The impact of the COVID-19 pandemic in Brazil's e-commerce: new landscape and consumer trends.

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ABSTRACT

The impact of the COVID-19 pandemic in Brazil's e-commerce: new landscape and consumer trends.

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Covid-19 has been a pivoting point for society. Multiple changes to our lifestyles had to be made to protect ourselves from its dangers. With social distancing and, in more extreme cases, lockdowns, what was observed was an increase in unemployment rates and salary cuts, which directly affected how consumers would prioritize their capital towards goods and services, as well as how they come in contact and consume them. Traffic in electronic commerce (or e-commerce) platforms greatly increased as well as a switch from superfluous to essential goods.

It was found that, Brazil followed much of what was seen around the globe. Its e-consumers felt some financial impact in their lives, being more mindful of what they purchased. They also worried about their health and that of those closer to them, leading them to buy more from pharmacies and fresh produce from supermarkets. The market was inundated with new clients, buying online for the first time. This increased the need for companies to transmit trust when buying. Overall, the pandemic brought on advancements that were already in process, but much sooner than expected, forcing companies to adapt to this new demand.

ABSTRATO

O impacto da pandemia COVID-19 no comércio eletrônico brasileiro: novo cenário e tendências de consumo.

Gustavo Dombrowski Franco

O Covid-19 tem sido um ponto pivotante para a sociedade. Várias mudanças em nosso estilo de vida tiveram que ser feitos para nos proteger de seus perigos. Com o distanciamento social e, em casos mais extremos, *lockdowns*, o que se observou foi um aumento das taxas de desemprego e cortes salariais, que afetou diretamente a forma como os consumidores priorizariam seu capital em bens e serviços, bem como a forma como os entram em contato e os consomem. O tráfego em plataformas de comércio eletrônico (ou e-commerce) aumentou muito, bem como a mudança de bens supérfluos para bens essenciais.

Verificou-se que, o Brasil acompanhou muito do que se viu ao redor do globo. Seus e-consumidores sentiram algum impacto financeiro em suas vidas, estando mais atentos ao que compram. Também se preocuparam com a saúde deles e dos mais próximos, levando-os a comprar mais em farmácias e produtos frescos nos supermercados. O mercado foi inundado com novos clientes, comprando online pela primeira vez. Isso aumentou a necessidade de as empresas transmitirem confiança na hora de comprar. De modo geral, a pandemia trouxe avanços que já estavam em andamento, mas muito antes do esperado, obrigando as empresas a se adaptarem a essa nova demanda.

ACKOWLEDMENT

I want to thank my parents; without them I wouldn’t have had the chance to be where I am and have turned into the man that I am today. They provided me with the opportunity to study in great institutions and carry on their legacy.

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1. Introduction

The world is undergoing one of the most impactful pandemics seen in recent years, Covid-19. The population was forced to adapt rapidly in unexpected ways to ease the virus' transmission. With social distancing and, in more extreme cases, lockdowns, what was observed was an increase in unemployment rates and salary cuts, which directly affected how consumers would prioritize their capital towards goods and services, as well as how they come in contact and consume them. Traffic in electronic commerce (or e-commerce) platforms greatly increased as well as a switch from superfluous to essential goods. While consultancy firms like McKinsey and EY have been doing surveys in several countries as to how consumers are responding to the life altering situation in question, its full effects could only be studied after the fact. Accenture also pointed out that some long-term electronic consumer (or e-consumer) trends have been accelerated, like health-related spending (more healthy foods, personal care products, etc.), conscious consumption (being mindful of what they are spending on), and a growing desire to buy from local producers.

1.1. Research Purpose and Objectives

The purpose of this thesis is to gather and analyze previous studies and data regarding the effects of the pandemic affected the e-commerce landscape in Brazil.

The main objective of the study is to consolidate the existing body of knowledge regarding the effects of the pandemic on Brazilian e-commerce as well as comparing data available to the public corroborating these studies.

1.2. Research Question, Expectations and Main Findings

I expect that, during the period of social-distancing and more aggressive government restriction, consumer will use the Internet as a means for not only entertainment, work and studying, but also to prevent themselves from exposure to a potentially deadly virus. E-commerce is a powerful tool that is relatively easy to access and utilize, resulting in a low barrier of entry for the consumer. Pairing these situations will create a perfect scenario for the expansion of e-commerce throughout the country, transforming it into an indispensable part of people's lives.

In line with the purpose of this research, as well as what are the expectations for this thesis, the primary question to be answered is:

"How did Covid-19 impact e-commerce and e-consumers in Brazil?"

It was found that, Brazil followed much of what was seen around the globe. Its e-consumers felt some financial impact in their lives, being more mindful of what they purchased. They also worried about their health and that of those closer to them, leading them to buy more from pharmacies and fresh produce from supermarkets. The market was inundated with new clients, buying online for the first time. This increased the need for companies to transmit trust when buying. Overall, the pandemic brought on advancements that were already in process, but much sooner than expected, forcing companies to adapt to this new demand.

2. Methodology

This Study presents itself with a descriptive and explanatory research based on a bibliographic review of the current and impacted landscape of Brazilian e-commerce, as well as secondary quantitative data available online, provided by reputable electronic commerce research companies. To try and elucidate the questions brought up in this work, bibliographic and documentary research were used as data collection methods and information from reliable official sources (TATSCH; VOLPATO, 2002). It is also worth considering that biographical research within "a certain historical and sociocultural context is necessarily the limit and the basis on which every researcher transforms factual reality into ideal, that is, makes it the object of scientific investigation based on knowledge and instruments at its disposal" (PIMENTEL, 2001, p. 193-194).

After data collection, two conjunctural situations were constructed for Brazil. One pre-pandemic and one post-pandemic. In the pre-pandemic scenario, it demonstrates the situation of e-commerce before the cut-off point defined as February 26, 2020, the date of official confirmation of the first case in the country. The post-pandemic situation portrays the financial and commercial effects resulting from the increase in cases in the country and the social confinement or self-confinement policies indicated by Brazilian and world health agencies.

As this is a longitudinal study, which is intended to study a process over time and reflect a sequence of facts through this timeline, it is expected to be possible to capture the oscillations in sales and consumer behavior over the last few months.

This methodology was chosen to meet the objectives of this Study, that is, to present the panorama of Brazilian e-commerce and its consumers before and during the Covid-19 pandemic. There is a great amount of information spread across the Internet, from reputable sources, yet a compilation of the behavior seen during the pandemic and its consequences is not widely available.

There is also a need to group a theoretical framework on online consumers and the evolution and current state of the Internet in our country. The literature on the subject, although in growth, is very discreet. Therefore, it is necessary to use real data so that Brazilian e-commerce and its customers can be contextualized.

Among the main advantages of using this type of data collection is the possibility of taking a picture of the market in Brazil and abroad in addition to monitoring the development of this market over the years. One of disadvantages is that it is not possible to deepen the profile of the consumer and understand better psychographic attributes. However, as stated, the purpose of this Study is to present the current body of knowledge surrounding the theme and provide data from respected Brazilian e-commerce institutions that further support the existing research.

Due to Covid-19's novelty, research papers that study its impact on the e-commerce market are still sparce. Google Scholar and the terms "electronic commerce", "e-commerce", "Brazil", "pandemic" and "Covid-19" were used to find the material necessary for the current study. The period was also limited from 2020 onwards since that was the year where the impacts of the pandemic started to take effect. The same method was used for searching for news articles, reports, and surveys from governmental institutions, as well as e-commerce intelligence companies and consulting firms.

3. Current Landscape

3.1. Covid-19

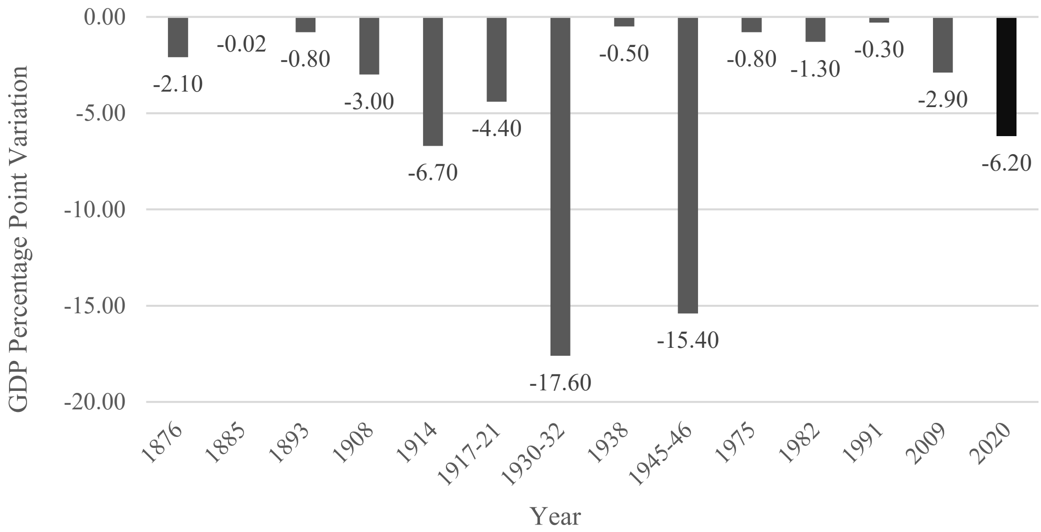
The new Coronavirus or Covid-19, from the family *Coronaviridae*, (SARS-CoV-2), is an infectious disease that has spread rapidly to other regions of the world including Brazil (Satomi et al, 2020). Covid-19 was detected on December 31, 2019 in Wuhan, China. On January 9, 2020, the World Health Organization (WHO) confirmed its circulation, being declared a pandemic on March 11, 2020. (LANA et al, 2020).

