30 dias, quantas vezes você fez exercícios físicos (caminhadas, corridas, academia, pilates, esportes, etc.)

**Q6** Você já se vacinou?

Não

Sim, mas somente a primeira dose

Sim, as duas doses

**Q7** Caso NÃO tenha se vacinado, você pretende se vacinar assim que possível?

Sim

Não

Talvez

**Q8** Qual é a sua idade?

**Q9** Qual é o seu sexo?

Feminino

Masculino

Prefere não dizer

**Q10** Quantas pessoas moram na mesma casa que você incluindo você?

1 pessoa

2 pessoas

Entre 3 e 5 pessoas

Mais de 5 pessoas

**Q11** Qual é a renda familiar?

1.000 a 2.000

2.000 a 5.000

5.000 a 10.000

Mais de 10.000

**Q12** Qual é a sua orientação político-ideológica?

De esquerda

De centro-esquerda

De centro

De centro-direita

De direita

Obrigada pela sua participação, por favor deixe seu contato para o sorteio.

INFORMED CONSENT: You are being invited to participate in the survey entitled “Purchase and consumption during the pandemic”, developed by Wiviany Oliveira. Which will be used as material for the development of the master's thesis at FGV/EBAPE. This study aims to better understand the behavior of consumer purchases and consumption during the pandemic.

Upon completion of the study, you will be able to provide your email or other contact information to be entered into a prize draw for an Amazon gift certificate worth R\$ 250.00 (two hundred and fifty reais).

Your participation is not mandatory. At any time, you can opt out of participating and withdraw your consent. Your refusal, withdrawal or withdrawal of consent will not harm the research in any way.

There are no significant risks of any kind related to your participation in this research and your participation.

s about their habits and consumption during the pandemic. At the end of these questions, you will also have to fill in some socio-demographic questions.

The study takes 5 minutes to complete. The data obtained through this research will be confidential and will not be disclosed on an individual level, in order to ensure the confidentiality of your participation.

The responsible researcher undertook to make public in academic and scientific circles the results obtained in a consolidated manner without any identification of participating

individuals.

By clicking on the button below, I declare that I understand the objectives, risks and benefits of my participation in the survey, and that I agree to participate.

participation will not generate any type of expense.

Your participation in this survey will consist of answering some very broad questions.

This study is part of my Master's thesis at FGV-EBAPE. I'm interested in learning more about people's purchasing and consumption behavior during and after the pandemic. Your help, as a consumer, will therefore be extremely valuable.

The questionnaire takes around 5 minutes to complete. Any questions, please feel free to contact me by email (wivianyoliveira@gmail.com) Thank you very much!

After completing the questionnaire, leave your e-mail, or Instagram, or Facebook or cell phone (the information you feel most comfortable in providing) to win a R\$ 250.00 Amazon voucher. \*

\* All information provided in this questionnaire is confidential and cannot be provided to third parties and used only for research purposes and for the draw.

**Q1** In the last 30 days, how many times did you order food per app?

**Q2** After the pandemic (that is, after vaccination), how many times a month do you think you will order food per app?

**Q3** In the past 30 days, how many times have you shopped for clothes online?

**Q4** After the pandemic (that is, after vaccination), how many times a month do you think you will buy clothes online?

**Q5** In the last 30 days, how many times did you do grocery shopping online?

**Q6** After the pandemic (that is, after vaccination), how many times a month do you think you will shop online for groceries?

**Q7** In the past 30 days, how many times did you drink alcoholic beverages?

**Q8** After the pandemic (that is, after vaccination), how many times a month do you think you will drink alcohol?

**Q9** In the last 30 days, how often did you exercise (walking, jogging, gym, Pilates, sports, etc.)?

**Q10** After the pandemic (that is, after vaccination), how many times a month do you think you will exercise (walking, jogging, gym, Pilates, sports, etc.)?

**Q11** When the vaccine is available, do you intend to take it?

Yes

No

Perhaps

**Q12** What is your age?

**Q13** What is your gender?

Feminine

Male

I prefer not to inform

**Q14** How many people live in the same house including you?

1 person

2 people

Between 3 and 5 people

More than 5 people

**Q15** What is the family income?

1,000 to 2,000

2,000 to 5,000

5,000 to 10,000

More than 10,000

**Q16** What is your political-ideological orientation?

from the left

from center left

center

center right

from the right

**Q17** In which state do you live?



Thank you so much for participating in this study. Please leave your contact details (email, or Instagram, or WhatsApp) to apply for an Amazon voucher worth R\$250.00. Your privacy and anonymity will be preserved, and your contact will not be shared with anyone.

