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Online consumption habits: before and during the Covid-19 pandemic

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Abstract

The Covid-19 pandemic is already seen as the most transformative and challenging event in our memory. This atypical situation triggered new habits, forms of consumption and trends.

The present study aims to analyze the new online consumption habits resulting from the Covid-19 pandemic. For this purpose, a quantitative methodology is proposed. A questionnaire focusing on new online shopping habits and trends arising from the Covid-19 pandemic was applied, with 618 responses being obtained.

The study shows that, in fact, during the pandemic, consumers changed their consumption habits in terms of proportion, amount spent on online purchases and payment methods. There were also changes in the purchasing behavior of certain categories of products during the Covid-19 pandemic and, it is also noted that some of the trends arising from the pandemic are strongly influenced by sociodemographic characteristics.

This study proves to be relevant, mainly due to the relevance of understanding how the pandemic context can influence the way people live, behave, buy and develop new habits, which may not end during the pandemic. The digital environment becomes even more important to mitigate the effects of the Covid-19 crisis and, probably, we are witnessing the beginning of the digital era more pronounced than ever.

Keywords: Consumer behavior, online shopping, consumption trends, Covid-19 pandemic.

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1. Introduction

In December 2019, China warned about the outbreak of a new infectious disease, like pneumonia, which was renamed Covid-19. In January 2020, the disease began to spread to several countries, so the World Health Organization decided to declare an international emergency. In response to the uncontrollable spread around the world, sudden lockdowns and social distancing policies were established that affected the lives of thousands of people.

This conjuncture triggered new forms of consumption and trends, since consumption is contextual and the context in which we currently live is especially relevant, insofar as it was never perceived. Thus, this crisis provides an excellent opportunity for marketers to examine the interplay between personal and contextual factors. In fact, standardized and indisputable metrics and theories are now being critically questioned, since consumers are faced with a conjuncture of fear and uncertainty never experienced.

Since this is such a current and little explored topic, the literature is not conclusive about the changes in the online shopping behavior of the Portuguese as a result of the pandemic and, as a result, this research is oriented towards the following questions: “What are the online shopping habits before and during the Covid-19 pandemic and what are the main changes observed?” and “How did the Covid-1 9 pandemic trigger new trends and consumption habits?”.

Considering the questions that guide this investigation, the general objective is to analyze trends and new online consumption habits resulting from the Covid-19 pandemic.

The study is divided into 5 topics: the literature review, which contains the relevant concepts for the study, the methodology, where the methodological options that will shape the study objectives are clarified, the results, where it is intended to answer the questions of investigation and discussion of these and the conclusions of the study.

2. Literature Review

2.1. Consumer behavior

Consumer behavior can be defined as the study of how people, groups and organizations select, buy, use and dispose of products, services, ideas or experiences to satisfy their wants and needs (Kotler, 2012).

Narrowing this concept to the online environment, the authors consider that in the online purchase process, when consumers recognize the need to obtain a product or service, they access the Internet and look for necessary information related to the product they are looking for or, sometimes, they are attracted by information about products and services associated with the felt need (Malik & Guptha, 2013).

Also, according to Katawetawaraks and Wang (2013) there are 4 factors that lead consumers to buy online: convenience, available information, available quantity and time and cost savings.

2.2. Perceived ease of use

The relationship between perceived ease of use and consumer behavior is indicated in several lines of research (Luarn & Link, 2005; Hackbarth et al., 2003; Davis, 1989). Ryan and Rao (2008) measure perceived ease of use by being able to find information easily and becoming skilled, savvy and Internet knowledgeable.

2.3. Online purchase motivations

Purchasing motivations, in a simplistic way, can be hedonic or utilitarian. The hedonic dimension is related to joy, excitement for the purchase process itself and, in turn, the utilitarian dimension is related to the cognitive and non-emotional forum (Albayrak, Caber & Çomen, 2016; To, Liao & Lin, 2007).

Martínez-López *et al.* (2014) defined a set of relevant categories for the understanding of utilitarian motivations: assortment (refers to the adequate number of products available), economy (related to competitive prices and promotions), convenience (the ability to buy without leaving home 24 hours a day, 7 days a week), availability of information (since consumers cannot physically touch the product, relevant information must be made available), adaptability or customization (possibility of the consumer to purchase an exclusive product adapted to their needs), desire for control (related to the consumer's freedom to resume, modify or withdraw from a purchase), payment methods (refers to the consumer's freedom to choose the most advantageous payment method for him) and anonymity (the consumer's possibility to express themselves without necessarily having to identify themselves).

Instead, at the level of hedonic motivations, Arnold and Reynold (2003) suggested six broad categories of hedonic motivations: adventure shopping (motivated by stimulation, adventure, and the feeling of being in another world), social shopping (related to the pleasure of shopping with friends and family, socializing while shopping and bonding with others while shopping), reward shopping (related to relieving stress and moodiness and seen as a special treat), buying ideas (with the

objective of following trends and seeing new products and innovations), the purchase of paper (refers to the pleasure that the consumer has in buying for others and the excitement and joy of finding the perfect gift for others) and, finally, the purchase of values (related to finding products at low prices – the so-called bargains, which gives the consumer the feeling of winning a game.

2.4. Online shopping experience

The online shopping experience refers to the process of acquiring products or services through the Internet (Alves, 2015).