Covid-19 is a respiratory disease, which causes sequelae to vital organs in the body such as the lung, in addition to presenting a high degree of contamination. Thus, with the great growth in the number of registered cases of Covid-19, affecting over 60 million people (World Health Organization, 2020) and not forgiving even a single country around the world, governments have been forced to set up lockdown procedures to limit the spread and transmission of the disease, saving as many lives as possible, but directly impacting economic drivers.

A clear financial downturn on a worldwide scale is noticeable, with the March 2020 collapse of stock markets, considered the greatest one-day crash on record for Dow Jones (Mejdrich, 2020). According to the International Monetary Fund (IMF), the Gross Domestic Product (GDP) growth for the world in 2020 is projected to be -4.4%, 1.4 percentage points below its last forecast (IMF, 2020), realized in June. In Brazil, the GDP has seen a shrinkage of -6.5%, the largest in over 120 years (Cucolo, 2020). To put this in perspective, this will be twice as deep a recession as the 2007-09 (Graph 1) global financial crisis and the lowest since World War II (World Bank, 2020).

The effect that COVID-19 had on financial markets was a single facet of the impact the pandemic has had in different countries. Accompanying the latter and following WHO's suggestions, governments began establishing measures to try and control the spread of virus, while the cure was still in development. This response meant that the population would have to follow lockdown and social distancing procedures, making way for a vicious cycle. Companies were also forced to adapt to this situation, which created the perfect condition to establish a "work from home" culture.

Graph 1: Global per Capita GDP Growth during recessions



Source: World Bank (2020)

Brazil's overall adhesion to government-imposed countermeasures, as suggested by the WHO, was of 74.2% (Szwarcwald et al., 2020). However, the economic impact was still present and lead to massive layoffs. According to the Brazilian Institute of Geography and Statistics (IBGE), Brazil lost 13.8 million jobs, reaching an official unemployment rate in Brazil of 14.6% in the quarter ended in August of 2020. This generated scarcity of capital, due to families with no alternatives to generate income and ways to maintain themselves (Komatsu & Menezes-Filho, 2020).

The Brazilian government has tried to curb the advance of an economic recession with a financial aid program that paid the unemployed a 600 BRL monthly wage, yet this support was only enough to cover some of the necessities of the population. This financial strain on households lead to a shift in the prioritization of their consumption habits, generally tending towards basic needs and essential items (Kirk & Rifkin, 2020).

In Brazil, as of January 2021, Covid has killed over 200,000 Brazilians, and infected over 9,000,000. Although the 7-day average for new cases surpasses 50,000 new contaminated, vaccination has already started and over 2,000,000 doses have already been distributed (Our World in Data, 2021).

3.2. E-Commerce

According to Knight and Mann (2010), electronic commerce (or e-commerce) is the purchase or sale of goods or services of any kind over computer network of any kind. These networks may be, but are not restricted to the Internet, an extranet – a private platform that uses Internet technology – or an electronic data interchange (EDI) network. The study of e-commerce can be divided into three topics:

1. Global systemic or international level.
2. State level; or
3. Individual firm/person level.

The first takes into consideration how e-commerce affects relationships between states. The second, how the same affects the business of governments and their relationship between a nation and society (firms and persons). The last, and focus of this dissertation, examines how firms and people interact within themselves.

E-commerce can also be segmented into different categories according to the buyer-seller relationship (Laudon, 2020). Most transactions fall under the Business-to-Business (B2B) category, that is, when there are two or more companies involved. When a company and a government engage in an electronic transaction, we have the Business-to-Government (B2G) category. The Consumer-to-Consumer (C2C) transaction consists of an interaction between two consumers. For this study, we will focus strictly on the Business-to-Consumer (B2C) side of the commerce, meaning the only interactions analyzed will be between a firm and its customers. It is important to highlight that the transaction flows in one direction, from one seller to one buyer.

Until today, the development of e-commerce can be divided into three phases, which hinge on technological innovations to progress, especially regarding the information and communication technologies (ICT) field. The first phase, starting in the 1970s, was restricted to B2B operations between large corporations that established private communication networks (Virtual Area Networks - VANs) and, through EDI and EFT systems (electronic funds transfer), carried out financial transactions and exchanged documents electronically.

In the second phase, initiated in the 1990s, B2C e-commerce blossomed. Technological advancements allowed for the popularization of the internet, the development of increasingly secure online payment systems, computer and telecommunication devices became more accessible, website design improved, and the creation of applications made electronic commerce more attractive to the consumer, such as search and price comparison tools. In the same period, B2B e-commerce also experienced a significant increase. Large corporations began to move part of their private networks to the internet, allowing small and medium enterprises (SMEs) to connect to them electronically. As the Internet replaced or supplemented VANs, an increasing number of small business owners began to transact with large corporations, or with each other, integrating complex supply chains.

Finally, the third phase of e-commerce is still in its initial stage and shows a trend of exponential growth. With the gradual spread of mobile devices (smartphones, tablets, phablets[1], e-readers, etc.) and broadband internet networks, a new modality of online commerce begins to gain density: mobile commerce or m-commerce.

3.2.1. E-commerce around the world

It should be noted that information regarding B2C e-commerce is largely available[2]. However, its measurement encounters practical and methodological impediments. There are few official statistics on the subject, and private methodologies are not always clear, resulting in discrepancies across different sources. An example is the estimates regarding global B2C e-commerce sales figures in 2018, where the United Nations (UN) valued it at US$4.39 trillion, the E-Commerce Foundation at US$2.1 trillion and, according to Statista, US$2.9 trillion. If we take Statista's data into consideration it is possible to see a clear growth tendency throughout the years (Graph 2). These values where driven mainly by the Asia and Oceania regions, with 44% of the total e-commerce turnover and followed by North America and Europe, with 26% and 22% respectively (Ecommerce Foundation, 2019).

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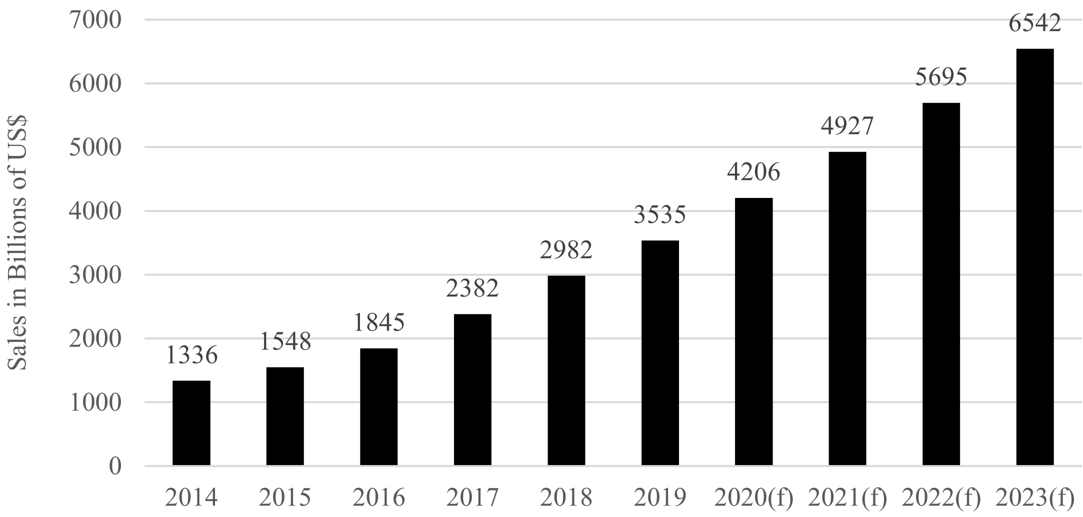
[1] Devices that fuse smartphone and tablet functionalities and have displays larger than 5 inches.

