

Effects of Covid-19 on consumer behavior: Ecuador case

Efectos del Covid-19 en el comportamiento del consumidor: Caso Ecuador

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Abstract

Confinement as one of the measures decreed in the health emergency by the Ecuadorian government to counteract the impact of the SARS-CoV-2 or Covid-19 virus, has been reflected in consumer behavior. The purpose of this study is to know the effects that this emerging measure causes in the consumption behavior of people, using the measurement of variables related to personal, social, psychological and cultural factors. A sample of 658 consumers was surveyed in five cities in Ecuador: Cuenca, Guayaquil, Loja, Machala and Quito. The Structural Equation Model (SEM) was used to check the theoretical hypotheses. These theories were accepted considering three dimensions: the loads of the indicators analyzed through the Loadings test > 0.7; the internal consistency reliability measured through the Cronbach Alpha composite reliability test (CR) > 0.7, for the constructs of purchasing behavior, social, personal, psychological and cultural factors; and the convergent validity observed through the Average Variance Extracted (AVE) test > 0.5 for the five constructs. The results show that the relations between consumer behavior and personal, social, psychological and cultural factors are significantly associated, which provides some guidelines to understand consumer behavior and better meet needs in times of crisis.

Resumen

El confinamiento como una de las medidas decretadas en la emergencia sanitaria por el gobierno ecuatoriano para contrarrestar el impacto del virus SARS-CoV-2 o Covid-19, se ha visto reflejado en el comportamiento del consumidor. El propósito de este estudio es conocer los efectos que esta medida emergente ocasiona en el consumo de las personas, utilizando la medición de variables relacionadas con los factores personales, sociales, psicológicos y culturales. Se encuestó una muestra de 658 consumidores en cinco ciudades del Ecuador: Cuenca, Guayaquil, Loja, Machala y Quito. Se utilizó el Modelo de Ecuaciones Estructurales (SEM) para comprobar las hipótesis teóricas. Estas teorías fueron aceptadas considerando tres dimensiones: las cargas de los indicadores analizadas a través del test *Loadings* > 0.7; la confiabilidad de consistencia interna medida a través del test de confiabilidad compuesta (CR) y Cronbach Alpha > 0.7, para los constructos de comportamiento de compra, factores sociales, personales, psicológicos y culturales; y la validez convergente observadas a través del test *Average Variance Extracted* (AVE) > 0.5 para los cinco constructos. Los resultados muestran que las relaciones entre el comportamiento del consumidor y los factores personales, sociales, psicológicos y culturales se encuentran asociadas significativamente, lo cual proporciona algunas pautas para entender el comportamiento del consumidor y satisfacer mejor las necesidades en tiempo de crisis.

Keywords | palabras clave

Consumer behavior, consumption in Covid-19, entertainment, personal relationships, sustainability, emotional health, customs.

Comportamiento del consumidor, consumo en Covid-19, entretenimiento, relaciones personales, sostenibilidad, salud emocional, costumbres.

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1. Introduction

Once the World Health Organization declared the current Covid-19 coronavirus as a pandemic on 11 March 2020, countries have declared a state of emergency to prevent transmission of this disease.

According to CEPAL study (2020), Covid-19 will cause serious economic and social effects in the short and long term, the intensity and depth of which will depend on the conditions of each economy, world trade, the duration of the epidemic and social and economic measures to prevent contagion. Businesses in the commercial, education, tourism, transportation, manufacturing and natural resources sectors will be affected by the suspension of domestic productive activity, leading to unemployment and lower economic growth; the economy in Latin America and the Caribbean is projected to fall by -9.1% by 2020 due to Covid-19.

The Government of Ecuador, with 58 positive cases and 2 deaths, took six emerging measures on 16 March, 2020: (i) close public services except health, safety and risk services, (ii) open hospitals, neighborhood stores, markets and supermarkets, (iii) cancel public and private face-to-face working hours, (iv) implementation of curfew for vehicles and individuals, (v) suspension of domestic passenger flights; and, (vi) suspension of interprovincial transportation. It is estimated that the country's stagnation will cost 3.5% of Gross Domestic Product (GDP) per month and estimated losses of \$2 billion, according to Haro (2020).