### **Second Wave of Data Collection**

A few months ago (December 2020), you participated in a study on your purchasing and consumption behavior during the pandemic. Now we would like to check your behavior after the vaccine becomes available. I remember that this study is part of my Master's thesis at FGV-EBAPE. Your help, as a consumer, will therefore be extremely valuable. Thank you!

The consent form is the same as the first one from the first wave of data collection

**Q1** In the last 30 days, how many times did you order food per app?

**Q2** In the past 30 days, how many times have you shopped for clothes online?

**Q3** In the past 30 days, how many times have you shopped for clothes online?

**Q4** In the past 30 days, how many times have you shopped online?

**Q5** In the last 30 days, how many times did you drink alcoholic beverages?

**Q6** In the last 30 days, how many times did you exercise (walking, jogging, gym, Pilates, sports, etc.)

**Q7** Have you already been vaccinated?

No

Yes, but only the first dose

Yes, both doses

**Q8** If you have NOT been vaccinated, do you intend to get vaccinated as soon as possible?

Yes

No

I do not know

**Q9** How old are you?

**Q10** What is your gender?

Feminine

Male

Prefer not to say

**Q11** How many people live in the same house as you including you?

1 person

2 people

Between 3 and 5 people

More than 5 people

**Q12** What is the family income?

1,000 to 2,000

2,000 to 5,000

5,000 to 10,000

More than 10,00

**Q13** What is your political-ideological orientation

from the left

from center left

center

center right

from the right

## **Descriptive Statistics in Round 1 and 2**

As summarized in Table A1, 56.3% women responded to the questionnaire in the first wave (n=149). The average age was 39 years and mostly respondents belonged to upper middle class, with an average family income higher than US\$10,000.00 monthly. As for political-ideological orientation, 45.5% respondents identify with center-left and left orientations, while 37.5% define themselves as center-right and right. Finally, 50.3% participants have families of 3 to 5 people and the vast majority (81.2%) intended to get vaccinated.

In the second wave (n=46), the demographic characteristics remained similar, except for the higher proportion of women and the greater intention to get vaccinated among respondents in the second data collection compared to the first one.

**Table A1 Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
<b>Wave 1</b>					
Female	149	0.5637584	0.4975908	0	1
Age	149	39.04698	13.07532	16	73
Income	149	2.986577	0.986302	1	4
Right	149	2.872483	1.434557	1	5
Vaccination Intention	149	0.8120805	0.3919654	0	1
<b>Wave 2</b>					
Female	46	0.6956522	0.4652151	0	1
Age	46	40.32609	11.26855	22	73
Income	46	2.934783	0.9978237	1	4
Right	46	2.565217	1.455292	1	5
Vaccination Intention	46	0.9782609	0.147442	0	1

Note: Female = 1; Income= 1 from 1.000 to 2000 | 2 = 2.000 to 5.000 | 3 = 5.000 to 10.000 and 4 = more than 10.000 | Vaccination Intention: Yes = 1

In table A2, we have performed regressions assuming as dependent variables the five categories of the difference between expectation at moment 1 and actual behavior at moment 2 and demographics as independent variables. Sample characteristics such as sex, age, income and intention to get vaccinated 2 were used as dependent variables. From this table, it is possible to observe that only gender influence the differences between expected and actual behavior, and it was true for food only. Put simply, the level of accuracy in predictions vary little across socio-demographic characteristics.