In the context of online shopping, customer satisfaction is the result of the consumer's experience after going through all the stages of purchase and depends on the last shopping experiences at a particular company (Afsar *et al*., 2013).

In the research by Corbitt, Thanasankit and Yi (2003), people are more likely to shop on the Internet if they have a higher degree of trust in e-commerce and web usage experience.

There is a positive correlation between satisfaction with an online purchase and the frequency of purchases, which is the most important factor for making a future purchase (Gounaris et al., 2010). The experience goes well when it meets the consumer's expectations, which gives him a sense of satisfaction (Wu & Hsu, 2015).

2.5. Risk perception

The perception of risk is everything that the consumer considers as uncertain in online transactions (Kim, Ferrin & Rao, 2008). Thus, the risk is understood as painful, as it generates feelings of anxiety and discomfort, resulting from the perception of this risk leading to a possible loss (Souza, Mattosinho & Costa, 2009). Its correlation with purchase intention is quite significant (Kolsaker *et al*., 2004). Kim, Ferrin and Rao (2008), through an empirical study, demonstrated that consumer trust directly and indirectly affects their purchase intention. Thus, we perceive that consumer confidence has a strong positive effect on purchase intention and, in turn, a strong negative effect on consumer risk perception. This study also shows that perceived risk reduces purchase intention, while perceived benefit increases purchase intention.

A greater perception of risk is associated with online purchases compared to traditional purchases, since in traditional purchases the consumer can touch, feel and try the product and decide whether or not to buy, reducing the level of perceived risk (Kim, Ferrin & Rao, 2008). Corbitt, Thanasankite and Yi (2003), analyzed the main categories related to perceived risk – performance risk, financial risk, social risk, psychological risk and time-wasting risk. According to the authors, participation in e-commerce is more influenced by motivations such as curiosity, fun and convenience and less by perceived risk.

2.6. Changes in online shopping behavior due to the Covid-19 pandemic

All over the world, societies are closed and citizens are obliged to respect social distancing. The omnipresence of such a threat, the fear and uncertainty that accompanies it leads to new trends and forms of consumption, people are more suspicious and less susceptible (Donthu & Gustafsson, 2020).

Although consumption is habitual, it is also contextual. And the context is relevant when we live. According to Sheth (2020), there are four main contexts that govern or disrupt consumption habits. The first is the change in the social context through life events, such as getting married or moving to another city. The second context is technology, since, as more innovative technologies emerge, they break old habits. The third is rules and regulations, with special emphasis on those related to public and shared spaces, such as the consumption of alcohol by minors. The fourth and least predictable context is natural disasters, such as earthquakes, hurricanes and pandemics, including the Covid-19 pandemic that we are experiencing today.

As social beings, isolation tends to alter our behaviors and feelings of loneliness, worse cognitive performance, negativity, sensitivity are certain natural manifestations (Campbell, 2020).

There is also an increase in more positive behaviors, such as developing new skills, taking care of the house, reading more and concern for the environment, and an increase in more altruistic behaviors, such as buying food for the most vulnerable people. (Donthu & Gustafsson, 2020).

A survey carried out by Ageas Portugal and Eurogroup Consulting Portugal, indicates that the consumption habits of 45% of the Portuguese have changed during the pandemic, and the higher the income, the smaller the changes in consumption (Jornal de Negócios, 2021).

Likewise, Kotler (2020) predicts major changes, since the period of deprivation and anxiety in which we live will usher in new consumer attitudes and behaviors that will change the nature of current capitalism. Citizens will re-examine what they consume, how much they consume and how they are influenced by class and inequality.

Consumer decision making tends to be less rational during crises. In fact, buying is driven purely by interests and emotions such as anger, fear and anxiety. The consumer is trying to control the situation and minimize risk and physical and emotional suffering. There is enormous uncertainty and people are afraid of regretting not buying something and this possible fear leads to

impulse purchases and large quantities of food, hygiene products and medicines (Grohol, 2020; Guardian, 2020, *cit in*, He & Harris, 2020; Novemsky, 2020).

Donthu & Gustafsson (2020) summarized consumer behavior during the pandemic crisis in three phases. The first is to react, such as accumulating and rejecting; the second is coping (e.g. maintaining social connection, interest in new activities and a different view of brands) and lastly, long-term adaptation (e.g. potentially transformative changes in consumption and individual and social identity).

Still within this theme, Sheth (2020) summarized eight immediate effects of the Covid-19 pandemic on consumption and consumer behavior:

- *Accumulation*: consumers are stocking up on essential products for daily consumption, such as toilet paper, bread, meat and disinfection and cleaning products. Accumulation is a common reaction to managing uncertainty;
- *Improvisation*: Consumers learn to improvise when there are constraints. Covid-19 has led to innovative practices such as location-focused alternatives such as online education;
- *Repressed demand*: in times of crisis and uncertainty, the general tendency is to postpone the purchase and consumption of durable and high-cost products, such as automobiles;
- *Adoption of digital technology*: out of sheer necessity, consumers use technology to keep in touch with friends, work, study and even have appointments. The internet is a rich medium and has a global reach;
- *Shop at home*: has implications for impulse consumption and massively increases online shopping and home delivery services, such as Netflix;
- *Limits to working life*: consumers are "prisoners" of their own home, with limited space and, as a consequence, there is a blurring of the boundaries between work and home;
- *Online meetings with friends and family*: option found to ensure they are well or to share stories and experiences;
- *Discovery of talents*: with a flexible schedule at home, consumers try recipes and are interested in new activities, many even go from consumers to producers.