[2] Although B2B e-commerce is the dominant electronic commerce category, information regarding it is not largely available, due to closed capital companies not sharing data. According to a survey conducted by the United Nations Trade and Development Organization (2020), it is estimated that such transactions totaled US$21.2 trillion in 2018, accounting for approximately 83% of all e-commerce.

Graph 2. Yearly Online Retail Sales.



Source: Statista (2020)

As for 2020, Statista and Insider Intelligence's eMarketer assessments aligned, with an estimate growth of 27.6% for the year, totaling $4.2 trillion in electronic commerce sales. The region with the greatest prominence in relation to the development of electronic commerce was, for the first time, Latin America: with an increase of 36.7 percentage points. This growth was mainly due to Argentina, which showed a 79% growth in comparison with 2019.

As to measuring the preparedness of a country for utilizing e-commerce, the UN created an index consisting of four variables that are strongly linked to online shopping and for which there is a large coverage of data through different nations. The degree to which individuals shop online in a country correlate directly to the value of the index (with a high degree of certainty)[3]. The indicators[4] utilized are as follows:

1. Financial institution or mobile-money-service provider account ownership (as a % of the population over 15 years of age).
2. Individuals utilizing the internet (as a % of the population).
3. Postal reliability index (provided by the Universal Postal Union).
4. Secure internet servers (per 1 million people).

[3] Adjusted R squared value of 0.8.

[4] Using data from 2018 or latest available.

This tool allows for an easier comparison between countries and can be utilized to situate a given nation in a ranking, as well as give an overall picture of how countries are progressing to a digital commerce future. Considering the presented index, eight of the top ten countries are in Europe.

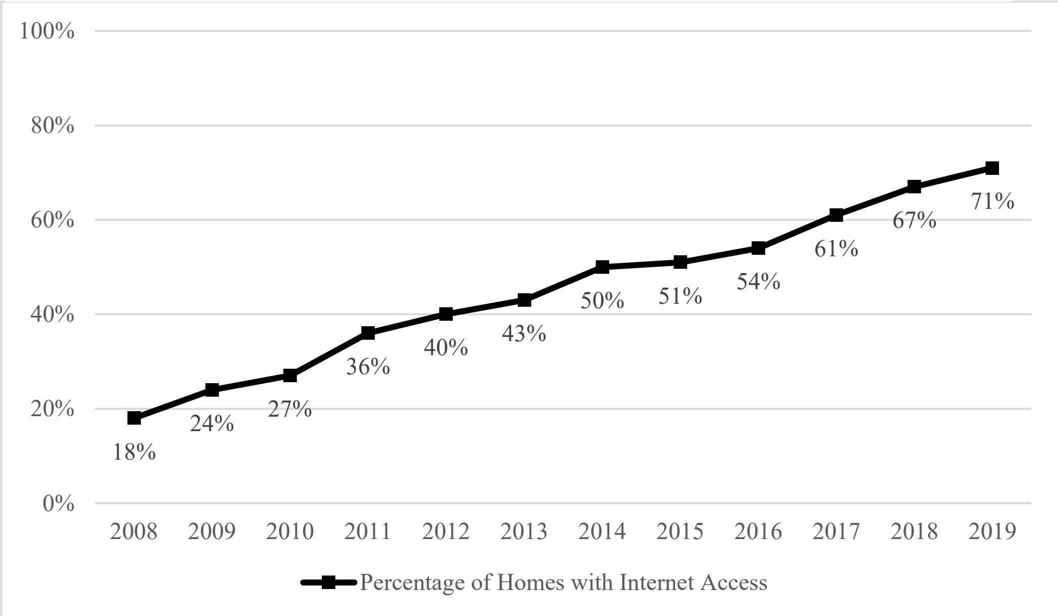
Regarding the overall population (aged 15 and older) that is making online purchases, there was a 9% increase when comparing 2018 to 2017, with around 1.45 billion people doing so. This relates to a quarter of the world population (15 and older).

3.2.2. E-commerce in Brazil

A study by CETIC (Regional Center for Studies on the Development of the Information Society) in 2019, showed that Brazil had about 134 million Internet users, or 74% of the population aged ten or older. Despite the significant increase in users in the past years, mainly due to the increase in lower class access to the internet, one in four people still did not utilize this tool in the country, which represents approximately 47 million non-users. Almost all Brazilian internet users connected to the network through their cell phone (99%), the most used device to access the internet since 2015. Computer access, which was 80% in 2014, has been decreasing, and has come 42% in 2019. This reduction was more accentuated in the case of desktops, going from 54% to 23%. The use of notebook and tablet for access to the network also decreased, but in a less pronounced way: in 2014, 46% of Internet users used laptops and 22% used tablets, proportions that reached, in 2019, 28% and 11%, respectively.

In recent years, the evolution of the connectivity of Brazilian households to the Internet has followed a trend observed worldwide. According to the ITU estimates (2020), the proportion of connected households in the world was 27% in 2008, reaching 57% in 2019. Data from ICT Households 2019 show that the proportion of households with an Internet connection in Brazil was above the world average and that of developing countries (47%), but below the estimate for 2019 among developed countries (87%), as displayed in *Graph 1*. Since 2009, the proportion of connected households in Brazil has grown at an average of 4.3 percentage points per year, well above the world average (2.7), that of developing countries (2.9) and that of developed countries (2.6) (ITU, 2020).

Graph 3. Percentage of homes with internet access in Brazil from 2008 until 2019.



Source: Adapted from CETIC's ICT Households Survey (2019)

The increase in the share of households connected to the network was driven, to a large extent, by the spread of access between classes C (income ranging from 4,180 BRL up to 10,450 BRL) and DE (income up to 4,180 BRL). Since 2015, households in classes A (Income of over 20,900 BRL) and B (Income ranging from 10,450 to 20,900 BRL) have approached the universal access to the Internet (in 2019, 99% and 95%, respectively), while a sharp increase in the proportion of those in classes C and DE connected to the Internet can be noticed. In 2019, for the first time, half of the households considered DE were connected to the World Wide Web. Despite this advance, the pattern of inequality in Internet access in the country persisted: in 2019, the proportion of class A households connected to the network was approximately double of those belonging to the DE classes.

When taking into consideration Brazil’s readiness for fully utilizing electronic commerce, it only lags when considering the reliability of the country’s postal service (Table 1).

Table 1: Brazil's B2C E-commerce index

2019 Rank	Economy	Share of Individuals using the Internet	Share of Individuals with an account	Secure Internet Servers	UPU Postal Reliability Score	2019 Index Value	Index Value Change	2018 Index Rank
74	Brazil	68	70	67	23	56.9	-9.6	60

Source: UNCTAD B2C E-Commerce Index 2019

This is clear when, in the first quarter of 2019, the average wait time for a parcel was of 11.1 days and 12% of the packages were delivered late (Webshoppers, 2019). When compared to United States average shipping times of 2-3 days ("Clutch Logistics Survey", 2019), the lack of confidence in the national postal service is justified. This is a known issue not only for the consumer, but for companies too. To bypass the inconvenience of relying on the country's postal service, businesses have been investing heavily on their own logistics services. In 2020, companies like Amazon and "Mercado Livre" opened distribution center across Brazil, with the goal of reducing lead times, aggregating value to the customer, while circumventing their bottleneck fears regarding local couriers.

The first online stores in Brazil started their activities in the second half of the 1990s. Among them were "Ponto Frio", which launched its e-commerce channel in 1996 and "Submarino" and "Americanas.com", whose websites were launched in 1999. However, it was in the 2000s that the country's e-commerce started to gain density. During this period, the launch of sales sites intensified and mergers and acquisitions took place, forming the main players that exist today: in 2002, "Netshoes" inaugurated its online operations; in 2005, "Americanas.com" acquired "Shoptime", while "Submarino" buys "Ingresso.com" and "Travelweb"; in 2006, "B2W" was formed with the merger of "Americanas.com" and "Submarino"; in 2009, "Grupo Pão de Açúcar" announced the purchase of the parent company of "Ponto Frio" and its merger with "Casas Bahia", whose e-commerce had been launched a year earlier - currently, companies in this group make up "Cnova", a company formed by Nova Pontocom, which centralizes the e-commerce operations of "CasasBahia.com.br", "Pontofrio.com" and "Extra.com.br", and by Casino, which undertakes e-commerce in France, Colombia, Thailand and Vietnam.

According to data from Ebit[5], the growth of e-commerce in 2019, versus 2018, was of 16%, reaching 61.9 billion BRL sold. In 2013, that number was 28.8 billion BRL, less than half of 2019's revenues. In the same year, there were 10.7 million new consumers (9% more than 2018) buying via internet in Brazil, responsible for 17% of all products sold on e-commerce in the year. The total number of online consumers reached 61.8 million, an increase of 6% compared to the previous year.