**Table A2 Expected Behavior at T2 vs. Behavior at T2 by Social Group**

Variables	Difference Expected T2 vs Behavior T2 (Food)	Difference Expected T2 vs Behavior T2 (Clothes)	Difference Expected T2 vs Behavior T2 (Groceries)	Difference Expected T2 vs Behavior T2 (Alcohol)	Difference Expected T2 vs Behavior T2 (Exercise)
Female -5.750	-4.223**	-0.447		-1.037	-1.659
(-1.81)	(-2.75)	(-0.45)		(-1.10)	(-0.60)
Age 0.146	-0.065	-0.018		-0.002	-0.091
(1.11)	(-1.02)	(-0.44)		(-0.07)	(-0.80)
Income 2.316	0.169	0.489		-0.112	0.257
(1.55)	(0.23)	(1.05)		(-0.25)	(0.20)
Right 1.639	-0.937	0.149		0.389	1.040
(1.18)	(-1.92)	(0.48)		(1.30)	
Vaccine Intention2 3.079	1.949	0.620		0.279	-
(-1.31)	(0.40)	(0.20)		(0.09)	(-0.35)
_cons 2.591	6.516	-1.474		0.167	
(0.26)	(1.16)	(-0.41)		(0.05)	
N 46	46	46		46	46
R <sup>2</sup> _a 0.057	0.148	-0.082		-0.045	-
p 0.768	.041	0.901		0.691	

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## References

- Abdulrahman, R., & Viktor, H. L. (2020). *Personalised Recommendation Systems and the Impact of COVID-19: Perspectives, Opportunities and Challenges*. 295–301.
- Acland, D., & Levy, M. R. (2015). Naiveté, projection bias, and habit formation in gym attendance. *Management Science*, 61(1), 146–160.
- Alwin, D. F. (2010). How good is survey measurement? Assessing the reliability and validity of survey measures. *Handbook of Survey Research*, 2, 405–434.
- Andrade, E. B., & Iyer, G. (2009). Planned versus actual betting in sequential gambles. *Journal of Marketing Research*, 46(3), 372–383.
- Bamossy, G. J., & Solomon, M. R. (2016). *Consumer behaviour: A European perspective*. Pearson Education.
- Bates, B. T., Zhang, S., Dufek, J. S., & Chen, F. C. (1996). The effects of sample size and variability on the correlation coefficient. *Medicine and Science in Sports and Exercise*, 28(3), 386–391.
- Ben-David, I., Ferman, E., Kuhnen, C. M., & Li, G. (2018). *Expectations uncertainty and household economic behavior* (No. 0898–2937). National Bureau of Economic Research.
- Blackwell, R. D., Engel, J. F., & Miniard, P. W. (2005). *Comportamento do consumidor*. Pioneira Thomson Learning. <https://books.google.com.br/books?id=qWZOAAAACAAJ>
- Boone, L., Haugh, D., Pain, N., & Salins, V. (2020). Tackling the fallout from COVID-19. *Economics in the Time of COVID-19*, 37.
- Bound, J., Brown, C., & Mathiowetz, N. (2001). Measurement error in survey data. In *Handbook of econometrics* (Vol. 5, pp. 3705–3843). Elsevier.
- Bu, D., Hanspal, T., Liao, Y., & Liu, Y. (2020). Risk taking during a global crisis: Evidence from wuhan. *Covid Economics*, 5, 106–146.

- Campbell, M. C., Inman, J. J., Kirmani, A., & Price, L. L. (2020). *In times of trouble: A framework for understanding consumers' responses to threats*.
- Caso, D., Guidetti, M., Capasso, M., & Cavazza, N. (2021). Finally, the chance to eat healthily: Longitudinal study about food consumption during and after the first COVID-19 lockdown in Italy. *Food Quality and Preference*, 104275.
- Carroll, C. D., Fuhrer, J. C., & Wilcox, D. W. (1994). Does consumer sentiment forecast household spending? If so, why? *The American Economic Review*, 84(5), 1397–1408.
- Chenarides, L., Grebitus, C., Lusk, J. L., & Printezis, I. (2021). Food consumption behavior during the COVID-19 pandemic. *Agribusiness*, 37(1), 44–81.
- Chodkiewicz, J., Talarowska, M., Miniszewska, J., Nawrocka, N., & Bilinski, P. (2020). Alcohol consumption reported during the COVID-19 pandemic: The initial stage. *International Journal of Environmental Research and Public Health*, 17(13), 4677.
- Cox, N., Ganong, P., Noel, P., Vavra, J., Wong, A., Farrell, D., Greig, F., & Deadman, E. (2020). Initial impacts of the pandemic on consumer behavior: Evidence from linked income, spending, and savings data. *Brookings Papers on Economic Activity*, 2020(2), 35–82.
- D'Acunto, D., Tuan, A., Dalli, D., Viglia, G., & Okumus, F. (2020). Do consumers care about CSR in their online reviews? An empirical analysis. *International Journal of Hospitality Management*, 85, 102342.
- DellaVigna, S., & Malmendier, U. (2006). Paying not to go to the gym. *American Economic Review*, 96(3), 694–719.
- Dunn, E. W., Brackett, M. A., Ashton-James, C., Schneiderman, E., & Salovey, P. (2007a). On emotionally intelligent time travel: Individual differences in affective forecasting ability. *Personality and Social Psychology Bulletin*, 33(1), 85–93.

