The Effects of the Covid-19 Pandemic on E-Commerce: a Survery on Brazilian Consumer Behavior

Eduardo Ferro dos Santos, Paulo Victor Rodrigues Carvalho and José Orlando Gomes

June 12, 2021

The Effects of the Covid-19 Pandemic on E-Commerce: A Survey on Brazilian Consumer Behavior

Eduardo Ferro dos Santos[1][0000-0002-1212-6714], Paulo Victor Rodrigues de Carvalho[2][0000-0002-9276-8193] and José Orlando Gomes Santos[3][0000-1111-2222-3333]

[1] University of Sao Paulo, School of Engineering of Lorena, Department of Basic and Environmental Sciences, Lorena, SP, Brazil
eduardo.ferro@usp.br
[2] Nuclear Engineering Institute, National Nuclear Energy Commission, Rio de Janeiro, RJ, Brazil
paulov195617@gmail.com
[3] Federal University of Rio de Janeiro, Industrial Engineering & Computer Sciences Program, Rio de Janeiro, RJ, Brazil
joseorlando@nce.ufrj.br

Abstract. Brazil's e-commerce system has changed around insecurity and low-quality delivery, not being efficient and effective. In response to the Covid-19 pandemic, the Brazilian population was forced to leave insecurity and use e-commerce. But are the significant issues resolved? How do people shop online? What does the Brazilian market like when shopping online? In what ways do Brazilians use e-commerce? Has behavior changed? These are the critical aspects of this study. In an online survey of convenience, a probability sample conducted using a snowball method. The survey pointed out that the acceleration of e-commerce shows the urgency to ensure that the country can better use e-commerce to take advantage of the digitalization opportunities and help the government in its economic recovery.

Keywords: Covid-19, E-commerce, Consumer Behavior, Quality in Services

1 Introduction

The Covid-19 has negative impacts on several aspects of society [1]. The research on consumer behavior already describes the extent of consumers and companies [2, 3].

However, in Brazil, e-commerce continues amid insecurity and low quality in deliveries, not being an efficient and effective means. Following the Covid-19 pandemic, the situation forced Brazilian society to put aside its feelings of insecurity and regain its sense of self. Internet shopping, home delivery, among other local services, have become favorable options.

E-commerce encompasses the buying and selling goods and services over the internet by the customer, who is the consumer. Transactions are carried out at retail, serving the company's need, or wholesale, involving bulk purchasing. The e-commerce transaction can be carried out in different ways, in cash or installments, called B2B transactions - Business to Business, B2C - Business to Consumer, and C2C - Consumer to Consumer.

The rapid development of information and communication technologies, the steady growth of Internet users, the increasing number of people that use online shopping, and lower prices than face-to-face are facts that drive e-commerce.

With the potential impacts of the Covid-19 pandemic, uncertainties were established, such as the risk of diminished purchasing power due to the adverse effects of the economy. At the same time, due to the fact related to social distance and lockdown, it can drive the growth of the delivery business.

Due to workers with Covid-19 being absent or being blocked from work by public authorities following the current legislation, production is impacted. Some of the rules decrease the production power and supply for certain products and services.

While these technologies continue to develop, the growth of e-commerce is also accelerating. These factors can contribute to the frustration of the consumer who has made the purchase, who needs the product or service, and who may have to wait for the company to overcome the challenges that they face in the business.

Fundamental questions arise in the face of this scenario: What is the impact of the pandemic on the quality of e-commerce services? How did the Brazilian market reinvent itself? What is the Brazilian's satisfaction with online services, and how does he behave? Can new behaviors be maintained in a new normal? What is the impact of the restrictions imposed by the Covid-19 on consumer behavior and the Brazilian e-commerce market? These are questions that guide this research.

The issues related to Brazil are part of this work since other researchers belonging to the collaboration network in ergonomics of the BRICS countries are precisely applying this research in their countries, with results that will be later integrated.

To better understand the impact of Covid-19 on consumer behavior and the Brazilian online market, important variables including quality, safety, and consumer satisfaction were investigated. An internet survey was conducted to determine the system's effectiveness [4], where several people were able to answer and share their experiences amid the pandemic restrictions when answering an online questionnaire.

This research aims to understand country-specific scenarios that will affect the use of e-commerce in Brazil.

2 Methodology

The research was carried out through the collection of quantitative data over the web. The research method used was the internet-based survey [4] non-probabilistic procedures [5] in a convenience sampling and snowball [6].