With time flexibility, but location rigidity, consumers tend to adopt technologies to facilitate work, study and consumption more conveniently. The adoption of digital technology will modify existing consumption habits (Sheth, 2020). Consumers were already making online purchases more and more regularly before the pandemic and it only accelerated the structural shift from consumer culture to the online hemisphere (Kim, 2020). A survey carried out by Ageas Portugal and Eurogroup Consulting Portugal proves this, as more than half of the respondents revealed that they had made more purchases online (Jornal de Negócios, 2021). In this perspective and according to a survey, about 52% of consumers avoid going to physical shopping and crowded areas (Bhatti et al., 2020). Also according to data from SIBS Analytics, in January 2021, there was a 37% increase in online purchases compared to the same period in 2020 and the MB Way stands out as one of the preferred payment methods for the Portuguese (increased by 269% in the context of e-commerce and 234% in physical stores) - both consumers and companies (Marketeer, 2021).

Another consequence of confinement is the extreme increase in the use of social networks, especially as it is the main means of contact and socialization with other people in a situation of isolation and to exchange ideas and opinions (Naeem & Ozuem, 2021; Donthu & Gustafsson, 2020; Naeem, 2020).

In the view of He & Harris (2020), there is likely to be a significant shift towards responsible and pro-social consumption, in the sense that consumers consciously reflect on how to consume and make product/brand choices to be more responsible for themselves, others, society and the environment. The issue of buying domestic versus foreign products is not just a matter of quality, availability and cost, but is now seen as an issue related to consumer ethics. Also a study by Dangelico, Schiaroli and Fraccascia (2022), about the buying behavior of Italian consumers, revealed that this catastrophic and unexpected event led consumers to be more concerned about environmental problems, more aware of individual impacts, and to behave more sustainably.

In short, most habits are expected to return to normal. However, it is inevitable that some habits will disappear because the consumer has discovered a more convenient and affordable alternative. Consumers may find it easier to work from home, learn from home and shop at home. What was an alternative has become an existing habit and the existing habit becomes peripheral. There is a universal law of consumer behavior, which is quite relevant in this reflection. When an existing habit or need is abandoned, it always comes back as a recreation or hobby, examples are fishing, hunting and even bread making. It will be interesting to see that existing habits abandoned will come back as hobbies (Sheth, 2020).

3. Methodology

3.1. Data collection instrument

The questionnaire was the data collection technique chosen to understand changes in online shopping behavior due to the Covid-19 pandemic and new habits and trends.

The statistical procedures performed were descriptive and inferential, using the IBM SPSS software, version 27. In order to understand which statistical tests are most appropriate, the asymmetry and kurtosis of all questions were analyzed and the Kolmogorov-Smirnov Test was performed.

The questionnaire is organized into four parts as shown in table 1.

Table 1 – Structure of the questionnaire

	Questions	Scale	Authors, year
Online shopping habits	Understand if the first online purchase occurred during the Covid-19 pandemic.		
	Frequency of online purchases made before and during the Covid-19 pandemic.	Scale of Participation in E-commerce	Corbitt, Thanasankit & Yi, 2003.
	Proportion of online purchases in relation to total purchases made before and during the Covid-19 pandemic.	Scale of Participation in E-commerce	Corbitt, Thanasankit & Yi, 2003.
	Amount spent on online purchases before and during the Covid-19 pandemic.		
	Most used payment methods before and during the Covid-19 pandemic.		
Relationship with new technologies	Internet experience (years).	Internet Consumer Experience Scale	Corbitt, Thanasankit & Yi, 2003.
	Number of hours of weekly Internet use.		Corbitt, Thanasankit & Yi, 2003.
	Ease of use of the Internet.	Ease of Use Perception Scale	Ryan & Rao, 2008.
	Hedonic purchase motivations.	Hedonic Purchase Motivations Scale	Arnold & Reynold, 2003.
	Utility purchase motivations.	Utility Purchase Motivation Scale	Martínez-López *et al.,* 2014.
	Risk perception of online shopping.	Risk Perception Scale	Corbitt, Thanasankit & Yi, 2003.
Issues related to the Covid-19 pandemic	Variation of online purchase of different product categories.		
	Trends arising from the Covid-19 pandemic:		
	a) Accumulation;		Sheth, 2020; Grohol,2020; Guardian,2020; Novembsky,2020.
	b) Improvisation;		Sheth, 2020.
	c) Repressed demand;		Sheth, 2020.
	d) Adoption of digital technology;		Sheth, 2020.
	e) Shop at home;		Sheth, 2020.
	f) Limits to working life		Sheth, 2020.
	g) Online meetings with friends and family;		Sheth, 2020; Donthu & Gustafsson, 2020.
	h) Discovery of talents;		Sheth, 2020; Donthu & Gustafsson, 2020; He & Harris, 2020.
	i) Responsible and pro-social consumption.		He & Harris, 2020.
Sociodemographic issues	Age		
	Gender		
	Civil status		
	Professional occupation		
	Monthly income		
	Completed education level		

Source: Self elaboration.