Public and private organizations and consumers of products, services and activities will be the most affected by the public health problem caused by the SARS-Cov-2 or Covid 19 virus, and it will be observed on reduced sales and changes in consumption, posing great challenges to governments and productive sectors to emerge from the economic stagnation generated by the state of emergency and emergency condition.

In this context, some studies offer some guidance for understanding consumption in crisis. According to (Katz et al., 2020) they consider that Covid-19 pandemic has brought challenges to the global socioeconomic system and emphasize the role of digital technologies used to counteract confinement, disseminate prophylactic measures and facilitate the functioning of the economic system, social distancing and definitive end of stagnation.

The study of (Zwanka & Buff, 2020) predicts that the impact of the pandemic will bring changes in consumer behavior and point out that online shopping will be a practice during and after this public health problem.

In order to determine how the confinement measures caused by Covid-19 impact consumer behavior through the measurement of variables related to personal, social, psychological and cultural factors, it has been proposed to develop a model that explains these relationships through four hypotheses; H1: There is a positive relationship between social factors and consumer behavior; H2: There is a positive relationship between psychological factors and consumer behavior; H3: There is a positive relationship between cultural factors and consumer behavior; and H4: There is a positive relationship between personal factors and consumer behavior.

In order to achieve this purpose and to verify the proposed assumptions that explain the effects of the consumer during confinement, four sections are developed. The first presents some theoretical references on public health issues and factors that influence consumer behavior in a global context and from the perspective of marketing; the second refers to the methodology, which includes the sample, measurements of constructs and indicators and the method of analysis -Structural Equations Model (SEM)-. The third presents the results by empirically examining the relationship

between consumer behavior and personal, social, psychological and cultural factors; and finally, the discussion and conclusions of the study.

2. Theoretical framework

The effects of Covid-19 are altering the world's economies. The pandemic has disrupted tourism, global value chains and labor supply, affecting trade, investment and total production in countries, leading to a widespread damage of the economy (Alonso, 2020).

Confinement, as one of the emerging measures taken by governments, has caused that daily consumption of products, services and activities usually conducted by the population have been modified. Knowing these effects and impacts is important because they have faced social, psychological, technological and cultural changes, which could impact new habits of behavior and consumption.

The analysis of consumer behavior is connected with sustainability and biodiversity. A variety of studies analyze the relationships between the environment and the consumption decisions of individuals (Weigel & Weigel, 1978; Berger & Corbin, 1992; Bansal, 2003; Haytko & Matulich, 2010; Kotler, 2011).

Currently, consumers are aware that purchases affect the environment, making changes in their purchasing behaviors and supporting companies in ecological strategies. Dagher and Itani (2014) mention the perceived severity of environmental problems which motivate the ecological purchasing.

On the other hand, Paetz et al. (2012) argue that environmental degradation and sustainability are one of the most serious problems facing the world today, followed by the economy, health care, unemployment and crime.

Li and Atkinson (2020) examine another factor affecting consumer behavior, related to the psychological factor named "consumer's happiness", measured through the satisfaction of basic psychological needs; the results show that consumers feel happier when they have more psychological ownership over a product after its consumption. Likewise, the studies of (Chan & Mogilner, 2017; Caprariello & Reis, 2013; Carter & Gilovich, suggest that basic psychological property increases happiness.

Other studies examine how lifestyle, personality and economics affect consumer behavior. The empirical evidence of Muniady et al. (2014) applied to university students in Malasya state "personality" as the main influencer in the purchase of the investigated group.

To analyze consumer behavior, it is recognized in this study that not all consumers are equal. Therefore, the differences in their lifestyle will be subjected to internal factors such as perception, learning, emotions, motivations, needs and impulses; and external factors such as culture, social strata, demographic aspects, reference groups or coexistence that will determine the model to be developed in this research.

Abraham Maslow's needs model and Veblen's social psychological model will be used to determine how the confinement measures caused by Covid-19 impact consumer behavior, by measuring variables related to personal, social, psychological and cultural factors and creating the consumer behavior model, which explains the relevant elements in consumer behavior in times of crisis.

Maslow establishes the premise that a human being must first meet his/her basic needs to subsequently seek to meet the most advanced needs —physiological, security, belonging, esteem and self-realization (Maslow, 2013).