This form has the advantages of being able to be developed with low or no cost, applied in a faster and more efficient way, with a readily available sample, fewer rules to follow, and with a better capacity of distinction and analysis of variables due to the use of direct quantitative data can be applied in a larger geographic area.

The main disadvantage is that the return rate is low and tends to be standardized under 10%. It can be explained due to the fear that many people have when clicking on a link that they may not know for fear of containing some malicious file that can steal data or damage the computer and the possibility of saying no without anyone knowing.

It is a cross-sectional survey, as it includes a population section encompassing respondents to an online questionnaire developed on Google Forms. The average time to answer the questionnaire was based on a pilot test with a group of people who responded in an average time of five minutes.

The questionnaire was sent to survey respondents through a link in social networks and contacts of the researchers. The response rate was 41 questionnaire surveys.

At the beginning of the questionnaire, respondents answer whether they intend to spontaneously answer the survey by accepting a free and informed consent term, following the National Research Ethics Commission's ethics protocols in Brazil. Although there is this consent, it is not necessary to identify the respondent.

The elaboration of the questions involved questions from a single questionnaire designed to be used in the BRICS ergonomics network, being adapted in each of the countries. Questionnaires are often used interchangeably in various surveys [7]. The questionnaire was then adapted for use in Brazil with 18 main questions, divided into two sessions. The first session consists of general information such as age, gender, city, state, and occupation. The second session was about preferences, satisfaction, difficulties, and security. The survey was conducted from November to December of 2020.

The research submits variables answered in two scenarios: (1) Before the restrictions imposed by the pandemic, referring to the three months before we entered into social restrictions and closing of trade in general (January, February, and March 2020), and (2) During social and commercial restrictions, which refer to the period after the previous scenario (April to September 2020). The differences are apparent in Brazilian society's behavior when buying more online, but they also pointed out several problems.

3 Results

By examining the interactions between consumer behavior changes resulting from social and commercial restrictions such as those imposed by the pandemic, improvements can be envisaged to be implemented in Brazilian e-commerce. These recommendations can be beneficial, efficient, and practical, generating new markets and a better economy.

The study investigates the audience regarding variables that influence service quality, efficiency, safety, and reliability. The study analyses the top products and the strengths and weaknesses of e-commerce in the region.

Table 1 shows the age group's relationship, emphasizing the two age groups, from 36 to 45 years old with more than half of the respondents (51.2%) and 26 to 35 years old, with 26.8% of the total. The predominance of responses is female, with 68.3% of the total respondents.

Among Brazilian states, 41.5% live in the state of São Paulo, 29.3% in the state of Rio de Janeiro, and 12.2% in the state of Paraná. The rest is distributed among 6 other states. About occupation, 26.8% of the respondents work in providing services, 22% at home, 9.8% are students, and 2.4% work in the industry.

Table 1. Respondents' age group.

Age range	% of total	Cumulative %
26-35 years old	26.8 %	26.8 %
36-45 years old	51.2 %	78.0 %
46-55 years old	9.8 %	87.8 %
56-65 years old	9.8 %	97.6 %
66 years old or more	2.4 %	100.0 %

In terms of shopping preference, 51.2% prefer to shop online and 29.3% in physical stores. For 19.5%, the way to buy is indifferent. By analyzing the data leading to the main reasons for purchasing via the internet, we can see that after the pandemic, most causes increased, except for the low price, which was one of the reasons that decreased after the pandemic.

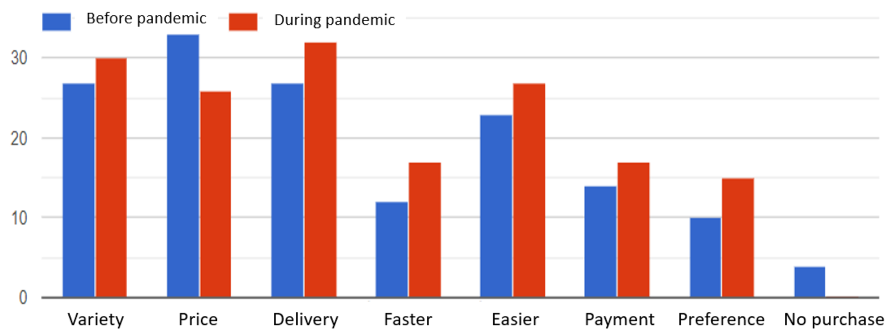

Fig. 1. Top reasons to buy on the internet before and after the pandemic.