3.2. Sample

The questionnaire was answered by 618 individuals, the sample being considered for convenience, since the individuals who participated in the study are within reach of the researchers and willing to answer the questionnaire. The universe of reference was the respondents who responded affirmatively to having already made online purchases. Regarding demographic criteria, only being of legal age.

The characterization of the sample is described in table 2.

Table 2 – Demographic characteristics of the sample

Gender	**Masculine**	**Feminine**	**Other / No answer**				
	N=273; 44,2%	N=245; 55,8%	N=0; 0%				
Age	**18 – 24 years**	**25 – 34 years**	**35 – 44 years**	**45 – 54 years**	**55 – 64 years**	**More than 64 years**	
	N=354; 57,3%	N=126; 20,4%	N=69; 11,2%	N=50; 8,1%	N=16; 2,6%	N=3, 0,5%	
Monthly income	**No income**	**Less than 665€**	**665 – 1000€**	**1001 – 1400€**	**1.401 – 1800€**	**More than 1800€**	
	N=191, 30,9%	N=94, 15,2%	N=164; 26,5%	N=87; 14,1%	N=33; 5,3%	N=49; 7,9%	
Professional Occupation	**Student**	**Student worker**	**Employed for someone else**	**Self-employed**	**Unemployed**	**Retired / pensioner**	
	N=193; 31,2%	N=116; 18,8%	N=228; 36,9%	N=44, 7,1%	N=32; 5,2%	N=5, 0,8%	
Civil Status	**Unmarried**	**In a relationship**	**De facto union / married**	**Divorced**	**Widower**		
	N=322; 52,1%	N=194; 24,1%	N=129; 20,9%	N=17; 2,8%	N=1; 0,2%		
Completed education level	**Up to the 4th. year**	**Until the 9th. year**	**Up to the 12th. year**	**Professional Course**	**Graduation**	**Master's degree**	**Doctorate**
	N=1; 0,2%	N=10; 1,6%	N=150; 24,3%	N=38; 6,1%	N=313; 50,6%	N=102; 16,5%	N=4; 0,6%

Source: Self elaboration.

3.3. Reliability

It is important to consider the internal consistency before proceeding with the analysis itself, so the α Cronbach presented are quite satisfactory, as shown in Table 3.

Table 3 – Analysis of the internal consistency of the questionnaire scales

	Alpha de Cronbach
Perceived ease of use	,896
Hedonic purchase motivations	,890
Utilitary purchase motivations	,951
Risk perception	,816
Covid-19 pandemic trends	,821

Source: Self elaboration.

4. Results and answer to the research questions of the study

The data analyzed allowed us to answer the research questions of the study, which are presented below.

1. **What are the online shopping habits before and during the Covid-19 pandemic and what are the main changes observed?**

The study showed that most respondents were already shopping online before the pandemic (90,8%). There was an increase in the number of online purchases, the proportion of online purchases in relation to total purchases and the amount spent on online purchases when comparing the period before the pandemic and during the pandemic, as can be seen in table 4, where they are the answers, most given by the respondents are present.

Table 4 – Number of online purchases, proportion of online purchases and amount spent on online purchases before and during the pandemic

	Before the pandemic	During the pandemic	Comparison between before and during the pandemic
Number of online purchases	1 time (38,2%); 2-3 times (29,8)	2-3 times (35,1%); more than 5 times (24,4%)	Increase in the number of online purchases (49,7%)
Proportion of online purchases in relation to total purchases	1-5% (47,6%)	1-5% (24,1%); 5-10% (25,9%); 10-20% (20,6%); more than 20% (23,9%)	Increase in the proportion of online purchases in relation to total purchases (56,8%)
Amount spent on online purchases	10-30€ (39%)	30-60€ (31,4%)	Increase in the amount spent on online purchases (56,8%)

Source: Self elaboration.

The Pearson Correlations associated with these variables were also analyzed and there was a greater presence of hedonic motivations in the variables during the pandemic and only these correlates with trends arising from the pandemic, as can be seen in Table 5.

In addition, it was also confirmed that there are significant differences in terms of age, gender and income with regard to the number, proportion and amount spent on online purchases.