Incorporating the needs hierarchy into a public health problem framework means that people have a priority focus on purchasing behavior, which means that the most important needs must first be met than secondary needs.

Veblen's social psychological model considers humans to be social animals adapted to the norms of their culture; their desires and behaviors are subjected to the groups they belong to or those they would like to reach.

3. Materials and method

3.1. Data and sample

The geographical scope of the study is formed by five cities in Ecuador: Cuenca, Guayaquil, Loja, Machala and Quito, capital of the Republic of Ecuador – selected by the high power of hierarchy and economic influence compared to other regions (Hofstede, 2011); and these account 35% of Ecuador's population (INEC, 2010).

The twenty-four provinces of Ecuador struggle with Covid-19, registering a total of 20,937 according to the Ministry of Health (newsletter No. 064), out of which 16,386 (78%) correspond to the cities analyzed. The provinces of Guayas (Guayaquil) and Pichincha (Quito) covers 90% of the confirmed cases and this situation affects health, economy, and education; in addition to social inequality and unemployment, being uncertain the forecasts in the short and long term.

The investigation took place in the last week of April, during the health emergency period decreed by the Ecuadorian government on March 16, 2020, in the face of the global public health problem. A questionnaire was designed and used as an instrument, while data collection was online, sending links via email to consumers of four generations: Baby Boomers, consumers born between 1949-1968 and who made up 14% of the population surveyed; Generation X people born between 1969-1980 and who represented 16% of the population analyzed; Generation Y with consumers born between 1981-1993 and who constituted 34% of the population; and Generation Z, consumers born from 1994-2010 and who represented 36% of respondents. A total of 658 surveys were collected in six days.

The elaboration of the "online survey" for this research started with a careful review of the relevant literature on factors affecting consumer behavior in times of crisis. Twenty-seven indicators (questions) were built to make up the five constructs of the Structural Equations Model. Each value is evaluated considering the Likert scale, 5 (totally agree), 4 (agree), 3 (Neither agree nor disagree), 2 (disagree) and 1 (totally disagree); which is one of the most widely used psychometric instruments in the social sciences and market studies, according to (Matas & Matas, 2018). The final structure of the instrument consists on twenty-two variables that will measure personal, social, psychological and cultural factors; and five variables that focus on the buying behavior during confinement (see Table 1)

3.2. Measurements: constructs and indicators

The Structural Equations Model (SEM) consists of five constructs; one for the dependent variable and four constructs related to independent variables. Initially twenty-seven indicators were created that respond to the problem raised.

To examine the criteria for purchasing behavior, participants were questioned about the consumption of basic foodstuffs, changes in habits, brand loyalty and use of internet in their purchases; the information was extracted from the study of Xiao

and Kim (2009) who point out that consumer changing value systems affect consumer behavior and satisfaction through consumer value-mediating variables.

Participants were asked about the massive consumption of entertainment during confinement as a use of streaming platforms for programs, movies, video games; increased reading, cooking activities; and socialization of the family through communication and hobbies. These personal and emotional factors are related to the buying behavior of brands analyzed by Xiao and Kim (2009).

Social relations and sustainability during confinement were measured through nine questions. The first five related to online communication and social networks as platforms to reconnect with family and work; while the four sustainable-related variables are measures through questions related to mobilization means, social causes, water consumption and plastic reduction, premises worked by Dagher and Itani (2014), who point out that the behavior of individual consumption affects the environment and the need for consumers to participate in friendly behaviors and ecological strategies.

The psychological factor is measured through indicators related to exercise and mental health, humor, and insurance purchase. Cao et al. (2020) investigate how a discreet positive emotion impacts consumers' choices about healthy versus unhealthy choices. On the other hand, Li and Atkinson (2020) examine the effect of psychological property on consumer happiness, measured through the satisfaction of basic psychological needs.

Finally, the culture perception factor was measured through indicators that determine family customs and preference, as well as local consumption of products. Rokeach (1968); Long and Schiffman (2000) point out that individuals' personal, social and cultural experiences explain the similarities and differences between individuals, groups or cultures..

3.3. Analysis method

To identify the effects on consumer behavior, the Structural Equations Model (SEM), a statistical technique recommended in the business field and social sciences (Henseler et al., 2016), was used as a statistical tool. It is a model with high reliability and validity for this type of research.