- Dunn, E. W., Brackett, M. A., Ashton-James, C., Schneiderman, E., & Salovey, P. (2007b). On emotionally intelligent time travel: Individual differences in affective forecasting ability. *Personality and Social Psychology Bulletin*, 33(1), 85–93.
- Dzewaltowski, D. A., Noble, J. M., & Shaw, J. M. (1990). Physical activity participation: Social cognitive theory versus the theories of reasoned action and planned behavior. *Journal of Sport and Exercise Psychology*, 12(4), 388–405.
- Ellison, B., McFadden, B., Rickard, B. J., & Wilson, N. L. (n.d.). Examining Food Purchase Behavior and Food Values During the COVID-19 Pandemic. *Applied Economic Perspectives and Policy*.
- Ellison, B., McFadden, B., Rickard, B. J., & Wilson, N. L. (2021). Examining Food Purchase Behavior and Food Values During the COVID-19 Pandemic. *Applied Economic Perspectives and Policy*, 43(1), 58–72.
- Ellison, B., McFadden, B., Rickard, B., & Wilson, N. (2020). Food Loss and Waste in the United States during COVID-19. *CAST Commentary: Economic Impacts of COVID-19 on Food and Agricultural Markets*. Available Online at: [https://www. Castscience. Org/Wpcontent/Uploads/2020/06/QTA2020-3-COVID-Impacts. Pdf](https://www.castscience.org/wpcontent/uploads/2020/06/QTA2020-3-COVID-Impacts.Pdf) (Accessed 7 August 2020).
- Fancourt, D., Steptoe, A., & Bu, F. (2020). Trajectories of depression and anxiety during enforced isolation due to COVID-19: Longitudinal analyses of 59,318 adults in the UK with and without diagnosed mental illness. *MedRxiv*.
- Fowler Jr, F. J., & Fowler, F. J. (1995). *Improving survey questions: Design and evaluation*. Sage.
- Gao, X., Shi, X., Guo, H., & Liu, Y. (2020). To buy or not buy food online: The impact of the COVID-19 epidemic on the adoption of e-commerce in China. *PloS One*, 15(8), e0237900.

- Godin, G., Valois, P., & Lepage, L. (1993). The pattern of influence of perceived behavioral control upon exercising behavior: An application of Ajzen's theory of planned behavior. *Journal of Behavioral Medicine*, 16(1), 81–102.
- Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*, 35(3), 472–482.
- Griskevicius, V., Ackerman, J. M., Cantú, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., Thompson, M. E., & Tybur, J. M. (2013). When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environments. *Psychological Science*, 24(2), 197–205.
- Griskevicius, V., Cialdini, R. B., & Goldstein, N. J. (2008). *Social norms: An underestimated and underemployed lever for managing climate change*. In.
- Hamilton, R., Thompson, D., Bone, S., Chaplin, L. N., Griskevicius, V., Goldsmith, K., Hill, R., John, D. R., Mittal, C., & O'Guinn, T. (2019). The effects of scarcity on consumer decision journeys. *Journal of the Academy of Marketing Science*, 47(3), 532–550.
- Hashem, T. N. (2020). Examining the Influence of COVID 19 Pandemic in Changing Customers' Orientation towards E-Shopping. *Modern Applied Science*, 14(8).
- Ivkovic, N. (2021). BEYOND THE PANDEMIC—A NEW ERA OF CONSUMER BEHAVIOR. *Economic and Social Development: Book of Proceedings*, 6–17.
- Kartajaya, H., Setiawan, I., & Kotler, P. (2018). *Marketing 4.0*. Editorial Almuzara.
- Kirk, C. P., & Rifkin, L. S. (2020). I'll trade you diamonds for toilet paper: Consumer reacting, coping and adapting behaviors in the COVID-19 pandemic. *Journal of Business Research*, 117, 124–131.