The total number of orders leapt from 123 to 148 million, or 21% more than 2018. Between 2019 and 2018, growth in the number of orders also happened by sector, as in the case of Clothing and Footwear (13% growth in sales and 30% in number of orders), Sports Articles (26% in sales and 29% in orders) and Department Stores (63% in revenue and 61% on orders) and all these sectors sell clothing and fashion. As for the largest players in the country's e-commerce, the Brazilian Society of Retail and Consumption (SBVC) releases annually a

Table 2: Brazil's Top 10 E-commerce

Company	Segment	Gross Revenue	E-commerce Revenue	% Online Sales/Total Sales
Magazine Luiza	Home Appliances	R$ 24,377,100,000.00	R$ 9,336,429,300.00	38,30%
B2W Digital	Department Store	R$ 8,357,400,000.00	R$ 8,357,400,000.00	100,00%
Via Varejo	Home Appliances	R$ 29,848,000,000.00	R$ 6,088,992,000.00	20,40%
GFG LatAm - Dafiti	Fashion, Footwear and Sporting Goods	R$ 2,500,000,000.00	R$ 2,500,000,000.00	100,00%
Grupo Carrefour Brasil	Supermarkets	R$ 62,220,000,000.00	R$ 1,713,000,000.00	2,75%
Grupo Boticario	Drugstores	R$ 14,900,000,000.00	R$ 1,490,000,000.00	10,00%
Privalia	Fashion, Footwear and Sporting Goods	R$ 1,000,000,000.00	R$ 1,000,000,000.00	100,00%
Madeira	Department Store	R$ 1,000,000,000.00	R$ 1,000,000,000.00	100,00%
Leroy Merlin	Construction	R$ 6,000,000,000.00	R$ 600,000,000.00	10,00%
Centauro	Fashion, Footwear and Sporting Goods	R$ 3,181,875,000.00	R$ 582,283,125.00	18,30%

Source: Adapted from SBVC (2020)

[5] Ebit/Nielsen, Webshoppers 41, 2020 – Ebit (www.ebit.com.br). Ebit has been accompanying the electronic commerce in Brazil since 2000.

comprehensive ranking (Table 2) detailing their segment, revenue, e-commerce revenue, as well as the percentage of e-commerce in total sales.

The largest e-commerce in Brazilian retail is, for the first time, led by a company that was not born online. This shows the growing importance of electronic commerce for the growth and financial health of Brazilian retailers. The national leader in online sales, Magazine Luiza moved 9.336 billion BRL through e-commerce, equivalent to 38.3% of the company's total revenue. If it were an isolated company, “Magalu.com” would be the 13th largest retailer in the country. The second position belongs to “B2W”, which remains the largest 100% online retailer, with gross sales of 8.357 billion BRL. Showing the relevance of e-commerce for the home appliances sector, “Via Varejo” is the third largest online retailer in the country, with 6.088 billion BRL in sales, or 20.4% of its total sales. Next comes “Dafiti”, another 100% online retailer, with 2.5 billion BRL and “Carrefour”, with 1.713 billion BRL. Although it accounts for only 2.75% of the company's total sales, in absolute terms it is already a very relevant number.

Two sectors stand out in the list of the largest Brazilian e-commerce’s in sales: “Home appliances” and “Fashion, Footwear and Sporting Goods”. Representatives of these segments represent half of the 20 largest e-businesses in the country, reflecting the relevance of these sectors in online sales and the primacy of these sectors in omnichannel retail (retail that provides a streamlined and uniform customer experience).

4. Online Consumer Behavior

Traditionally, the consumers' decision process has been described as comprising stages such as awareness of need, getting product information (which includes search for information and assessing alternatives), product purchasing, and post-purchase behavior (Haines et al., 1970; Jansen and Schuster, 2011; Lee and Seda, 2009).

When considering the online shopping process, from a consumer behavior standpoint, there are two key stages in the procedure, beginning when the person enters the website and ends when closing the window or tab, thus leaving the website: gathering product information and purchasing the product (Pavlou and Fygenson, 2006).

The getting information part of the process, which could also be compared to window shopping or browsing, incorporates the behaviors of learning about products specifications and potential alternatives, determining requirements, and gaining knowledge to make well-informed decisions (Gefen, 2002). Product purchasing refers to the procurement of a product by providing consumer information (such as address, product preferences, name of client) and monetary details in exchange for a product (Gefen and Straub, 2000).

The purchase decision by the consumer is influenced by two main factors: speed and ease with which they can encounter the products they are looking for. In the sense that consumers can achieve what they are looking for more quickly, they frequently use the internet, thereby reducing the time to make purchase decisions (Beauchamp and Ponder, 2010).

Online consumption has made it easier to find information about products and compare prices. Before, consumers used to walk the streets in the traditional market in search of their ideal product. This is because shopping centers have come to make people's lives easier by reducing the time to search for product information. The internet followed the same model by gathering all the information in one place. Thus, the consumer started to have all the information you need without leaving the comfort of your home (Duarte, Costa e Silva, & Ferreira, 2018).

Copeland (1923) used, for the first time, the concept of convenience to define a measure of time and effort spent on the purchase of a product by the consumer. Thus, convenience can be defined as the association of time and effort spent in the retail environment, whether physical or online. When the retailer increases the convenience of his services, that is, reduces the time and effort for consumers, he can increase the value of the products he sells on the market (Seiders et al, 2000).

The internet is the best way to reduce the time spent buying and decreases the consumer effort in the product purchase process, therefore it is currently the most appropriate way to increase the convenience of the purchase (Duarte et al., 2018).

E-commerce has already been viewed by consumers with some suspicion, but the wide availability of information available on the internet, as well as the tools for evaluating services and delivering products, have helped to build a segment which has been consolidated over the past twenty years around the world. Through these tools it is possible for the customer to evaluate his shopping experience, being able to carry out an analysis of the organizations through his own experience. With this way of operationalizing their tasks, as well as the client's own production of information and communication, added to the protection of personal data in cyberspace, online sales have gained credibility over the last 15 years in Brazil (Albertin, 2016).

The profile of the online consumer can be influenced by several factors (cultural, social, personal, and psychological), highlighting cultural factors, developed since childhood, socialized, and incorporated into the social class in which these individuals are inserted. Raitz, Aguiar and Godarth (2017) also emphasize the environmental factors (information available linked to the Internet, government regulations, legal impediments that interfere in the environment) and personal factors (age and stage in the life cycle, occupation and economic circumstances, lifestyle, personality, and self-image) as important in the purchase decision. However, Sultan (2002) states that the preference for Internet services is positively associated with income, home size and inclination to innovation, becoming irrelevant when associated with age.

For Raitz, Aguiar and Godarth (2017) social factors also influence consumer behavior (reference groups, family, social roles, and status). Other social variables can also be added to this group, which are also important in online consumer behavior, such as virtual communities, Internet forums and chat rooms (Turban and King 2004 *apud* Martinez 2009). Las Casas (2006), on the other hand, gathers behavior influence variables in two large groups: internal variables (aspects centered on the individuality of the consumer, personality, and lifestyle) and external variables (cultural and social aspects and environmental variables of marketing). Examples of these variables are those related to politics, economics, technology, and others of a socio-environmental nature.

Electronic commerce, as a new form of commercial activity, implies greater uncertainty and risks when compared to traditional purchases (Lee & Turban, 2001). The trust factor is seen as a set of beliefs that deals mainly with the benevolence, competence, and integrity of the other party (Lee et al., 2011). The lack of confidence reduces the chances of consumer involvement in online shopping, as they are not willing to deal with untrustworthy suppliers (Napitupulu & Kartavianus, 2014).

Given the novelty of this worldwide pandemic state, it is extremely difficult to find publications by authors on online shopping and how the market is affected, positively or negatively, with the virus. There are, however, articles such as Susan Meyer's (2020) that says that this virus brought the "panic shopping" phenomenon, which means that consumers are buying products that in reality they do not need but feel the need to acquire quickly to satisfy the three fundamental needs of psychology: autonomy - or the need to feel in control of actions-, kinship, that is, the need to feel that they are doing something to benefit their family members, and competence - the need to feel like smart consumers, making the right decisions -, according to Paul Marsden's interview (consumer psychologist at the University of Arts in London) to Chloe Taylor (2020).

These psychological factors are some of the reasons why "shopping therapy" is an answer to many types of personal crises. However, during the pandemic, this phenomenon worsened at an exponential level (Meyer, 2020).

Covid-19 also has different behavioral consequences depending on the generation of consumers. For example, the "generation Z" and the "Millennials" are among the groups that are changing their consumption patterns in a particular way (Meyer, 2020). A study carried out in the United States of America and the United Kingdom (Carufel, 2020) found that 96% of consumers in these generations are strongly concerned with the effects on the economy, which leads them to behave more focused on increasing essential products stock at home, cut costs significantly and spend much less on experience than older generations (Meyer, 2020).

