IMPACT OF THE COVID-19 PANDEMIC ON CONSUMER BEHAVIOR DURING SOCIAL ISOLATION AND SUSTAINABLE CONSUMPTION: A PERSPECTIVE IN BRAZIL AND PORTUGAL

O IMPACTO DA PANDEMIA COVID-19 NO COMPORTAMENTO DO CONSUMIDOR EM ISOLAMENTO SOCIAL E O CONSUMO SUSTENTÁVEL: UMA PERSPECTIVA NO BRASIL E PORTUGAL

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ABSTRACT

Purpose: This study aims to analyze the impact of the COVID-19 Pandemic on consumer behavior in social isolation and sustainable consumption, from the perspective of the 2030 Agenda, given the perception of 2403 residents in Brazil and Portugal, through four research hypotheses.

Method/approach: The methodology used was quantitative and descriptive research, through exploratory factor analysis and multiple linear regression.

Main findings: The results highlight that all hypotheses were confirmed, and the most relevant relationship, that is, the most significant impact, occurred between the COVID-19 Pandemic

and consumer behavior in social isolation, as well as differences in the perception of respondents between the Countries.

Theoretical, practical/social contributions: Regarding the managerial and social contributions of the research, they allow managers and health professionals to have knowledge about the impacts of the COVID-19 Pandemic, assisting them in developing strategies to face the Pandemic. In addition to information for public policies at the regional and national le'vels to support cities and regions in facing the Pandemic.

Originality/relevance: Another important contribution of the research is the availability of an analysis framework, which has been statistically validated (observable variables and constructs). In this context, the Framework proposed in the research can be replicated in different regional, national, and international contexts.

Keywords: Pandemic COVID-19. Consumer behavior. Sustainable consumption.

RESUMO

Objetivo: Este estudo tem como objetivo analisar o impacto da Pandemia COVID-19 no comportamento do consumidor em isolamento social e consumo sustentável, na perspectiva da Agenda 2030, dada a percepção de 2403 residentes no Brasil e Portugal, por meio de quatro hipóteses de pesquisa.

Método/abordagem: A metodologia utilizada foi pesquisa quantitativa e descritiva, por meio de análise fatorial exploratória e regressão linear múltipla.

Principais Resultados: Os resultados destacam que todas as hipóteses foram confirmadas, e a relação mais relevante, ou seja, o impacto mais significativo, ocorreu entre a Pandemia COVID-19 e o comportamento do consumidor em isolamento social, bem como diferenças na percepção dos entrevistados entre os países.

Contribuições teóricas/práticas/sociais: Quanto às contribuições gerenciais e sociais da pesquisa, permitem que gestores e profissionais de saúde tenham conhecimento sobre os impactos da Pandemia COVID-19, auxiliando-os no desenvolvimento de estratégias de enfrentamento à Pandemia. Além de informações para políticas públicas em nível regional e nacional para apoiar municípios e regiões no enfrentamento da Pandemia.

Originalidade/relevância: Outra importante contribuição da pesquisa é a disponibilização de uma estrutura de análise, validada estatisticamente (variáveis observáveis e construtos). Nesse contexto, o Framework proposto na pesquisa pode ser replicado em diferentes contextos regionais, nacionais e internacionais.

Palavras-chave: Pandemia do COVID-19. Comportamento do consumidor. Consumo sustentável.

1 INTRODUCTION

The outbreak of the new Coronavirus Pandemic of 2019 (COVID-19), caused by SARS-CoV-2 (Severe Watery Respiratory Syndrome) spread rapidly, inducing a progressive growth in the number of infected people, transforming the world and the economy, mainly the field of medicine. As the Pandemic continues to evolve, several surveys have been conducted to understand better the origin, functions, treatments and preventions of COVID-19 (Acter, Uddin, Das, Akhter, Choudhury & Kim, 2020). In this scenario, a comprehensive strategy to

prevent future COVID-19-like epidemics must also be designed in socioeconomic and environmental terms, which is also based on social and environmental sciences, and not just in terms of biology, medicine, healthcare, and the health sector (Coccia, 2020).