Table 5 – Pearson's correlation between variables

Criteria Used	H0= R=0 (There is no correlation) ; H1= R ≠ 0 (There is Correlation)Sig < 0,05 Reject H0			
Number of online purchases				
	Before the pandemic		**During the pandemic**	
Risk Perception	-,095*	As the number of online purchases increases, the risk perception decreases and vice versa.	-,089*	As the number of online purchases increases, the risk perception decreases and vice versa.
Hedonic Motivations			,196***	As the number of online purchases increases, hedonic motivations also increase and vice versa.
Utilitarian Motivations	,150***	As the number of online purchases increases, utilitarian motivations also increase and vice versa.	,276***	As the number of online purchases increases, utilitarian motivations also increase and vice versa.
Trends arising from the Covid-19 pandemic			,254***	As the number of online purchases increases, trends arising from the Covid-19 pandemic also increase and vice versa.
Income	,087*	As the number of online purchases increases, the income also increases and vice versa.	,086*	As the number of online purchases increases, the income also increases and vice versa.
Proportion of online purchases in relation to total purchases				
	Before the pandemic		**During the pandemic**	
Perceived ease of use	,174***	As the proportion of purchases increases, the perceived ease of use also increases, and vice versa.	,180***	As the proportion of purchases increases, the perceived ease of use also increases, and vice versa.
Risk Perception	-,139***	As the proportion of purchases increases, the perception of risk decreases and vice versa.	-,182***	As the proportion of purchases increases, the perception of risk decreases and vice versa.
Hedonic Motivations	,158***	As the proportion of purchases increases, hedonic motivations also increase and vice versa.	,261***	As the proportion of purchases increases, hedonic motivations also increase and vice versa.
Utilitarian Motivations	,260***	As the proportion of purchases increases, utilitarian motivations also increase and vice versa.	,258***	As the proportion of purchases increases, utilitarian motivations also increase and vice versa.
Trends arising from the Covid-19 pandemic			,336***	As the proportion of purchases increases, trends arising from the pandemic also increase and vice versa.
Age	-,089*	As the proportion of purchases increases, age decreases and vice versa.		
Income			-,114**	As the proportion of purchases increases, income decreases and vice versa.
Amount spent on online purchases				
Perceived ease of use	,095*	As the amount spent on online purchases increases, perceived ease of use also increases and vice versa.	,091*	As the amount spent on online purchases increases, perceived ease of use also increases and vice versa.
Risk Perception			-,0083*	As the amount spent on online purchases increases, the perception of risk decreases and vice versa.

Amount spent on online purchases				
Hedonic Motivations			,120***	As the amount spent on online purchases increases, hedonic motivations also increase and vice versa.
Trends arising from the Covid-19 pandemic			,255***	As the amount spent on online purchases increases, trends arising from the pandemic also increase and vice versa.
Income	,249***	As the amount spent on online purchases increases, income also increases and vice versa.	,237***	
*The correlation is significant at the level 0,05 (2-tailed) ** The correlation is significant at the level 0,01 (2-tailed) *** The correlation is significant at the level < 0,001 (2-tailed)				

Source: Self elaboration.

Regarding the number of online purchases, it is considered that there are significant differences between genders both before and during the pandemic, which means that the consumer's gender influences the number of times they buy online.

As for the proportion of online purchases, it appears that there are significant differences between ages and genders. In terms of age, there are significant differences both before and during the pandemic, and the difference between young people (from 18 to 34 years old) and older people (55 or more years old) stands out, in turn, in terms of gender. up just before the pandemic. We can see that both age and gender influence the proportion of consumer purchases online.

Finally, in terms of the amount spent on online purchases, there are significant differences between age and income, especially if we compare the group with no/low income (less than 665€) with medium income (between 665€ and €1400€) and high income (over 1400€), and gender both before and during the pandemic, which means that the age, income and gender of the consumer influence the amount they spend on online purchases. The data can be seen in table 6.

Table 6 – Comparison of the sample by age, income and gender in terms of number, proportion and amount spent on online shopping

Criteria Used		Ho= u1=u2 (There are no significant differences between groups); H1: u1≠u2 (There are significant differences between groups); Sig < 0,05 Reject H0.					
		Age		**Income**		**Gender**	
		Z	*p*	Z	*P*	Z	*p*
Number of online purchases	Before the pandemic	1,798	,111	1,293	,293	,038	,048
	During the pandemic	,753	,584	1,592	,160	1,900	,049
Proportion of online purchases in relation to total purchases	Before the pandemic	3,887	,002	,381	,862	1,817	,005
	During the pandemic	2,901	,013	,631	,676	,097	,470
Amount spent on online purchases	Before the pandemic	6,287	<,001	8,644	<,001	13,725	<,001
	During the pandemic	2,557	,027	9,254	<,001	13,641	,024

Source: Self elaboration.

Regarding the payment methods used before and during the pandemic, before the pandemic, the ATM (46,4%) and the credit/debit card (47,4%) stand out. In turn, during the pandemic, the most used methods are the credit/debit card (47,6%) and the MB Way (41,6%)

The main changes observed when comparing the period before the pandemic with that during the pandemic are the substantial decrease in the use of ATMs and cash on delivery. In turn, there is a great growth in the use of the MB Way. The data can be seen in table 7.

Table 7 – Description of payment methods used before and during the Covid-19 pandemic

	Before the pandemic	**During the pandemic**
Paypal	N=136; 22%	N=144; 23,3%
ATM	N=287, 46,4%	N=230, 37,2%
Credit/devit card	N=293, 47,4%	N=294, 47,6%
Against reimbursement	N=25, 4%	N=16, 2,6%
Bank transfer	N=97, 15,7%	N=98, 15,9%
MB Way	N=198, 32%	N=257, 41,6%

Source: Self elaboration.

Finally, when analyzing online shopping behaviors during the pandemic of different categories of products, it is noted that the categories whose respondents began to buy more frequently were home meals (47,1%), fashion (35,6 %), formation (31,9%), footwear and accessories (29,4%), health and beauty (26,5%) and technology (25,1%). As for the remaining sectors, there was also an increase, but with a lower incidence.

In turn, the sectors whose respondents began to buy less frequently during the pandemic were travel/stay (17,6%), leisure/culture/tickets (16,3%) and fashion (15,7%).