Morgan et al. (2009) used this methodology to examine market orientation and marketing capabilities, being complementary assets that contribute to superior performance. Martin and Javalgi (2016) analyze through this model the marketing capabilities to achieve more performance in foreign markets. Zack et al. (2009) conduct exploratory research to learn about the organizational impact of knowledge management; and Flatten et al. (2011) reveal through this model how the relationship between the absorption capacity and performance of small and medium-sized enterprises (SMEs) is mediated by strategic alliances.

SEM is used to analyze variables with dependency ratio and multiple relationships between dependent variables, combining two statistical techniques: factorial and regression analysis, consisting of constructs or paths — non-observable elements represented by multiple indicators and by the relationships of dependence between constructs (Hair et al., n. d.).

Based on the theoretical premises and empirical evidence, the model was developed to test the four hypotheses proposed in this study. The model has five constructs: the first one corresponds to the purchasing behavior; the second corresponds to social factors with sub-variables: personal relationships and sustainability; the third is made up of psychological factors that will measure variables of exercise and mental health;

the fourth construct is related to the cultural perceptions; and finally the personal factors that include massive entertainment consumption variables (see Table 1).

Table 1. Constructs and indicators of the model

Constructs	Code	Indicators	Sub-variables
Purchase behavior	CCweb_01	Web services for buying food at home.	Changes in consumption habits
	CCoint_02	Habits of consumption commodities.	
	CCpbas_03	Increase of purchases of basic needs products: food, health and personal care.	
	CCpsunt_04	Changes in the purchase behavior of sumptuous, financial and real estate products.	
	CCmarc_05	Brand loyalty	
Social factors	FSrede_01	Online communication and social networks as platforms to connect with people	Personal Relationships
	FSredp_02	Online communication and social networks as platforms to reconnect with work	
	FSmens_03	Use of messaging apps like WhatsApp.	
	FSvidr_04	Use of video conferencing applications (Zoom, Google Classroom, Microsoft Teams) in recreational activities.	
	FSvipd_05	Use of video conferencing applications (Zoom, Google Classroom, Microsoft Teams) for professional and training activities.	
	FSmovb_06	Bicycle as a means of mobilization.	Sustainability
	FSsoli_06	Support to local and/or national causes of solidarity.	
	FSagua_07	Reduction of water and electricity consumption and/or use of plastics.	
FSsost_08	Consider that after Covid-19, sustainability is a key element for government, businesses (brands) and citizens		

Constructs	Code	Indicators	Sub-variables
Psychological factors	FGejer_01	Body and mind balance exercises in everyday activity.	Exercise and mental health
	FGhumo_02	Humor to keep up the mood.	
	FGsalu_03	Purchase of private health insurance to improve health care.	
	FSevol_04	Optimism on the development and evolution of the pandemic.	
Cultural factors	FCcost_01	Change in eating habits.	Customs
	FCploc_02	Preference to the consumption of local products.	
	FCpnec_03	Relation between the consumption of basic needs with family preference.	
Personal Factors	FPcpe1_01	Watch programs and movies through streaming platforms.	Use of massive entertainment
	FPint_02	Interest on streaming platforms associated with video games and music.	
	FPerad_03	Increase of radio audience.	
	FPlect_04	Read and use of audiobooks.	
	FPcoci_05	Culinary activities.	
	FPfami_06	Socialization with the family through communication and hobbies.	

4. Results

The results of the analysis carried out on the measurement and the structural model, supported by the Smart PLS software are analysed below:

The demographic characteristics of respondents located in the five cities of Ecuador: Cuenca, Guayaquil, Machala, Loja and Quito are described in Table 2.

Table 2. Demographic variables

Demographic variables	Frequency	Percentage %
Gender		
Male	297	45,3
Female	358	54,7
Generation		
Baby boomer (1952 - 1968)	93	14,2
X Generation (1969 - 1980)	102	15,6

Demographic variables	Frequency	Percentage %
Y Generation (1981 - 1993)	225	34,4
Z Generation (1994 - 2010)	235	35,9
Marital status		
Single	332	50,7
Married	211	32,2
Divorced	35	5,3
Widow	3	0,5
In a Relationship	36	5,5
Separated	3	0,5
Free Union	35	5,3
Educational level		
Elementary	13	2,0
High-school	122	18,6
Technology	33	5,0
University	397	60,6
Master degree	90	13,7
Cities		
Cuenca	89	13,6
Guayaquil	125	19,1
Loja	182	27,8
Machala	72	11,0
Quito	187	28,5

4.1. Measuring the model

The first test of the measurement yielded insignificant results for ten indicators of the purchase behavior constructs, personal factors, social factors and psychological factors out of the twenty-seven indicators initially observed.