It should be noted that initially it was the countries of Asia and Europe, however, currently (December/2020), Brazil is the third country with the largest number of people infected by COVID-19, behind only the United States of America and India. According to the Brazilian Coronavirus Panel, updated on Decembre 14, 2020, there are 6901952 confirmed cases and 181402 deaths, with a lethality rate of 2.6% (Coronavirus Brasil, 2020). However, there are still many underreported cases, and these results are in the face of a fragile health system, with few tests available, as well as overcrowded hospitals and basic health units, lack beds in the intensive care unit, personal protective equipment, mechanical fans, and respirators.

It is noteworthy that, on January 10, 2023, Brazil had 36477214 cases of infected people, as well as 694779 deaths, with a lethality rate of 1.9% (Coronavirus Brasil, 2023). In the case of Europe, more specifically Portugal, on December 14, 2020, the number of deaths is 5649, with a lethality rate of 1.6%. Also, in this period, 350938 confirmed cases were recorded (Dgs, 2020). Portugal, also in January 2023 presents the correction of the epidemic curve for the delay in notification, based on the data collected, it is estimated that until December 30, 2022, there were 5559112 cases of people with COVID-19, with a rate of the lethality of 0.98 (National Health Service, 2023).

Because of the above, it is clear that both in Brazil and in Portugal, there was an increase in the number of people infected from 2020 to 2023, since the data collection for this study took place in the year 2020, however, with the advent of vaccination the number of infected and deaths decreased proportionally.

In this context, both in Brazil and in Portugal, public health measures were used to try to contain the cases of contamination. Among these measures, in several states, social isolation, quarantine, and lockdown were used. In this scenario, the number of tests to detect contamination by COVID-19 has also been increasing in countries. For Ali, Shah, Imran and Khan (2020), social isolation is an excellent quarantine strategy, noting that high levels need to be isolated during the early stages of Pandemic.

According to Musinguzi and Asamoah (2020), in the absence of a vaccine, social isolation and lockdown are the current pillars of efforts to mitigate and flatten out epidemic curves. According to Goffman (2020), the Pandemic has triggered a new consciousness for new types of residences, in which people live, unlike the last decades, with a more connected global consciousness, as the neoliberal version of globalization has caused environmental devastation and social inequality and economics.

In this context, sustainable consumption aims at environmental sustainability and is linked to the 2030 Agenda, which is a global pact signed during the United Nations Summit in 2015 by the 193 member countries. The 2030 agenda consists of 17 Sustainable Development Goals (SDGs), divided into 169 goals (Milica & Milica, 2020, Severo, De Guimarães & Oliveira, 2022) with a focus on overcoming the main development challenges faced by people in Brazil and the world, promoting global sustainable growth by 2030. Coherently, this study seeks to investigate SDG 12, which aims to ensure sustainable production and consumption patterns.

According to Kirk and Rifkin (2020), as consumers understand the potential of Pandemic, they first react by trying to defend themselves from perceived threats to regain control, however, as time goes on, consumers exercise control in other domains and adopt new behaviors.

However, throughout history, Pandemics such as the Black Death in the Middle Ages, the Spanish Flu at the beginning of the 20th century, caused several economic, social and behavioral changes in people (Ietto, 2020), and it is possible that the Pandemic of COVID -19 do the same (Kirk & Rifkin, 2020; Sidor & Rzymski, 2020; Pantano, Pizzi, Scarpi & Dennis, 2020).

In this context, consumer behavior in social isolation can contribute to environmental sustainability, both through sustainable consumption (Jribi, Ben Ismail, Doggui & Debbabi, 2020), environmental awareness (Sofo & Sofo, 2020) and social appeal. In this scenario, the guiding question of this study is what is the impact of the COVID-19 Pandemic on consumer behavior in social isolation and sustainable consumption from the perspective of Agenda 2030 (SDG 12), in the perception of Brazilians and Portuguese?