As for the sectors whose buying habits have not changed, we highlight cars/car accessories (72,2%), toys (70,4%), home appliances (68,8%), hypermarkets (65,2%) and of home/decoration and garden (63,8%).

In terms of the sectors whose respondents started to buy exclusively during the pandemic, formation (9,9%), fashion (9,5%) and home meals (9,4%) stand out.

Regarding the sectors whose respondents stopped buying exclusively during the pandemic, travel/stay (32,4%) and leisure/culture/tickets (17%) stand out.

The data can be seen in table 8.

Table 8 – Characterization of the purchasing behavior of different product categories during the Covid-19 pandemic

	Started buying more often	Started buying less often	Buying habits have not changed	Started to buy exclusively during the pandemic	Stopped buying exclusively during the pandemic
Travel/stay	N=34; 5,5%	N=109; 17,6%	N=271; 43,9%	N=4; 0,6%	N=200; 32,4%
Hypermarkets	N=134; 21,7%	N=38; 6,1%	N=403; 65,2%	N=25; 4%	N=18; 2,9%
Home/decoration/ garden	N=92; 14,9%	N=67; 10,8%	N=394; 63,8;	N=25; 4%	N=40; 6,5%
Home appliances	N=62; 10%	N=62; 10%	N=425; 68,8%	N=28; 4,5%	N=41; 6,6%
Technology	N=155; 25,1%	N=45; 7,3%	N=346; 56%	N=49; 7,9%	N=23; 3,7%
Formation	N=197; 31,9%	N=41; 6,6%	N=291; 47,1%	N=61, 9,9%	N=28; 4,5%
Car/car accessories	N=36; 5,8%	N=71; 11,5%	N=446; 72,2%	N=10; 1,6%	N=55; 8,9%
Mobile devices/accessories	N=132; 21,4%	N=57; 9,2%	N=357; 57,8%	N=34; 5,5%	N=38; 6,1%
Sport	N=143; 23,1%	N=68, 11%	N=316; 51,1%	N=43; 7%	N=48; 7,8%
Leisure/culture/ tickets	N=74; 12%	N=101; 16,3%	N=307; 49,7%	N=31; 5%	N=105; 17%
Fashion	N=220; 35,6%	N=97; 15,7%	N=211; 34,1%	N=59; 9,5%	N=31; 5%
Footwear and accessories	N=182; 29,4%	N=99; 16%	N=248; 40,1%	N=40; 6,5%	N=39; 6,3%
Home meals	N=291; 47,1%	N=36; 5,8%	N=214; 34,6%	N=58; 9,4%	N=19; 3,1%
Toys	N=41; 6,6%	N=77; 12,5%	N=435; 70,4%	N=22; 3,6%	N=43; 7%
Health and beauty	N=164; 26,5%	N=56; 9,1%	N=335; 54,2%	N=36; 5,8%	N=27; 4,4

Source: Self elaboration.

When analyzing the changes in the number of online purchases during the pandemic, there are significant differences in the categories of hypermarket, home/decor/garden products, technology, formation, fashion, footwear and accessories, home meals, toys and health and beauty.

As for changes in the proportion of online purchases made during the pandemic, the significant differences occur in the same categories mentioned above, minus tech and toys.

In turn, at the level of the amount spent on online purchases during the pandemic, the differences occur in the same categories mentioned above and in mobile devices and accessories.

The data can be seen in table 9.

Table 9 – Comparison of the sample by product category in terms of changes in the number, proportion and amount spent on online purchases during the pandemic

Criteria Used	Ho= u1=u2 (There are no significant differences between groups); H1: u1≠u2 (There are significant differences between groups); Sig < 0,05 Reject H0.					
	Changes to the number of times online purchases		**Changes in the proportion of online purchases**		**Changes in the amount spent on online purchases**	
	Z	*p*	Z	*p*	Z	*p*
Hypermarksts	12,739	<,001	7,503	<,001	10,173	<,001
Home/decoration/garden	5,495	,004	4,626	,010	8,417	<,001
Technology	5,853	,003	2,825	,060	6,349	,002
Formation	4,148	,016	4,473	,012	3,328	,037
Mobile devices/accessories	2,979	,052	1,053	,350	3,313	,037
Sport	5,263	,005	3,591	,028	3,023	,049
Fashion	15,737	<,001	10,707	<,001	10,293	<,001
Footwear and accessories	11,445	<,001	8,884	<,001	8,699	<,001
Home meals	11,377	<,001	6,140	,002	7,922	<,001
Toys	3,800	,023	2,034	,132	3,988	,019
Health and beauty	12,813	<,001	12,506	<,001	8,784	<,001

Source: Self elaboration.

Still within the product categories, it sought to verify whether sociodemographic variables influenced the purchasing habits of product categories during the pandemic.

It was observed that age influences shopping habits during the pandemic in the hypermarket and toys categories. In turn, income influences purchasing habits in the categories of technology, fashion and footwear and accessories and, finally, gender influences purchasing habits in the categories of home appliances, technology, cars and car accessories, mobile devices and accessories, fashion and health and beauty.

The data can be seen in table 10.