The indicator related to the brand's loyalty purchase behavior (CCmarc_05= 0.53) was not considered in the model. Likewise, four indicators related to personal factors -massive entertainment consumption- radio (FRfad_03=0.32), use of audiobook (FPlec_04=0,42), cooking (FPcoc_05=0.55) and family socialization (FPfamil_06 =0.55) are not part of the model. Four indicators of the social factor —sustainability— such as the use of alternative means of transportation (FSmobs_06=0.28) support of solidarity causes (FSsoli_07=0.45), reduction of water, light and plastics consumption (FSagua_08 =0.523); sustainability (FSsost_09=0.52) are not part of the model. Finally,

the optimism indicator (FGopt_09=0.52) was eliminated for the psychological factor-related construct by presenting values lower than 0.6.

The appropriate scores for reliability tests and Cronbach's Alpha are higher than 0.7, guaranteeing good reliability of the constructs. The convergent validity, measured through the Average Variance Extracted (AVE) as shown in Table 3, is on the value 0.5 in all indicators, which provides validity to the model, considering what is established by (Fornell & Larcker, 1981) and (Henseler et al., 2009).

Table 3. Result of the measurements that make up the constructs

Constructs	Average Variance Extracted (AVE)
Behavior	0.5792
Social fact	0.5505
Psychological factors	0.4997
Cultural factors	0.5967
Personal factors	0.7492

Table 4. Correlations between constructs

Constructs	Customer Behavior	Social factors	Psychological factors	Cultural factors	Personal factors
Customer Behavior	0.5792				
Social factors	0.2129	0.5505			
Psychological factors	0.0944	0.0784	0.4997		
Cultural factors	0.1488	0.0974	0.1662	0.5967	
Personal factors	0.1124	0.1255	0.0742	0.0541	0.7492