Consequently, the objective of this study is to analyze the impact of the COVID-19 Pandemic on consumer behavior in social isolation and sustainable consumption, from the perspective of Agenda 2030 (SDG 12), given the perception of 2403 residents in Brazil and Portugal. To this end, four research hypotheses were elaborated, which are presented below.

2 RESEARCH FRAMEWORK AND HYPOTHESES

2.1 COVID-19 PANDEMIC AND CONSUMER BEHAVIOR IN SOCIAL ISOLATION

According to Mishra, Keshri, Rao, Mishra, Mahato, Ayesha, Rukhaiyyar, Saini and Singh (2020), while no treatment or vaccine is available to prevent COVID-19 from being transmitted in the community, social isolation is the only way to prevent the disease, which is taken into account in new epidemic models as a special compartment, which is isolation at home.

In this context, the COVID-19 Pandemic is causing several interruptions in the short and medium term, which companies need to adapt to, as consumer behavior has changed (Pantano et al., 2020; Kirk & Rifkin, 2020). With regard to social isolation, the threat of the virus, coupled with the impacts of the social and economic closure measures needed to slow its spread, is causing problems for the world economy, as well as appears to be affecting mental health and well-being of people (Carbone, 2020).

Jabali, Ayyoub and Suliaman (2023) identified the level of psychological stress and social isolation among a sample of Palestinian media professionals, noting that the level of psychological stress among media professionals was high, while the level of social isolation was medium, mainly due to the Israeli occupation and spread of the Covid-19 pandemic. In the United States, Baumann and BurKe (2023) analyzed coping and social isolation to encourage inclusion in a large public university in the early days of the pandemic. The community was invited to submit artwork that reflected how they are staying connected during the pandemic. According to the authors, works of art reflected (turning inward), advocate (turning outward), and engage (coming together), which contributes to the promotion of social cohesion and positive health and well-being, especially in times of uncertainty.

According to Iqra, Aisha and Tülay (2022), as a result of the COVID-19 Pandemic, social isolation has become necessary globally. This period of social isolation can be a risk factor for mental health problems, especially in younger adults, especially among university students.

In this scenario, actions are needed to mitigate the impacts of COVID-19 on mental health, protecting and promoting the psychological well-being of people, and especially health professionals during and after the outbreak (Rana, Mukhtar & Mukhtar, 2020; Blake, Bermingham, Johnson & Tabner, 2020). According to Mediouni, Madiouni and Kaczor-Urbanowicz (2020), quarantine-related frustration is related to several psychological

problems, including depression, as well as influencing the consumption of sugar-rich foods, which can increase obesity.

However, according to Sofo and Sofo (2020) many people need to isolate themselves in urban or suburban environments, needing to do something to keep their bodies and minds active and fed, in the face of the COVID-19 Pandemic, which alters consumer behavior in social isolation (Kirk & Rifkin, 2020; Musinguzi & Asamoah, 2020). In view of the above, H1 is listed.
H1: COVID-19 Pandemic (COVI) positively influences Consumer Behavior in Social Isolation (CBSI).

2.2 COVID-19 PANDEMIC AND SUSTAINABLE CONSUMPTION

According to Hsu, Chia and Vasoo (2020), the COVID-19 Pandemic is bringing information and models for actions with future epidemics, however, a new sustainable model is indeed necessary. Cohen (2020) highlights that the COVID-19 Pandemic marks the transition from a new sustainable consumption, where governmental structures, as well as organizations, must associate sustainable consumption in their strategies and actions for society.

For Renzi, Ungaro, Di Pietro, Guglielmetti and Pasca (2022), COVID-19 threatens sustainable development, and is also a potential opportunity to reduce the size of the consumer economy, in achieving the SDGs of the 2030 Agenda and in sustainable consumption (SDG 12), as well as the impacts of the virus on society are still unclear and additional contributions are needed to investigate its effects on sustainable consumer behaviors.