Table 10 – Influence of sociodemographic characteristics on online shopping habits of different product categories during the pandemic

Criteria Used	Ho= Are independent; H1= Are not independent; Sig < 0,05 Reject H0.					
	Changes to the number of times online purchases		**Changes in the proportion of online purchases**		**Changes in the amount spent on online purchases**	
	Z	*p*	Z	*p*	Z	*p*
Hypermarksts	-2,235	,026	-1,536	,128	,355	,723
Home appliances	-,961	,337	-1,549	,122	-3,143	,002
Technology	-1,585	,114	-2,918	,004	-4,822	<,001
Cars and car accessories	,837	,403	,710	,478	-2,574	,010
Mobile devices/accessories	,196	,844	,362	,717	-4,068	<,001
Fashion	2,136	,033	3,280	,001	3,474	<,001
Footwear and accessories	1,033	,302	2,166	,031	1,172	,242
Toys	-2,802	,005	-1,634	,101	-1,307	,192
Health and beauty	,871	,384	1,848	0,65	3,790	<,001

Source: Self elaboration.

It was also considered relevant to understand the influence of risk perception and hedonic and utilitarian motivations in the purchase of certain categories of products during the pandemic.

It was found that the perception of risk influences the purchase of products in the technology category.

It is observed that hedonic motivations influence purchases in the categories of home/decoration/garden products, mobile devices and accessories, fashion, footwear and accessories, home meals and health and beauty during the pandemic.

In turn, utilitarian motivations influence purchases in the travel/stay and health and beauty categories.

The data are presented in table 11.

Table 11 – Influence of of risk perception and hedonic and utilitarian motivations on online shopping habits of different product categories during the pandemic

Criteria Used	Ho= Are independent; H1= Are not independent; Sig < 0,05 Reject H0.					
	Risk perception		**Hedonic motivations**		**Utilitarian motivations**	
	Z	*p*	Z	*p*	Z	*p*
Stay/travel	-8,720	,384	,228	,820	2,996	,003
Home/decoration/garden	1,293	,197	-3,000	,003	,135	,893
Technology	2,073	,039	-1,772	,077	-1,798	,073
Mobile devices/accessories	-1,145	,885	-2,665	,008	-1,277	,202
Fashion	-,369	,712	-3,863	<,001	-1,004	,316
Footwear and accessories	-,303	,762	-3,795	<,001	-1,164	,245
Health and beauty	,680	,497	-4,421	<,001	-3,005	,003

Source: Self elaboration.

Finally, we tried to understand if at the level of product categories their indicators of constructs and ideas and there are was an association between 3 groups. The first group related to daily life at home and routine (hypermarket, home/decor/garden products, home appliances and technology). The second group most related to personal care and image (fashion, footwear and accessories and health and beauty) and, finally, the third group, probably the most affected during the pandemic, which includes services more related to leisure and tourism and products with higher monetary value (travel/stay, leisure/culture/tickets, cars and car accessories). The data can be seen in table 12.

Table 12 – Indicators of constructs and ideas in product categories

Criteria Used	Teste KMO and Barlett: ,903 Aprox. Chi-square: 3769,435 GI: 105 p: ,000		
	Group 1	**Group 2**	**Group 3**
Stay/travel			,721
Hypermarkets	,716		
Home/decoration/garden	,655		
Home appliances	,616		
Technology	,660		
Car and car acessories			,656
Fashion		,067	
Leisure/culture/tickets			,662
Footwear and accessories		,836	
Healthy and beauty		,714	

Source: Self elaboration.

2. How did the Covid-1 9 pandemic trigger new trends and consumption habits?

Regarding the new trends arising from the Covid-19 Pandemic, the average value is 4,35, which means that it is between "I neither agree nor disagree" and "I partially agree".

However, there are higher and lower values than the average value, as can be seen in table 13.

We tried to explain the trends arising from the pandemic, through a linear regression and it was found that 37,8% of the total variable of trends arising from the pandemic is explained by the independent variables present in the model. It appears that the model is significant, however, only the variables proportion of online purchases during the pandemic, years of Internet use, hedonic motivations, utilitarian motivations, risk perception and gender significantly affect the variable trends arising from the pandemic.

It is also verified that the variables that present the greatest relative contribution to the explanation of the trends arising from the pandemic are firstly, hedonic motivations, followed by risk perception and utilitarian motivations.

The results can be seen in table 14.

Table 13 – Description of trends arising from the pandemic

	Average	Standard deviation	
Covid-19 pandemic trends	**4,35**	**1,04**	**Between "neither agree nor disagree" and "partly agree".**
I have accumulated products I do not need to manage uncertainty.	5,12	1,52	Between "partially agree" and “agree"
I adapted well to the restrictions and improvised new ways to continue with my routine.	2,39	1,74	Between "disagree" and "partially disagree"
I postponed the purchase of more expensive products.	4,50	1,90	Between "neither agree nor disagree" and "partly agree".
I used new technologies to keep in touch with friends and family.	6,07	1,38	Between "agree" and "strongly agree".
I feel like I bought more on impulse.	3,21	2,00	Between "somewhat disagree" and "neither agree nor disagree".
I bought more online.	4,94	1,98	Between "neither agree nor disagree" and "partly agree".
Ordered more home deliveries.	5,12	2,02	Between "partially agree" and “agree".
I could not draw the line between my personal and professional life.	3,64	1,94	Between "somewhat disagree" and "neither agree nor disagree".
I discovered new talents and got interested in new activities.	4,24	1,85	Between "neither agree nor disagree" and "partly agree".
I reflected more on the importance of buying national products.	4,49	1,88	Between "neither agree nor disagree" and "partly agree".
I bought more national products.	4,21	1,93	Between "neither agree nor disagree" and "partly agree".
I reflected more on the social responsibility of brands.	4,49	1,89	Between "neither agree nor disagree" and "partly agree".
I bought more products from socially responsible brands.	4,16	1,89	Between "neither agree nor disagree" and "partly agree".