4.1. Data surrounding electronic consumers

Consulting companies are responsible for a large share of data regarding online consumers around the world. They can survey large amounts of users across the globe, giving us a better view of the e-commerce landscape worldwide.

In KPMG's 2017 "The truth about online consumers", which consisted of over 18.000 correspondents, Generation X (those between 41 and 56 years of age) made more purchases than any other age group, with an average of 19 transactions per year. Despite common belief that the younger and more technologically inclined generation – Millennials (represented by those from 25 to 40 years of age) - where responsible for the increase in online shopping, the previously stated group, made 20% more purchases than them. This is mainly due to the stage in life and income disparities between them. Most of Generation X is already established in their careers and building homes and families, and thus, buying more consumer goods. Baby Boomers (between 57 and 75 years of age), in theory, would be less inclined to online shopping, due to a knowledge gap surrounding online shopping, but the survey demonstrated the opposite. Boomers shopped as frequently as Millennials and spent more per transaction than their two younger counterparts.

When taking gender into consideration, men and women shopped, on average, on equal frequencies. What differs between them was amount spent per transaction. Men spent US$220 versus US$151, for women. This is mainly since male consumers were more likely to buy items in categories that were higher priced, such as luxury goods (55 percent of luxury transactions were by men) or electronics (72 percent of electronics transactions were by men), while women were more likely to buy in lower-priced categories such as cosmetics or food.

PWC's 2019 "Global Consumer Insight" also provides further insight about how consumers interact with online shopping. Up until 2018, personal computers (PCs) have been the "go-to" for e-commerce, with 20% of purchases being made through them. In 2019, this changes, increasing 8% when compared to the previous year (16%) and surpassing PCs as the main technology used for online shopping by 1%. When considering "tablets" as a mobile method of shopping, it easily exceeds the PC category, netting 39% of transactions.

When asked by the UN the top 5 categories of goods and services sold, out of 72 e-commerce companies, 47% responded with "Electronics and IT equipment". In second place, "Fashion and Accessories" with 40% of answers. "Agro-food and beverages" followed, with 39%. Then came "Cosmetics and Personal Care" and "Restaurant and Food Delivery", with 26% and 24% respectively.

4.2. Data surrounding the Brazilian e-consumer

In 2019, the Brazilian National Industry Confederation (CNI), conducted a survey with 2000 participants from 126 municipalities, with the goal of outlining the profile of online consumers in the country. The percentage of Brazilians who have already made purchases over the internet practically doubled between 2013 and 2019, rising from 23% to 42%. Considering only the 78% who usually access the internet at least once a month, this percentage increases to 54%.

This average percentage hides significant differences between age groups and levels of family income. The most significant differences appear when analyzing the range of family income. While 74% of Brazilians with a family income above five minimum wages have already made purchases over the internet, the percentage drops to 59% among those with family income between two and five minimum wages, to 37% among those with a family income between one and two minimum wages and drops to 21% among Brazilians with family income up to a minimum wage.

The distribution by age, in turn, shows that the younger age groups are more prevalent in internet shopping habits: 54% of Brazilians between the ages of 16 and 24 have already made an internet purchase and 56% when the age group is between 25 and 34 years. After this last age group, the percentage decreases: 48% among those aged 35 to 44 years old, 32% among those aged between 45 and 54, and 23% among those aged 55 and over. Among Brazilians who have already shopped for internet at some point in their lives, 20% say they always shop online, another 44% claim that they do it sometimes, and 34% that purchases over the internet are rarely performed. Those who claim that have never shopped online is 3%.

When considering the frequency of internet purchases, the income pattern remains. Brazilians with higher family income not only buy more over the internet, but also the frequency of purchases is greater among them. Considering only those who have already made purchases on the internet at least once in their lives, 34% of those with family income above five minimum wages always shop online, a percentage that falls with income and reaches 9% among those less than a minimum wage.

As for gender, the female audience was responsible for 52% of orders versus 48% for men. Despite buying less, the male audience had a higher average ticket price of 473.60 BRL against the average of 371.70 BRL for women.

When comparing geographic regions, it is possible to note that the Southeast is responsible for most of the orders placed, with 66.2% of purchases made in the national territory. This percentage is partly explained because it is the region that concentrates the population with the highest purchasing power in the country, as well as the highest concentration of the country's population. Although the Northeast still represents 11.9% of sales in e-commerce, it is the region that showed the highest growth (0.4%) in sales in 2019 compared to 2018. Next are the

South (14.1%) and Northeast (11.9%). Finally, the Midwest and the North complete the ranking, with 5.8% and 2% of the total purchases made, respectively.

PWC's 2019 "Global Consumer Insight" Brazil provides information regarding the preferred method of online shopping for Brazilians. The country follows the global trend of preferring PCs over mobile devices. Although the frequency of purchases through smartphones has not surpassed those over PCs, their use has more than tripled since 2013. As of 2019, the frequency with which PCs were used to complete online purchases was of 59%, while smartphones followed closely with 50%.

Ebit's[6] Webshoppers annual report, in partnership with Nielsen[7], using CNAE's (Brazil's National Classification of Economic Activities) market segmentation protocol, helps in identifying key product segments of a closed selection of online retailers. Product categories most shopped for by Brazilians vary greatly year over year.

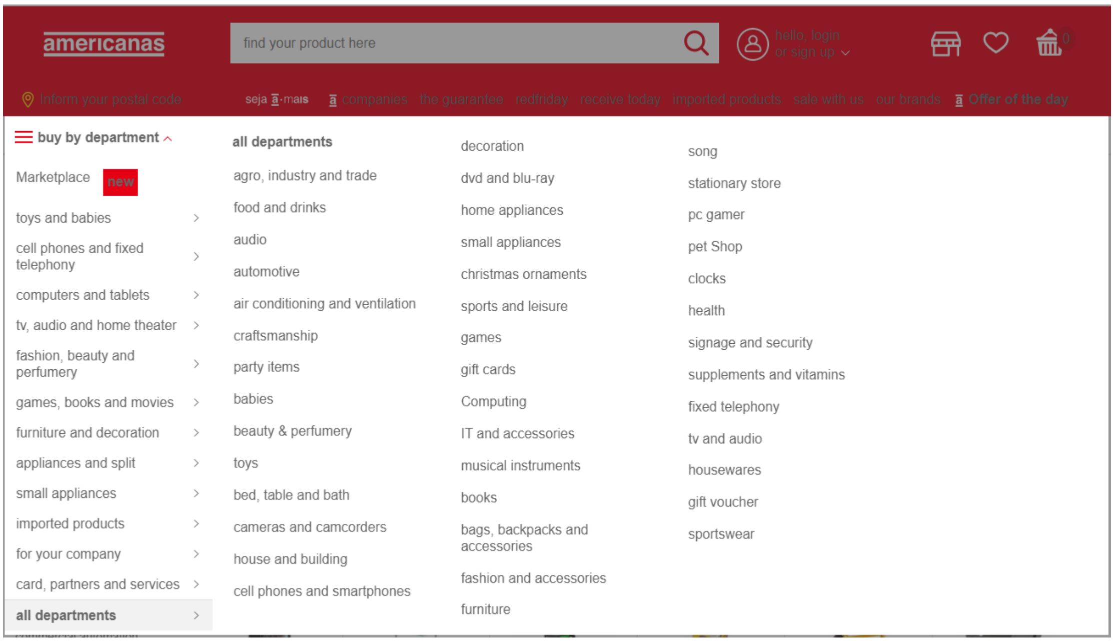
As of 2019, the most shopped category with 14% of orders was "Fashion and Accessories" (Online stores with a predominance of clothing and footwear, which also offers cosmetics, and accessories such as watches, bracelets, glasses, etc.), a 30% increase when compared to 2018. Coming in second place, "Sporting goods" (Online stores with a predominance in the sale of sporting goods, which also offers bodybuilding clothing and equipment), was responsible for 8% of total orders, maintaining its previous year's position, although having 29% more orders. The third position is occupied by "Cosmetics" (Online stores predominantly selling cosmetics, perfumes, specializing in body and hair care. Does not include stores specializing in dietary supplements), with 5% of orders and a 19 percent increase. The "Self-service" category (Online stores predominantly selling food, beverages, and household cleaners, i.e.: supermarkets) came in fourth, with the largest variation when contrasted with 2018. It was responsible for 5% of all orders, with a 61% increase. It is also important to state that department stores are still the drivers of e-commerce in the country. Traditional brick-and-mortar stores invested in technology to be able to provide customers with both an offline experience, as well as an online

[6] Ebit/Nielsen, Webshoppers 41, 2020 – Ebit (www.ebit.com.br). Ebit has been accompanying the electronic commerce in Brazil since 2000.