In the context of Pandemic, during the lockdown, people are invited to stay at home and go out only to meet the most urgent needs, such as buying food (Jribi et al., 2020). The threat of product shortages and freedom of choice (Gupta & Gentry, 2019), as well as the empty shelves, make this threat highly visible to consumers (Robinson, Brady, Lemon, & Giebelhausen, 2016). In this scenario, for Zambrano-Monserrate, Ruano and Sanchez-Alcalde (2020), social isolation policies have caused an increase in online purchases for home delivery, consequently, the organic waste generated by families has also increased.

However, research by Sarkis, Cohen, Dewick and Schröder (2020) and Fattorini and Regoli (2020) points out that the COVID-19 Pandemic caused a decrease in air pollution, due to the reduction of the car fleet and air travel, as well as the reduction of CO and NO2 levels (Siciliano, Dantas, da Silva & Arbilla 2020).

Leal Filho, Salvia, Paço, Dinis, Vidal, Da Cunha, De Vasconcelos, Ruy, Baumgartner, Rampasso, Anholon, Doni and Sonetti (2022) conducted an online survey with responses from 31 countries, exploring the emphasis given to sustainable consumption during the second wave of the COVID-19 pandemic and the preparedness of individuals to engage in the purchase of green and sustainably manufactured products. According to the authors, the results indicate that the pandemic offered an opportunity to promote sustainable consumption; however, the pandemic alone cannot be considered a game changer on this topic, listing some of the technological and social innovations that may be needed to guide more sustainable consumption patterns in a post-pandemic world.

Research by Valenzuela-Fernández, Guerra-Velásquez, Escobar-Farfán and García-Salirrosas (2022) investigated the effect that COVID-19 has on environmental awareness, sustainable consumption and consumer social responsibility, through 1624 responses from Latin American consumers who also represent different generations, evenly distributed in 400 from Chile (24.6%), 421 from Colombia (25.9%), 401 from Mexico (24.7%) and 402 from Peru

(24.8%) %). The results emphasize that consumers in these countries declare that their behavior has become ecologically and socially responsible. In addition, they indicated that they have increased their interest in sustainable consumption and the acquisition of ecologically correct products to reduce waste and negative impacts on the environment derived from consumption.

According to Jribi et al. (2020), waste control has become a critical issue to optimize sustainable development and profitability, especially in low and middle-income countries, since the reduction of food waste has a vital role to play in the search for global food security.

According to Lo and Liu (2018), for efficient, sustainable consumption, the disposal, and separation of household waste, the conscious consumption of water (Liu & Song, 2020), as well as recycling is fundamental for the local community. Therefore, H2 is presented.

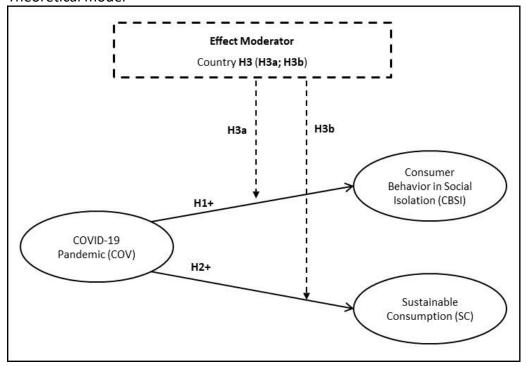**H2:** COVID-19 Pandemic (COV) positively influences Sustainable Consumption (SC).

The countries analyzed, Brazil and Portugal, present different levels of socioeconomic development, with Brazil in the development phase and Portugal is already a developed country. Thus, social, environmental and public health policies are differentiated, as well as the number of hospitals, qualified professionals, specialized equipment to deal with Pandemic, in addition to the population's awareness of social isolation and sustainable consumption. In this sense, the research hypotheses (H3a, H3b) emerge that presupposes the existence of a moderating effect on the country in which the respondent resides, which are described below:

H3a: The respondent's country of residence has a moderating effect on COV and CBSI.

H3b: The respondent's country of residence has a moderating effect on COV and SC.