Source: Self elaboration.

Table 14 – Explanation of the dependent variable: Trends arising from the pandemic

	B	SE B	β	T	*p*
Proportion of online shopping during the pandemic	,143	,060	,168	2,372	,018
Years of Internet use	,359	,170	,069	2,114	,035
Hedonic motivations	,237	,030	,299	7,907	<,001
Utilitarian motivations	,216	,041	,255	5,239	<,001
Risk perception	,162	,029	,189	5,632	<,001
Gender	-,201	,074	-,096	-2,736	,006
Note: r=,632; r2=,400; r2 adjusted=,378 (p= <,001)					

Source: Self elaboration

Finally, we sought to understand whether the trends arising from the Covid-19 pandemic were being influenced by sociodemographic variables such as age, income and gender. It can be noted that sociodemographic variables influence many of the trends mentioned:

- Deferring the purchase of more expensive products is influenced by gender;
- The use of new technologies to keep in touch with friends and family is influenced by gender;
- The most impulsive purchase is influenced by age, mainly among young people (18-34 years) and adults (35-54 years), which can be concluded that the two groups have different perspectives regarding the most impulsive purchase during the pandemic;
- The increase in online shopping is influenced by age, especially among young people and older people (55 years or older), demonstrating that they have different perspectives at this level;
- The increase in home delivery orders is influenced by age;
- Discovery of new talents and interests in new activities is influenced by age
- The greater reflection on the importance of buying national products and the increase in the purchase of national products is influenced by gender;
- The greater reflection on the social responsibility of brands and the increase in the purchase of products whose brands are socially responsible is influenced by gender.

The results can be seen in table 15.

Table 15 – Influence of sociodemographic variables on pandemic trends

Criteria Used	Ho= Are independent; H1= Are not independent; Sig < 0,05 Reject H0.					
	Age		Income		Gender	
	Z	*p*	Z	*p*	Z	*p*
I postponed the purchase of more expensive products.	-,010	,992	-1,243	,214	-2,751	,006
I used new technologies to keep in touch with friends and family.	-,915	,361	,075	,940	-1,981	,048
I feel like I bought more on impulse.	-2,335	,015	-,940	,348	-1,266	,206
I bought more online.	-2,938	,003	1,018	,309	-1,018	,281
Ordered more home deliveries.	-2,457	,014	1,955	,051	-,642	,521
I discovered new talents and got interested in new activities.	-2,371	,018	-,865	,387	-,435	,663
I reflected more on the importance of buying national products.	-,042	,967	-,905	,366	-5,232	<,001
I bought more national products.	1,393	,164	,608	,543	-3,702	<,001
I reflected more on the social responsibility of brands.	-,688	,492	-1,959	,051	-4,937	<,001
I bought more products from socially responsible brands.	,025	,980	-,303	,762	-3,434	<,001

Source: Self elaboration.

4. Conclusion

The Covid-19 pandemic has, in fact, triggered new consumption habits and trends.

In terms of new online consumption habits, the increase in the number, proportion and amount spent on online purchases stands out. It can also be seen that payment methods have changed during the pandemic, with the credit/debit card and the MB Way becoming the preferred methods of respondents and a substantial decrease in the use of ATMs and cash on delivery and, on the contrary, an increased use of the MB Way.

Regarding the purchasing habits of the different categories of products during the pandemic, personal and routine care products stand out as the products that were bought the most and, in turn, products more related to leisure, were the categories most affected. There is an influence of sociodemographic characteristics, utilitarian and hedonic motivations and risk perception on online shopping habits of certain categories during the pandemic. Still within this topic, we tried to understand if there are indicators of constructs and ideas and there was an association between 3 groups: the first group related to daily life at home and routine, the second group more related to care and image and, finally, the third group, probably the most affected during the pandemic, which includes services more related to leisure and tourism and products with greater monetary value.

Regarding the trends arising from the Covid-19 pandemic, the agreement rate was higher in the trends "I accumulated products that I did not need to manage uncertainty", "I used new technologies to keep in touch with friends and family" and "I ordered more home deliveries". There was also a great influence of sociodemographic variables on the mentioned trends.

The relevance of this study focuses, above all, on the relevance of understanding consumer behavior during such an atypical period. Although consumer behavior is a widely studied subject, since understanding how people buy is one of the great challenges of marketing and a critical factor for a company to succeed in the business area where it operates. In this specific period, it allows us to assess how the context has relevance in the way people buy, live and develop new behaviors and habits that, most likely, will not end at the end of the pandemic.

In addition to this, the importance of the digital medium to mitigate the negative impacts of the Covid-19 crisis is also indisputable and, most likely, we are witnessing the beginning of the digital era more pronounced than ever, where the distinction between offline and online will no longer make sense, since the digital will always be connected to the day-to-day.

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