[7] Nielsen is an American information, data, and market measurement firm, operating in over 100 countries.

one. Of the total number of orders made online, 50% were made through these department stores, which sell anything from home appliances, to clothing, to cosmetics (Figure 1).

Figure 1: Americanas.com.br Product Categories.



Source: Americanas.com.br on 12/29/2020

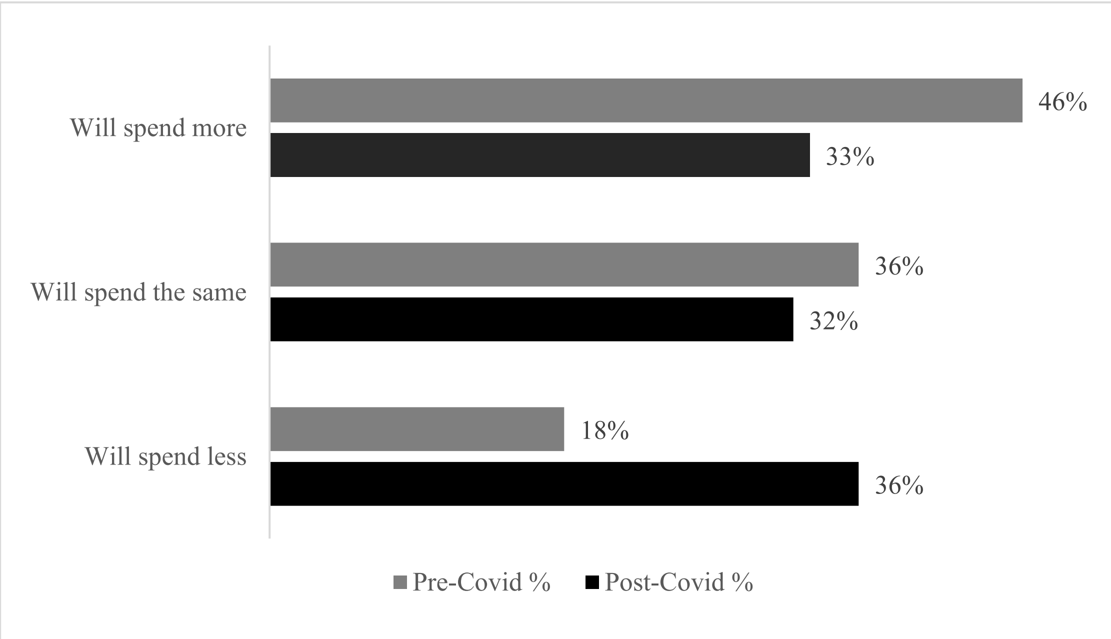
5. Covid-19's impact on Brazil's e-commerce landscape

Multiple consulting companies and institutions conducted research aimed at identifying main pain points of consumers in a pandemic context, as well as tracking data regarding the overall market and reached the conclusion that Covid brought on the acceleration of the online retail adoption rate. The effects of the Covid-19 pandemic on the economy have been at the center of the public discussion agenda. On the supply side, the closure of businesses considered non-essential caused numerous challenges for companies to maintain their operations, either due to the need to implement remote work, or due to the demand reduction effects caused by social isolation. From the point of view of consumers, electronic commerce has been presented as a central alternative for the effectiveness of measures of social distance. Data from "ICT Panel COVID-19" (2020) confirms the trend of advancing economic transactions over the Internet, accelerating a movement that has been occurring between Internet users and companies over the past few years.

5.1. New e-consumer

Although restrictions around Brazil were not rigorous, overall adhesion to them was high (74.2%). Businesses considered non-essential were closed and the population that was not dismissed form their jobs had to work from home. Classrooms were now online. With social-distancing measures in effect, society turned to online shopping. 45% of consumers experienced a reduction in their family's income, with 18% of these also suffering from an increase in their bills. Millennials were the generation most affected, with 55% experiencing salary cuts. They are followed by Generation Z (45%), Generation X (44%), and Baby Boomers (27%). Due to this financial uncertainty, 36% of online shoppers have said that they will be spending less, twice the amount when compared to the previous year (Graph 4) (PWC, 2020).

Graph 4. Spending Intention.



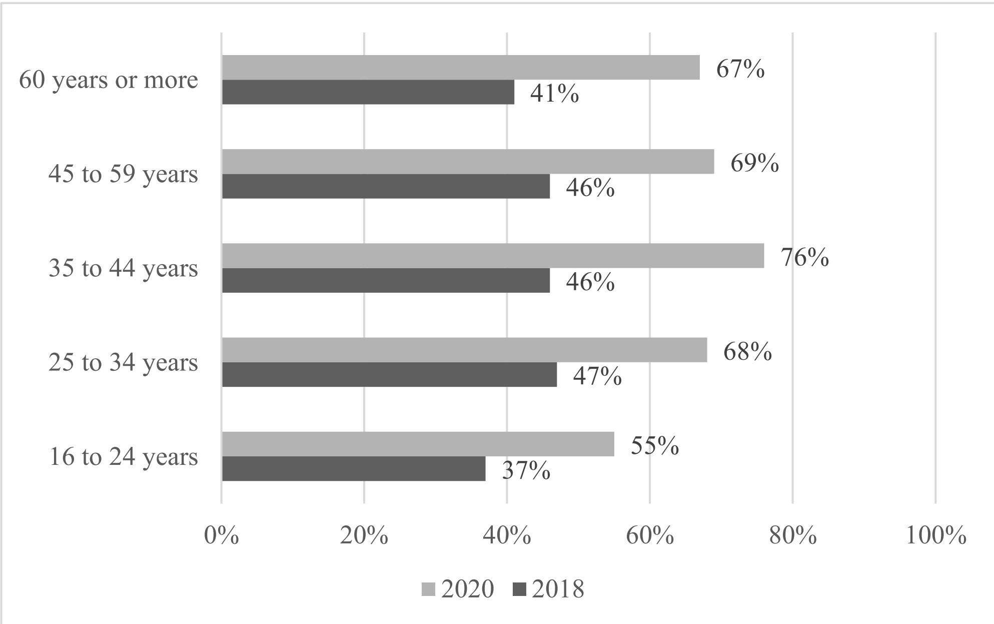
Source: Adapted from PWC's Global Consumer Survey (2020)

This means consumers have increased their sensibility to price fluctuations, being more rigorous during their decision process to acquire goods and looking for products with lower average prices. Product Categories with lower average ticket prices were favored when compared to those with higher tickets (Webshoppers, 2021). This behavior is also seen when considering shipping prices. A customer is more likely to complain about the purchased product the more expensive the price of the shipping is. McKinsey's "New Consumer Post-

Covid" (2020) report also noted increased infidelity to brands and shops. 25% of e-consumers are visiting new stores and 30 to 40% of them are buying from new brands.

Consumers that bought online during the pandemic also increased across all age groups. Of these, those from 35 to 44 years of age were the ones that had the biggest difference in comparison to pre-Covid numbers, with 76% having bought at least once. This was a 30% difference to 2018. The rest of age groups also saw an average increase of 24% in their numbers. This is especially interesting for those with 60 or more years, meaning that age is not an influence factor when it comes to shopping online (Graph 5) (CETIC, 2020).

Graph 5: Online Purchase by Age Gap (2018 vs 2020)



Source: Adapted from Cetic.br (2020)

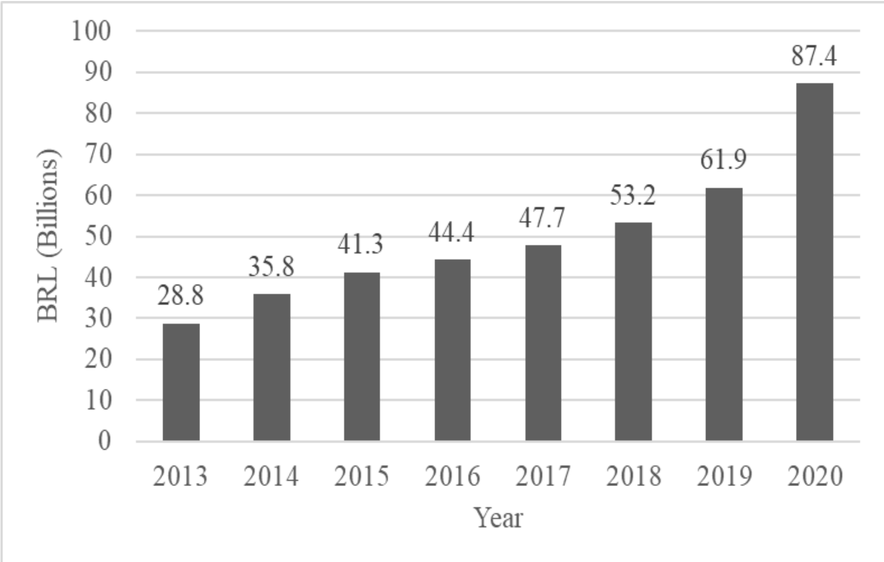
Regarding gender, 57.3% of orders were placed by women, with men responsible for the other 42.7% (Neotrust, 2021).