Figure 2 shows an increase among those who have already bought online in terms of the frequency of purchases.

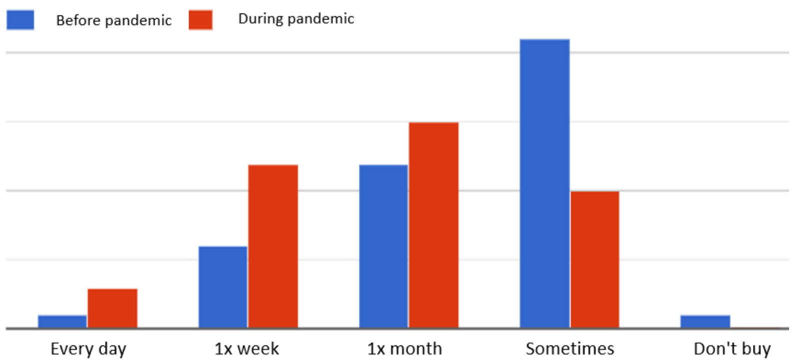

Fig. 2. Frequency of internet shopping before and after the pandemic.

As for the type of products purchased by users on the internet, the buy of electronic products has been down by 3.57% compared to before and after the pandemic. The other products, on the other hand, had an increase, such as 28.5% in shoes, 220% in clothing, 100% in food, 27.2% in medicine, 15% enrollment in digital services, 56.2% in education (courses), and 70% in food and supermarkets.

In terms of satisfaction, the survey showed improvements in product deliveries, with a 25% decrease in late delivery and packaging quality complaints. Besides, there was an improvement of about 20% in the range of products offered by virtual stores and the price. Satisfaction with the service decreased by 20%, exacerbating the pandemic.

Among the main reasons for dissatisfaction, we measure the process of canceling and returning products. Figure 3 shows no relevant situations regarding the problems with which the orders are canceled upon purchases. The number of people who did not experience problems has not changed. The items for compensation and service delays improved in the pandemic. It seems that contact with the company became more difficult, which got worse after the pandemic.

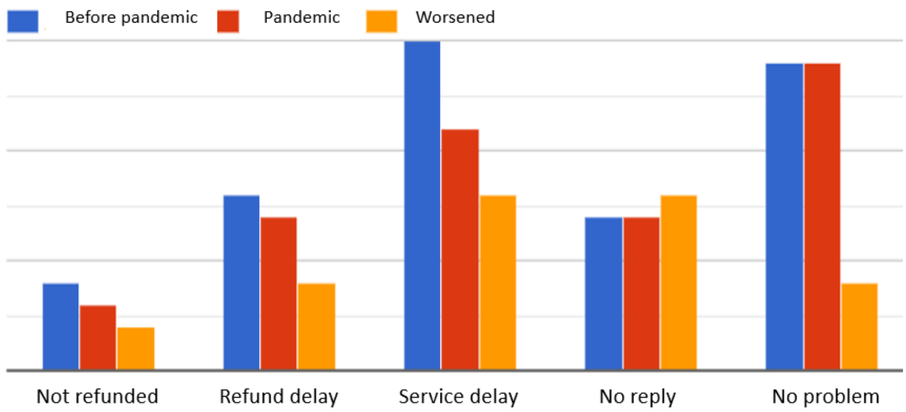

Fig. 3. Problems with purchases before and after the pandemic.

This dissatisfaction also comes from difficulties, in which the respondents claimed an increase of 70% of the products that were not in stock and a price increase of 50% of the items. In terms of payment options, there was an improvement, with more payment options now available.

Even amongst the top companies on the list of companies purchased during the pandemic, Figure 4 shows the word cloud about the responses. Amazon, Americanas, Magalu were the most cited companies.

Fig. 3. Leading companies accessed in the pandemic.

It is noteworthy in the responses that in comparison to the previous period to the pandemic period, the 3 most cited companies were the ones that showed the most growth in accesses. Companies like Aliexpress and those related to the hotel chain (Booking, Hotel Urbano, Hotels.com, Accor Hotels) were the ones that presented the most losses (on average 50% below).

The most secure items for purchases were food, medicine, cleaning products, electronics, and subscriptions to television and internet services. However, they feel insecure when buying clothing in general, perishables, and furniture. When delivering the product, they prefer couriers with adequate personal protection and airtight packaging.