Figure 1 presents the Theoretical Research Model, with the hypotheses that predict the influence relationships between the constructs and the Country Moderator Effect.do texto.

Figure 1
Theoretical model

3 METHOD

The method used was quantitative and descriptive research (Hair Jr., Black, Bardin & Anderson, 2013), through a survey, with the perception of the different respondents Brazilians (2060) and Portuguese (343).

The questionnaire presents 19 questions, 5 related to the profile of the respondents, and 14 statements divided into 3 Constructs (Table 1), of research adapted by Severo, Guimarães and Dellarmelin (2021): i) COVID-19 Pandemic (COV); ii) Consumer Behavior in Social Isolation (CBSI) (elaborated by the researchers); iii) Sustainable Consumption (SC). The questionnaire consists of statements, in which the respondent chooses an alternative answer on a 5-point Likert scale (1- totally disagree to 5 totally agree) (Table 1).

The sample was non-probabilistic, for convenience (Hair Jr. et al., 2013). To determine the minimum sample size, the rule of using at least ten respondents for each observable variable was respected (Hair Jr. et al., 2013). The total of 2403 respondents has an mean of 171.64 respondents per observable variable. The questionnaire was validated by two doctors who are experts in the thematic area of study (Sustainability and Medicine). First, there was a pre-test with 16 respondents to understand the questions. The data were collected from 11/09/2020 to 05/12/2020 in Brazil and Portugal. The questionnaires were applied online, using Google Forms, through sociais networks (Facebook, LinkedIn, Instagram and WhatsApp). The research used the snowball method, in which the researchers feel the questionnaire to their contacts, and they subsequently passed on the research to other individuals, as well as the effectiveness of the sampling technique modified snowball using social media (Lee and Spratling, 2019), which holds for this Pandemic moment.

For data analysis, Exploratory Factor Analysis (EFA) and Multiple Linear Regression were used, to test the research hypotheses (H1, H2, and H3). To verify the feasibility of the EFA and the application of the Multiple Linear Regression technique, the data were evaluated for normality and reliability of the data, with the application of the Kaiser-Meyer-Olkin (KMO), Bartlett's Sphericity Test, and Simple Reliability (Cronbach's Alpha).

Exploratory Factor Analysis (EFA) was used as data analysis techniques, which aims to find factors in a group of explanatory variables for a given phenomenon, originally contained in a group of variables, in a set of factors (Hair Jr. et al., 2013). Multiple Linear Regression, on the other hand, uses measures that seek to explore the relationship between the variables studied (Hair Jr. et al., 2013). For that, in the treatment of the research data, the software SPSS® Version 21 for Windows was use.

4 RESULTS AND DISCUSSIONS

When cleaning the data, no missing cases were found, however, 16 cases considered univariate outliers were eliminated, and there were also no cases of Pearson's kurtosis and asymmetry, totaling 2403 respondents from Brazil and Portugal. To assess normality, the Kolmogorov-Smirnov and Shapiro-Wilk tests were performed, which presented significant results, indicating normality of the data.

The results of the final sample of 2403 people, of which 85.7% (2060) are residents in Brazil and 14.3% (343) in Portugal. With regard to the gender of the respondents, 65.3% declared themselves Female, 34.4% Male, and 0.3% another gender. Regarding the age of the respondents, 12.2% are over 55 years old, 34.3% between 40 and 54 years old, and 53.5% between 18 and 41 years old. As for Work, 85.9% of respondents work in the areas of: i) Auxiliary 6.0%; ii) Analyst / Technician 18.4%; iii) Manager 16.2%, iv) Teacher 19.2%); v) Health

area (19.1%); and, vi) Others (8.4%). As for Education: i) 9.2% have elementary and high school education; ii) 33.3% graduation; iii) 21.8% postgraduate (specialization); iv) 20.3% Master's degree; and, v) 15.3% Doctorate.

The Table 1 presents the factorial loads, the commonality, as well as the standard means and division of the questions, with the Cronbach's alpha and Kaiser-Meyer-Olkin (KMO) tests for each Construct.