Overall, 66% of Internet users said they bought products or services over the Internet, a proportion that was 44% in 2018 (CETIC, 2020).

5.2. New E-commerce Landscape

Overall, the pandemic accelerated the adoption of e-commerce by companies and the population. Sales reached 87.4 billion BRL (Graph 6), an increase of 41% in comparison to 2019. The average growth rate, from 2011 to 2019 was 16%, with the greatest variation being from 2012 to 2013, with 28%. Of these sales, 52,5% originated from mobile platforms.

Graph 6. E-commerce Sales in Brazil.



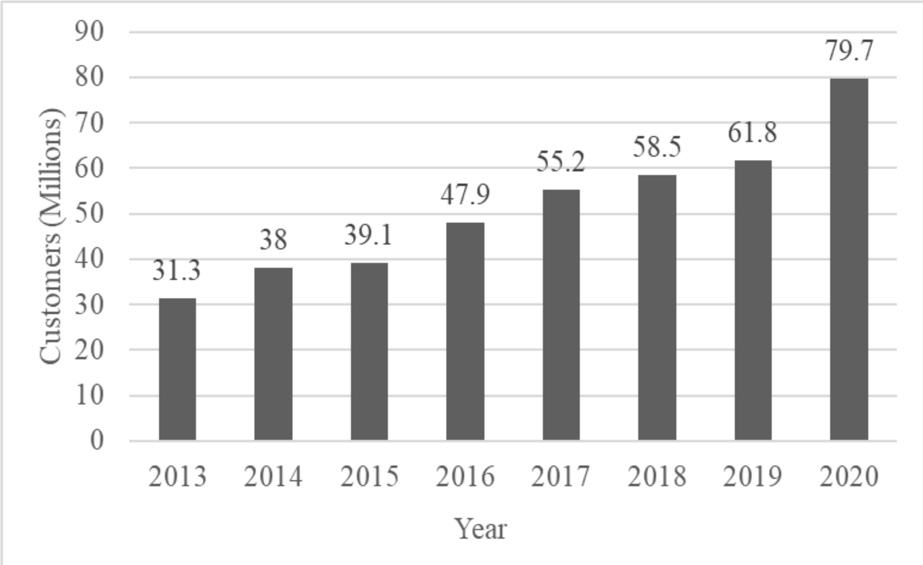
Source: Adapted from Webshoppers 43rd (2021)

There was a total of 13.2 million new customers, representing 17% of 2020's online consumers. With this, a total of 79.7 million Brazilians shopped through digital means, an overall increment of 29% (Graph 7) over the previous year's numbers.

The average growth when comparing previous year was of 12%, with the largest difference being from 2015 to 2016, with a 22% increase.

The number of orders reached a peak of 194 million, a 30% increase in comparison to the previous year (Graph 8). When comparing the last 9 years of orders, this was not the biggest

Graph 7: E-commerce Customers in Brazil

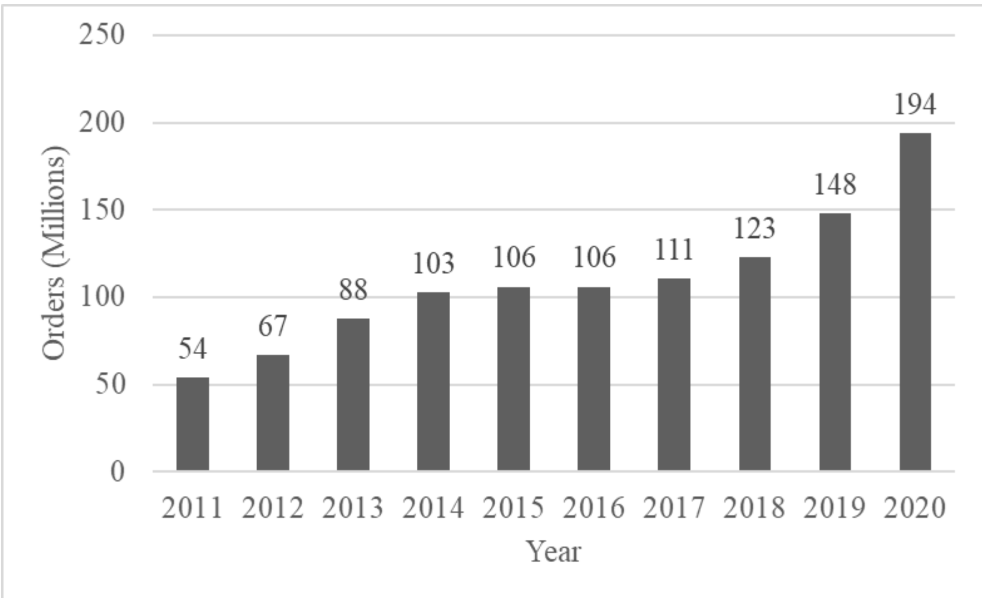


Source: Adapted from Webshoppers 43rd (2021)

variation between years, yet it was double the average growth between years. Mobile commerce also is heavily represented, originating 55,1% of orders.

Even though the consumer's average income fell, and unemployment rose (from 11.9% to 13.5%), the average ticket for online shopping increased in 8%, reaching an all-time high of

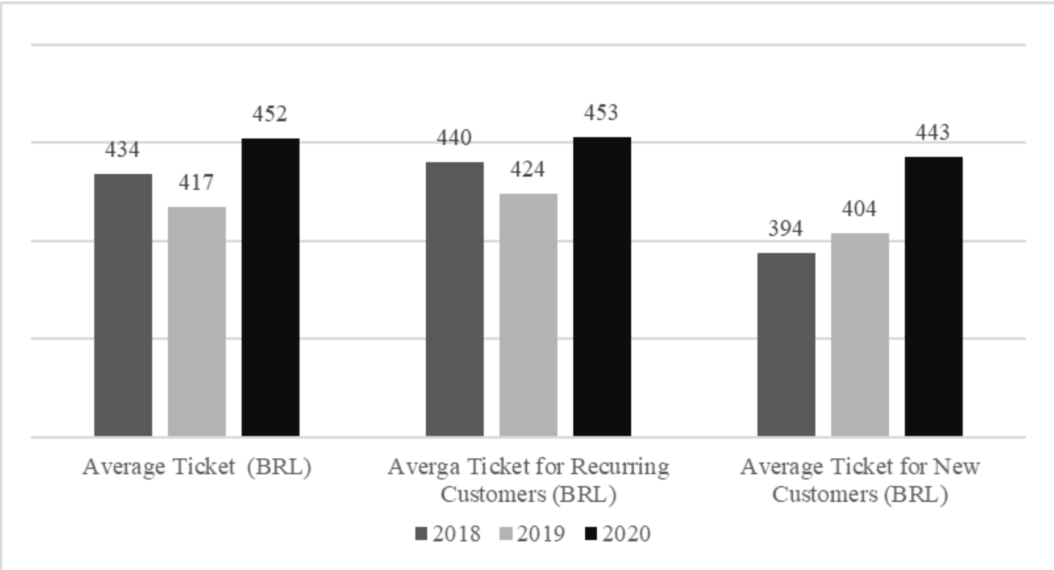
Graph 8: Total Number of Orders



Source: Adapted from Webshoppers 43rd (2021)

452 BRL. This is due to people expanding the use of electronic commerce to shop for groceries and other product categories that previously could be done in person (Webshoppers 42nd, 2020). Both new and recurring consumers had an average ticket that was higher than the previous year and the average value spent for new consumers came closer to the ticket for recurring consumers, closing the gap from 30 BRL to 10 BRL (Graph 9).

Graph 9: Total Average Ticket, Average Ticket for Recurring and New Customers



Source: Adapted from Webshoppers 43rd (2021)

Considering Brazil's geographic regions, the Southeast region still is responsible for most of e-commerce's revenue, concentrating 52.6% of it and in the number of orders, with 64.8%. Trailing behind was the northeast with 18.5% of revenue and 14% of orders. In third place the South's revenue was 18.3% of the total and had 13.6% of orders. The Mid-West had 6.6% of revenue and 5.6% of orders and, lastly, the North had 4% and 2% of revenue and orders, respectively.