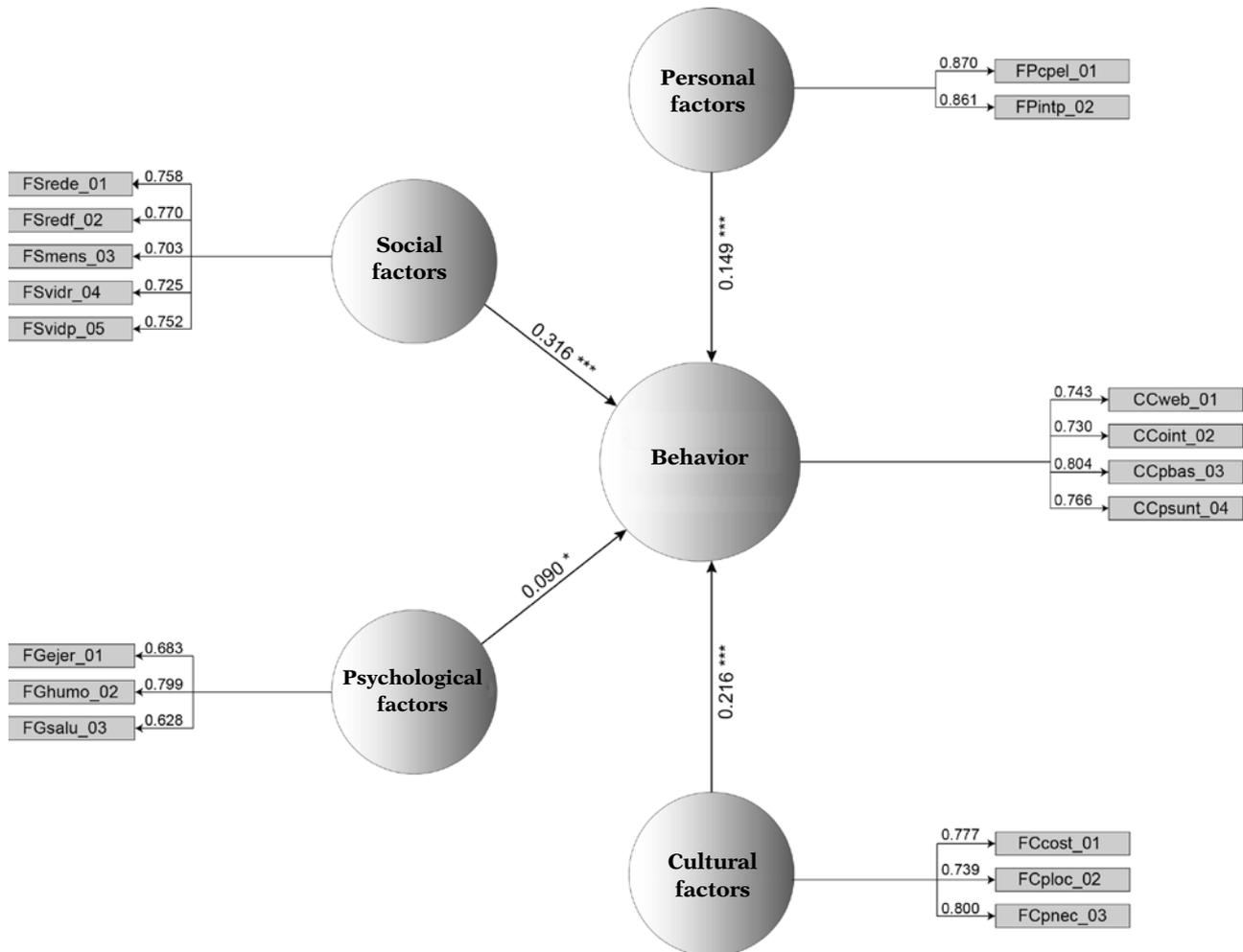
Squared correlations; AVE in the diagonal.

Table 4 shows that in all cases the AVE is higher than the correlation values presented between the constructs, providing evidence of adequate discriminatory validity. Model measurements provide good evidence on reliability and validity to represent the topics discussed in this study. The structural model will then be evaluated.

4.2. Structural model

The model developed in this study is shown in Figure 1. The results indicate a good Standardized Root Mean Square Residual (SRMR) index of 0.078, below the maximum thresholds of 0.10 (0.08 in the most conservative approach).

Figure 1. Structural model of the consumer behavior



The verification of the model consistency measured through the Standardized Root Mean Square Residual (SRMR), square root of the sum of squared differences between correlation matrices —Euclidean distance— (Bentler & Yuan, 1999), states that the consumer behavior model explains 30% of the social, psychological, cultural and personal factors. This conclusion is based on the resulting R² values of 0.3067, which indicate the percentage of variability explained by predictive constructs in the model. Adjusted R² values 0.302 “take into account model complexity and sample size; and, therefore, they are used to compare different models or the explanatory power of a model in different data sets” (Henseler et al., 2016).

On the other hand, Churchill’s study (1979) states that the reliability of the indicator must be above 0.7. In the research the fifteen indicators have loading above 0.7; CCweb_01>0.74; CCoint_02>0.72; CCpbas_03>0.80; CCpsunt_04>0.76; FPcpel_01>0.8704; FPintp_02>0.8607; FSrede_01>0.7581; FSredf_02>0.7702; FSmens_03>0.7027; FSvidr_04>0.72; FSvidp_05>0.75; FGhumo_02>0.79; FCcost_01>0.77; FCploc_02>0.73; FCpnec_03>0.79; except FGejer_01<0.68 y

FGsalu_03>0.62 indicators that do not justify their removal. This information confirms the goodness of the indicators and the reliability of the instrument.

After evaluating the validity of the indicators, constructs and explanation of the model through the adjusted R², the analysis of the empirical evidence of the four hypotheses raised (H1), (H2), (H3) and (H4) is performed. The results obtained for the four hypotheses are statistically significant between purchasing behavior with social factors (0.316, $p < 0:01$), purchasing behavior and psychological factors (0.090, $p < 0:05$), purchasing behavior and cultural factors (0.215, $p < 0:01$); and consumer behavior and personal factors (0.1485, $p < 0:01$) as shown in Table 5.