Table 1
Factor loadings of observable variables - Varimax Rotation

Observable Variables	Factorial Loads	Communality	Mean	Standard Deviation
COVID-19 Pandemic (COV)				
COV1) The COVID-19 Pandemic makes me worried about the future life.	0.643	0.538	4.385	0.899
COV2) The large number of people infected with COVID-19 made me change my social behavior.	0.686	0.565	4.526	0.701
COV3) The large number of deaths related to COVID-19 has scared me.	0.744	0.632	4.076	1.153
COV4) I believe that in 2020 an effective vaccine will be found for the treatment of COVID-19.	0.568	0.624	3.073	1.367
COV5) I believe that COVID-19 Pandemic Prevention Campaigns have reduced the number of infected people.	0.874	0.807	2.467	1.050
Mean: 3.705; Standard Deviation: 1.046; Cronbach's alpha: 0.499; KMO: 0.710				
Consumer Behavior in Social Isolation (CBSI)				
CBSI1) The enterprise I'm working in has encouraged home office work to the detriment of COVID-19 Pandemic (if you work).	0.895	0.806	3.748	1.519
CBSI2) I have had symptoms such as insomnia, anxiety, panic, or depression, to the detriment of the COVID-19 Pandemic.	0.589	0.618	2.620	1.234
CBSI3) I have been consuming more alcoholic beverages at this time of the COVID-19 Pandemic.	0.798	0.720	1.791	1.262
CBSI4) The COVID-19 pandemic made me change my behavior, making me buy only the basic items and food needed.	0.821	0.735	3.084	1.199
Mean: 2.811; Standard Deviation: 1.304; Cronbach's alpha: 0.183; KMO: 0.472				
Sustainable Consumption (SC)				
SC1) The COVID-19 Pandemic caused me to change my consumption habits to be more sustainable.	0.862	0.767	2.564	1.184
SC2) The COVID-19 Pandemic made me buy even more environmentally friendly products.	0.841	0.758	2.725	1.203
SC3) The COVID-19 Pandemic caused me to reduce waste production through prevention, reuse, and recycling.	0.671	0.584	4.054	1.117
SC4) The COVID-19 pandemic has reduced atmospheric impacts by reducing gases (CO2) that cause the greenhouse effect.	0.793	0.653	2.840	1.278
SC5) The COVID-19 Pandemic reduced deforestation and loss of biodiversity.	0.951	0.954	3.041	1.096
Mean: 3.045; Standard Deviation: 1.176; Cronbach's alpha: 0.732; KMO: 0.682				

The technique of Exploratory Factor Analysis (AFE) occurred through the Varimax rotation - analysis between blocks, following the following parameters: i) the combination of the variables observable among themselves, in the formation of constructs; ii) the factor loads of each variable; iii) the percentage of explanation of the variance of the set of constructs (>50%); iv) the Communality; iv) Cronbach's Alpha; v) Bartlett's Sphericity Test ($p<0.001$); and, vi) the KMO calculation. In this context, all Factorial Loads and Communality were above the recommended (=or>0.5). Regarding Cronbach's Alpha, the COV and CBSI constructs were below the recommended (>0.7), as well as the KMO of the CBSI and SC constructs were lower than the recommended (> 0.7). However, the tests showed a general Cronbach's Alpha of 0.833, as well as a KMO of 0.709, Bartlett's Sphericity test was significant ($p<0.001$), as well as the Total Explained Variance of 51.94%.

In Construct COV, the variable COV5 had the highest factor load (0.874) "I believe that COVID-19 Pandemic Prevention Campaigns have reduced the number of infected people". This result shows that respondents believe that the COVID-19 prevention campaigns reduce the number of people infected, which is in line with the surveys by Ali, Shah, Imran and Khan (2020) and Musinguzi and Asamoah (2020), because the preventive actions of COVID-19 are an important strategy to reduce contamination in Pandemic.