Online consumption habits also changed, with a greater proportion of Internet users buying food or food products, cosmetics, and medicines over the Internet. CETIC's survey carried out during the pandemic revealed that the proportion of users who bought food or food products over the Internet was 54%, more than double that recorded in 2018 (22%). There was also an increase in the consumption of cosmetics or personal hygiene products, from 25% to 44%, and in the purchase of medicines, which went from 15% in 2018 to 31% in the months prior to the survey (CETIC, 2020). This can be linked to the fact that consumers are more focused on taking care of their mental health and well-being (69%), physical health (69%), medical needs (64%) and diet (63%) (PWC, 2020). Online shoppers are also buying more from local producers and small businesses, which may be a result of the mobility restrictions that Covid presents, as well as government efforts to encourage people to buy from local small and medium companies (37% of KMPG's Future Consumer Index answered that they will buy from "Brands that contribute to the community").

In Social Miners (2020) report, when consumers were asked "What would stimulate you to keep buying online, even after brick-and-mortar stores open?", the number one answer was "Good prices and sales", with over 65% of respondents. Next, with 59% of participants, came "Fair, cheap or free shipping" and lastly, "Fast shipping time" with 51.8%. Overall, seven out of ten Brazilians say they intend to continue shopping online even after the quarantine ends. (SBVC, 2020).

The pandemic also led many Brazilians to experience, for the first time, purchasing through an app or website on their smartphone. In 2020's first six months, the proportion of Brazilian Internet users who have already made purchases in this way went from 85% to 91% (Mobiletime, 2020).

The form companies and consumers communicate also changed. There was an effort by Brazilian companies to expand the use of the Internet in their operations, with emphasis on the use of messaging applications (such as WhatsApp or Telegram), among those that sell online (42%). In turn, points out that this form of direct contact with the customer was used more intensively: 46% of Internet users who bought over the Internet stated that they did it through messaging applications like WhatsApp, Skype or Telegram, a share that was 26% in 2018.

6. Current Papers

6.1. "Effects of the COVID-19 Pandemic on Digital Transformation of Small Businesses"

Published by Guimarães Júnior in 2020, the paper focused on the impact that Covid had on Micro and Small businesses when it comes to their digital transformation strategy in Recife, Brazil. During the pandemic, a survey carried out by SEBRAE with individual entrepreneurs and owners of micro and small businesses indicated that 58.9% of organizations temporarily discontinued their operations, while 31% changed the way they operated, 6.6% continued to function in the same way, and 3.5% closed. Among the group of businesses that changed their operating model, 41.9% started operating through online sales. The survey also revealed that 73.4% of companies were in a reasonable or bad financial situation, while only 26.6% considered the financial situation to be good. Given the impossibility of consumption on site, many retail services, especially in the food and beverage category, have changed their business through innovations. SEBRAE points out that 43% of small businesses claimed to make changes in the way they operate.

50 small businesses were surveyed, from small markets, restaurants to service providers, focusing on digital transformation aspects of the changes adopted. Regarding the business strategy developed, the following characteristics of the emerging business model in response to the pandemic were analyzed: I - Disclosure strategy: the way in which the company presents its product mix to customers. II - Sales platform: interface that allows the selection of products, exchange of information about the products and closing the order. III - Payment platform: means available for payment of products received; and IV - Delivery strategy: alternative channels for the arrival of products to end customers, due to restrictions on the movement of people and the operation of many establishments during the pandemic.

The author found that most companies were solely based on the phone. Contacting customers through WhatsApp, delivering their products through delivery apps, and using Instagram for their marketing. The only process that wasn't done through the phone, was payment. The main limitation of the published paper is that it focused mainly in one city in Brazil, thus not painting and adequate picture when it comes to the whole country.

6.2. "The Reinvention of Sales: The Strategies of Brazilian Companies to Generate Revenues in the Covid-19 Pandemic"

The paper published in Roraima's Federal University journal in 2020, based itself on bibliographic research involving consumer behavior during the pandemic as well as new strategies developed by companies to survive the challenging period.

It was found that most of the people, given their conditions, chose to stay in their homes, answering the requests of the authorities. This generated a domino effect, directly impacting demand (demand shock) for goods and services. This accelerated the financial degeneration of companies, leading to business closures and bankruptcy and increased unemployment.

To mitigate this effect, companies migrated to already existing online platforms, levering Omnichannel solutions and marketplaces.

6.3. “Accelerated Digital Transformation: Effects of the COVID-19 Pandemic in retail”

The paper published by Carolina Rodrigues and Pedro Ferreira in 2021 focused extensively on how the consumer experience changed throughout the pandemic and the changes put in place by companies to mitigate its effects. The bibliographic research based itself in current reports by government institutions like SEBRAE as well as private ones, like E-bit and Nielsen.

Overall, the key findings where the same as the ones found in the current paper, an increase in the volume of purchases made through e-commerce channels. Customer satisfaction was proved to be challenging, since most companies were not ready for such an abrupt change. Larger companies that were already established online had a higher degree of success, with higher average Net Promoter Scores. Smaller companies with less focus on the e-commerce side of their businesses, saw a lower score. Those that invested in technologies to improve the quality of life of their customers also saw an increase of sales, as well as satisfaction.

6.4. “The Effects of the Covid-19 Pandemic on E-Commerce: a Survey on Brazilian Consumer Behavior”

This survey published by Eduardo Ferro dos Santos in 2021, focused on showing changes in Brazilian consumers before and during the pandemic. Although the sample of 41 people interviewed is small, it followed what was previously exposed during this paper. The surveyed increased the frequency with which they purchased online, focusing on clothing, food, and medicine, as well as preferring name brands over those less know.

When it comes to where these items were purchased, consolidated e-commerce stores like Magalu, Amazon and Americans were the main names that were cited. There was also a reduction on purchases made in Aliexpress, usually tied to off-brand and inferior quality products.

Overall, the author concluded that there was an increase in online purchasing and the need for companies to invest in guaranteeing customer satisfaction and ease of use when in their domains.

7. Limitations and Future Research

One of the limitations of this study was the procurement of more in-depth secondary data on the consumer's profile. Most of the data available on this subject are not free of charge, are unavailable for sale to individuals and when they are, are extremely expensive. It is also important to mention that academic research surrounding the impact of the pandemic on e-commerce is also scarce. There is also the fact that most companies keep details about its consumers overall consumption to themselves. The information available is dependent of public institutions or organizations' capabilities of surveying internet users, as well as filtering this data, leading to measurement and data discrepancies between multiple entities. Some surveys used are updated annually or semiannually, causing some data in relation to the current month, to have a certain lag.

The real impact of Covid-19 to Brazil's e-commerce scenario will only be consolidated after the pandemic has ended, until then we can only analyze the data as it continues to be released and updated. Currently, there is no forecast to when the pandemic will end, thus making it harder to make estimations regarding the future of electronic commerce in the country.

For future research, it is important to keep data surrounding the behavior of consumers, as well as the volume and revenue linked to them, updated. Ideally this function should be performed by the government (with the objective of keeping the knowledge public), through surveys and not only keep the data revised, but also more granular details surrounding consumption habits.

8. Conclusion

As of January 2021, Covid has killed over 200,000 Brazilians, and infected over 9,000,000. With such worrying numbers, most of the population, with their health in mind, understood the need for social distancing measures, as well as taking appropriate measures to avoid being contaminated. The Internet became the solution to many of society's problems, from work to entertainment, and e-commerce became the tool used for shopping, from superfluous goods to those indispensables for survival.

In Brazil, when comparing the growth in number of orders, revenue, and number of clients, its irrefutable that Covid acted as a catalyst for e-commerce in the country. Yearly growth averages were, in most cases, double that of previous years.

Although there were severe economic consequences to a large portion of the Brazilian population, the average ticket online rose, even between new shoppers, that usually spend less online than their counterparts. Basically, the e-consumers were expanding their use of the tool into new product categories. Without being able to go to supermarkets, they use the Internet to order fresh produce. The same goes to other categories, like restaurants and pharmaceuticals (personal hygiene products, medicine, cosmetics). They are also more conscious of their physical and mental health and medical needs.

The overall demographics of online shoppers has mostly not changed. They are from the southeast of Brazil, female, belonging to classes A or B. When it comes to age, those ranging from 35 to 44 years of age overtook those younger than them.

These changes have come to stay with 70% of Brazilians saying they will continue to use the Internet for online shopping, regardless of the device. To gain access to them, retailers have to offer sales that meet their expectations, the cheapest shipping possible and guarantee free shipping. They have showed that they do not mind changing brands if their conditions are satisfied.

Companies that understood the need for change and focused their efforts and resources towards the delivery of a better online experience were the ones that saw the best results and thus have been surviving the pandemic.

As the growth of Internet access and the demystification surrounding it continues, so does electronic commerce.

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