- Koch, J., Frommeyer, B., & Schewe, G. (2020). Online shopping motives during the COVID-19 pandemic—Lessons from the crisis. *Sustainability*, 12(24), 10247.
- Kupor, D., & Laurin, K. (2020). Probable cause: The influence of prior probabilities on forecasts and perceptions of magnitude. *Journal of Consumer Research*, 46(5), 833–852.
- Larsen, J. T., McGraw, A. P., & Cacioppo, J. T. (2001). Can people feel happy and sad at the same time? *Journal of Personality and Social Psychology*, 81(4), 684.
- McFerran, B., Dahl, D. W., Fitzsimons, G. J., & Morales, A. C. (2010). I'll have what she's having: Effects of social influence and body type on the food choices of others. *Journal of Consumer Research*, 36(6), 915–929.
- Menon, G., Raghubir, P., & Schwarz, N. (1997). How much will I spend? Factors affecting consumers' estimates of future expense. *Journal of Consumer Psychology*, 6(2), 141–164.
- Michalski, R. S. (1983). A theory and methodology of inductive learning. In *Machine learning* (pp. 83–134). Elsevier.
- Mittelman, M., Gonçalves, D., & Andrade, E. B. (2020). Out of Sight, Out of Mind: Usage Frequency Considerations in Purchase Decisions. *Journal of Consumer Psychology*, 30(4), 652–659.
- Oliver, R. L., & Winer, R. S. (1987). A framework for the formation and structure of consumer expectations: Review and propositions. *Journal of Economic Psychology*, 8(4), 469–499.
- Pantano, E., Pizzi, G., Scarpi, D., & Dennis, C. (2020). Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. *Journal of Business Research*, 116, 209–213.
- Patrick, V. M., MacInnis, D. J., & Park, C. W. (2007). Not as happy as I thought I'd be? Affective misforecasting and product evaluations. *Journal of Consumer Research*, 33(4), 479–489.

- Pereira, B., & Stornelli, J. (2020). *Collective Health versus Individual Freedom: Goal Centrality and Political Identity Shape Covid-19 Prevention Behaviors*.
- Prentice, C., Quach, S., & Thaichon, P. (n.d.). Antecedents and consequences of panic buying: The case of COVID-19. *International Journal of Consumer Studies*.
- Roy, M. M., Christenfeld, N. J., & McKenzie, C. R. (2005). Underestimating the duration of future events: Memory incorrectly used or memory bias? *Psychological Bulletin*, 131(5), 738.
- Sheth, J. (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *Journal of Business Research*, 117, 280–283. <https://doi.org/10.1016/j.jbusres.2020.05.059>
- Solomon, M. R., Bamossy, G., Askegaard, S., Hogg, M., (Ed.). (2006). *Consumer behaviour: A European perspective* (3rd ed). Financial Times/Prentice Hall.
- Solomon, M. R. (2016). *O Comportamento do consumidor-: Comprando, possuindo e sendo*. Bookman Editora.
- Szymkowiak, A., Gaczek, P., Jeganathan, K., & Kulawik, P. (2020). The impact of emotions on shopping behavior during epidemic. What a business can do to protect customers. *Journal of Consumer Behaviour*.
- Tsao, Y.-C., Raj, P. V. R. P., & Yu, V. (2019). Product substitution in different weights and brands considering customer segmentation and panic buying behavior. *Industrial Marketing Management*, 77, 209–220.
- Van Boven, L., Loewenstein, G., & Dunning, D. (2003). Mispredicting the endowment effect: Underestimation of owners' selling prices by buyer's agents. *Journal of Economic Behavior & Organization*, 51(3), 351–365.
- Vargo, D., Zhu, L., Benwell, B., & Yan, Z. (2021). Digital technology use during COVID-19 pandemic: A rapid review. *Human Behavior and Emerging Technologies*, 3(1), 13–24.

- Vieira, V. A. (2003). Reseña de " Comportamento do Consumidor" de ENGEL, James F.; BLACKWELL, Roger D.; MINIARD, Paul W. *Revista de Ciências Da Administração*, 5(10), 1–3.
- Warshaw, P. R., & Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology*, 21(3), 213–228.
- Wilson, T. D., & Gilbert, D. T. (2003). *Affective forecasting*.
- Wilson, T. D., & Gilbert, D. T. (2005). Affective Forecasting: Knowing What to Want. *Current Directions in Psychological Science*, 131–134.