In this scenario, for the CBSI Construct, the variable that presented the highest factor load was CBSI1 (0.895) "The enterprise I'm working in has encouraged home office work to the detriment of COVID-19 Pandemic (if you work)", that is, the incentive of companies for the home office is an important initiative to reduce the contamination of COVID-19, because in the survey 81.2% of the respondents, companies made the option for the Home Office available. This result corroborates the studies by Pantano et al. (2020) and Kirk and Rifkin (2020), in which the COVID-19 Pandemic is causing changes in organizations' ways of working, as people's social behavior has also changed.

The most significant factor load in Construct SC was SC5 (0.951) "The COVID-19 Pandemic reduced deforestation and loss of biodiversity". This survey finding highlights that respondents understand that there has been a decrease in deforestation and loss of biodiversity. However, specifically in the case of Brazil, according to data from the National Institute for Space Research (Inpe), deforestation in the Amazon rainforest has grown, this increase occurs amid the recommendation of social isolation due to the Coronavirus Pandemic, and after a first-quarter that broke the historical deforestation record of the last four years, when the monitoring series in the Amazon began (INPE, 2020).

In SC another issue that presented a high factor load was SC1 (0.862) "The COVID-19 Pandemic caused me to change my consumption habits to be more sustainable", that is, people changed their consumption habits, which corroborates with the research by Robinson et al. (2016), Jribi et al. (2020) and Cohen (2020), as the Pandemic marks the transition from a new sustainable consumption.

In Multiple Linear Regression, the research verified the relationship between the CBSI and SC constructs and the COV, resulting in 2 Models (Table 2). The Models had the means of the variables of the COV construct (COV1 ... COV5) as a dependent variable (effect), and CBSI and SC (CBSI1 ... CBSI4 and SC1 ... SC5) as independent variables (cause).

Table 2
Multiple linear regression

Model 1	R	R Square	R Square Adjusted	Standard error of estimate
	0.636a	0.405	0.404	0.47533

a. Predictors: (Constant), CBSI4, CBS3, CBSI1, CBSI2
b. Dependent variable: MenCOV

Model 2	R	R Square	R Square Adjusted	Standard error of estimate
	0.595a	0.354	0.353	0.49510

a. Predictors: (Constant), SC5, SC4, SC3, SC1, SC2. b. Dependent variable: MedCOV

The results of the two Multiple Linear Regressions show an explanation index higher than 35% (R^2), in the two Models analyzed (Figure 2). Given the above, in Model1 H1 was confirmed, that is, "the COVID-19 Pandemic (COVI) positively influences consumer behavior in social isolation (CBSI)", with a moderate intensity of influence (40.5%). This result is in line with research by Kirk and Rifkin (2020), Musinguzi and Asamoah (2020) and Sidor and Rzymski (2020), as the Pandemic is changing consumer behavior in social isolation, while no treatment or vaccine is available (Mishra et al., 2020), and there may be an increase in the consumption of foods that prove obesity (Mediouni et al., 2020), as well as affecting people's mental health and well-being (Carbone, 2020; Rana et al., 2020; Blake et al., 2020), In the survey, 23.7% of respondents increased alcohol consumption, and 53.5% presented Symptom of Psychological Disorder (insomnia, anxiety, panic, depression), especially health professionals (58.3%).

The fear of labeling and discrimination potentially prevents health professionals who intend to seek psychotherapeutic counseling and interventions (Rana et al., 2020; Zheng, 2020). Despite common mental health problems and psychosocial issues among health professionals in such environments, most health professionals do not always seek or receive a systematic mental health system (Rana et al., 2020; Xiang et al., 2020).

In this scenario, Model 2 H2 was also confirmed "The Pandemic of COVID-19 (COV) positively influences sustainable consumption (SC)", with a moderate intensity of influence (35.4%). In this sense, efficient, sustainable consumption, with proper disposal and separation of waste (Lo & Liu, 2018), as well as recycling, and conscious consumption of water (Liu & Song, 2020), are essential for environmental sustainability.