At the end of the survey, it was asked what brings more confidence in purchasing products and services over the internet. 78% answered that they trust more leading brands or sites, a reference in the national or international market, and 22% trust the local market.

4 Discussion

The differences are apparent in Brazilian society's behavior when buying more online, but they also pointed out several problems.

During the pandemic, more than half of the survey respondents reported making online purchases more often and relying more on the internet for news, health-related information, and digital entertainment.

Among the 27 Brazilian states, the survey did not reach 18 states, which leads to the need to expand the databases or change how they are collected in research advances. However, the state of São Paulo is the one with the highest consumption in the country.

The predominance of purchases related to the female gender point to a better cultural context. Females are always the best reference for buying. The marketing needs to be well-targeted to this segment.

The number of people who use e-commerce increases every day. In the survey, the reference of more than half of the respondents (51.2%), added to the indifferent ones (19.5%), shows that the future of business is even e-commerce.

The pandemic increased the options available for a purchase payment, the forms, and the Brazilian frequency of purchases. Investing in customer retention systems is necessary to ensure continuity of indices.

The decrease in the purchase of electronics and the increase in clothing (clothes and shoes) may be linked to this change in profile, where women have the most significant purchasing power in their hands.

E-commerce is related to delivery, and fortunately, this item was not wrong. It must be motivated by the expressive increase of moto boys and delivery services, which are no longer dependent only on the Post Office organization, a Brazilian state-owned company. However, dissatisfaction with the service is a bad sign, which can be related to the teams' lack of preparation for the area's growth.

American companies, Amazon and Magalu, the 4 most cited, point to the return on investment that these companies had already been making, well before the pandemic, in e-commerce. They were already prepared and grew even more in the pandemic, regardless of a possible economic crisis in the population. The hotel industry's decrease is evident, as tourism was one of the main areas affected by the pandemic.

Nowadays, people still trust more in leading brands than in local markets, which grew in the middle of the pandemic but still represent little consumer preference.

5 Conclusion

Although it is a small sample size, it is possible to see that the consequences of the Covid-19 pandemic have changed the Brazilian online shopping behavior.

A peak in Brazilian e-commerce was perceived, mainly due to the purchase of computational resources to establish a home office, home scholar, or even new services. The country's unemployment by the economic crisis resulted from the Covid-19.

Also, some online scammers have increased, and several complaints of customer dissatisfaction have been verified. Some companies were not prepared for an online business, and inexperience contributed to the causes of unfulfilled promises.

Special attention is needed to adapt to companies and consumers so that Brazil can minimize problems and resume the economy with new products and services.

The fact is that the acceleration of online shopping shows the urgency to ensure that Brazil can take advantage of digitalization opportunities as the country goes through its economic recovery. More investment is needed to improve service and regional marketing.

References

1. Atalan, A.: Is the lockdown important to prevent the COVID-19 pandemic? Effects on psychology, environment and economy-perspective. Ann. Med. Surg. 56, 38–42 (2020). https://doi.org/10.1016/j.amsu.2020.06.010.
2. Sheth, J.: Impact of Covid-19 on consumer behavior: Will the old habits return or die? J. Bus. Res. 117, 280–283 (2020). https://doi.org/10.1016/j.jbusres.2020.05.059.
3. Donthu, N., Gustafsson, A.: Effects of COVID-19 on business and research. J.

Bus. Res. 117, 284 (2020). https://doi.org/10.1016/j.jbusres.2020.06.008.
4. Alvarez, R.M., VanBeselaere, C.: Web-Based Survey. In: Kempf-Leonard, K. (ed.) Encyclopedia of Social Measurement. pp. 955–962. Elsevier, New York (2005). https://doi.org/10.1016/B0-12-369398-5/00390-X.
5. Galloway, A.: Non-Probability Sampling. In: Kempf-Leonard, K. (ed.) Encyclopedia of Social Measurement. pp. 859–864. Elsevier, New York (2005). https://doi.org/10.1016/B0-12-369398-5/00382-0.
6. Edgar, T.W., Manz, D.O.: Exploratory Study. In: Edgar, T.W. and Manz, D.O. (eds.) Research Methods for Cyber Security. pp. 95–130. Syngress (2017). https://doi.org/10.1016/B978-0-12-805349-2.00004-2.
7. Toepoel, V., Das, M., Van Soest, A.: Design of Web Questionnaires: The Effects of the Number of Items per Screen. Field Methods. 21, 200–213 (2009). https://doi.org/10.1177/1525822X08330261.