Table 5. Estimations, p value and Cohen's f²

Hypothesis	Beta	Mean value	Standard error	t-value	p-value	Cohen's f ²
H1: Social factors -> Behavior compo	0.3163	0.3172	0.0455	6.9435	0.0000	0.1163
H2: Psychological factors -> Behavior compo	0.0904	0.0935	0.0374	2.4132	0.0159	0.0093
H3 Cultural fact -> Behavior compo	0.2156	0.2171	0.0413	5.2163	0.0000	0.0528
H4: Personal factors -> Behavior compo	0.1485	0.1500	0.0389	3.8162	0.0001	0.0266

In addition, according to the effect size classification (f²) proposed by (Cohen, 2013), the model presents an average f² in proven consumer behavior relationships with personal, social, psychological and cultural factors, providing good evidence on the predictability of the model as seen in Table 5.

5. Discussion and conclusions

5.1. Discussion

This study helps to understand the effects of Covid-19 on Ecuadorian consumer behavior with respect to personal, social, psychological, cultural and personal factors, for which the hypotheses raised and which have been statistically proven through the Structural Equations Model (SEM) are discussed.

H1, H2, H3 and H4 hypotheses related to social, psychological, cultural and personal factors and consumer behavior are accepted, because the structural model shows a significant relationship between variables, taking into account that the p value of these relationships is below 0.05; it can be mentioned that there is significance between these relationships, which concludes that there is a significant relationship between changes in consumption habits and factors that influence consumer behavior during Covid-19. These results are consistent with the findings of (Shigemura et al., 2020; Torales et al., 2020; Wang et al., 2020; anxiety, depression, and stress during the initial stage of the COVID-19 outbreak. The data will be used for future reference. Methods: From 31 January to 2 February 2020, we conducted an online survey using snowball sampling techniques. The online survey collected information on demographic data, physical symptoms in the past 14 days, contact history with COVID-19, knowledge and concerns about COVID-19, precautionary measures against COVID-19, and additional

information required with respect to COVID-19. Psychological impact was assessed by the Impact of Event Scale-Revised (IES-R Courtemanche et al., 2020).

These results allow reflecting of two important findings:

The first related to a new model of online buyer behavior, essential for the development of productive activities and satisfaction of needs after Covid-19.

A second finding is concerned with companies, which must design customer-focused and non-product-focused digital marketing strategies; in an uncertain context they will have consumer confidence during confinement, and post Covid-19.

5.2. Conclusions

This research allowed to design a Structural Equations Model (SEM) consisting of five constructs and seventeen indicators; the model was statistically validated through three dimensions: loads of indicators, reliability and convergent validity. The dimensions show significant associated relationships between consumer behavior and social relations and sustainability; habits in the mass consumption of entertainment; exercise and mental health; family customs and preferences

The descriptive study on consumer behavioral factors, in terms of the social relation indicator, indicates that online communication and social networks have been useful for reconnecting with the closest people and work; the use of video conferencing applications (Zoom, Google Classroom and Microsoft Teams) for recreational, training and professional activities have been essential for maintaining these relationships. On the other hand, sustainability through support for local and/or national solidarity causes and the reduction of plastics has influenced consumer behavior.

The massive consumption of entertainment in Ecuador includes a high use of technology during confinement. Programs and movies have been watched on Netflix, HBO, Amazon Prime, Hulu and Disney Plus; and the interest of streaming platforms associated with video games and music has increased.

Analyzing psychological factors, exercise and humor have been the means chosen to maintain the mood during confinement in Ecuador; meanwhile, food habits and increased preferences in consumption of local products have changed.

From all of the above, some future lines of research may arise such as: the impacts of technology and consumption in times of crisis; consumer behavior by generations—Baby Boomers, Millennial, and Centennial—during Covid-19; purchasing behavior and social responsibility of university students during confinement. In addition, there are possibilities to extend the study in time and space; as well as conduct comparative studies between Latin American countries to better understand this problem.

This research presented some limitations such as the response-time of consumers to provide information online, which decreased the number of observations and territorial scope. Therefore, it is recommended to expand this research at the national level and to other emerging contexts.

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