The hypotheses H3a and H3b were confirmed (Figure 2), that is, there are differences between countries, in the perception of OVC in SBSI and SC (Table 3). Portugal had the greatest influence (0.439) in the relationship between COV and CBSI, however, Brazil had the greatest influence (0.382) in the relationship between COV and SC. In this context, Portugal has a more developed socioeconomic situation, and this may have influenced H3a, as measures of social isolation were more effective in polluting, just as social and economic issues are better than in Brazil.

Table 3
Moderating effect (Country)

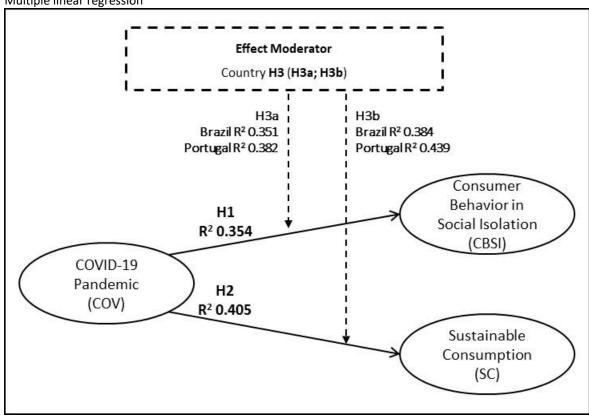| Country	R	R Square	R Square Adjusted	Standard error of estimate
Brazil	0.619a	0.384	0.382	0.45521
Portugal	0.663a	0.439	0.433	0.51640
Brazil	0.593b	0.382	0.372	0.54313
Portugal	0.618b	0.351	0.350	0.46709

a. Predictors: (Constant), CBSI4, CBS3, CBSI1, CBSI2
b. Predictors: (Constant), SC5, SC4, SC3, SC1, SC2
c. Dependent variable: MedCOV

Figure 2
Multiple linear regression

Based on the research results, expressed in Table 3 (Moderating effect – Country) and Figure 2 (Multiple linear regression), important research findings are highlighted in the Conclusions. Among these research findings, it is important to highlight the statistical differences (significant) between the two countries (Brazil and Portugal).

5 CONCLUSIONS

The survey results highlight the impact of the COVID-19 Pandemic (COV) on consumer behavior in social isolation (CBSI) and sustainable consumption (SC), from the perspective of the 2030 Agenda (SDG 12) as well as differences in respondents' perceptions across countries. In this context, the most relevant relationship occurred between COVI and CBSI (40.5%). These research findings highlight that the COVID-19 Pandemic is directly impacting consumer behavior in social isolation, which has changed their eating habits, increased online purchases, and consequently the generation of waste, also causing Symptoms of Psychological Disorders (insomnia, anxiety, panic, depression), as well as an increase in the consumption of alcoholic beverages.

Regarding the managerial and social contributions of the research, they allow managers and health professionals to know the impacts of the COVID-19 Pandemic, assisting them in developing strategies to face the Pandemic. In addition to information for public policies at the regional and national levels to support cities and regions in facing the Pandemic, contributing to the understanding of environmental issues and the SDGs of the 2030 Agenda and thus contributing to the advancement of science.

Academic and scientific contributions are linked to the development of the scale to measure the impact of the COVID-19 Pandemic, based on CBSI and SC. (2021), and the CBSI

prepared by the researchers. Another important academic contribution of the research is the availability of an analysis framework, which has been statistically validated (observable variables and constructs). In this context, the Framework proposed in the research can be replicated in different regional, national, and international contexts.

However, there are limitations related to data collection, based on the exclusive perception of individuals, as well as a limited number of Portuguese respondents, even in the case of a non-probabilistic sample. This perception of individuals using a Likert scale can allow for bias in response, such as the Halo effect (Bagozzi & Yi, 1991). Given the above, the data were statistically validated using normality and simple reliability tests and variance.

From the results of the study, new research is suggested related to the identification of other observable variables that are part of the effects of the COVID-19 Pandemic, which can interfere in SC and CBSI.

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