

# CHANGES IN CONSUMPTION BEHAVIOR IN MEXICO IN RELATION TO EXERCISE, MENTAL HEALTH AND DIET DURING THE COVID-19 CONFINEMENT

## CAMBIOS EN EL COMPORTAMIENTO DE CONSUMO EN MÉXICO EN RELACIÓN CON EL EJERCICIO, LA SALUD MENTAL Y LA DIETA DURANTE EL CONFINAMIENTO POR COVID-19

Laura Fischer <sup>1</sup> \* ; Emigdio Larios-Gomez <sup>2</sup> .

1. National Autonomous University of Mexico, México. [lfischer@fca.unam.mx](mailto:lfischer@fca.unam.mx)

2. Autonomous University of Puebla, México. [lfischer@fca.unam.mx](mailto:lfischer@fca.unam.mx)

\*Corresponding Author: Laura Fischer, email: [lfischer@fca.unam.mx](mailto:lfischer@fca.unam.mx)

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### ABSTRACT

The impact of COVID-19 was felt immediately, due to the widespread lockdown and social distancing measures taken by all governments globally; manifesting different attitudes taken by people during confinement, the research aims to know if there are differences in the behavior of Mexican men and women specifically in relation to psychological factors such as exercise and mental health and cultural factors specifically regarding the diet that people had during a period of confinement due to COVID-19. A descriptive research was carried out with a quantitative approach, to a sample of 1007 subjects nationwide, 64% women and 36% men. Data analysis was done using the SPSS version 25 statistical package. For the descriptive analysis, each of the attitudinal phrases of the instrument that were evaluated under a Likert scale were taken, nested under the top two box and bottom two method, thus obtaining an ordinal scale variable. To verify the hypotheses, an analysis of variances was carried out, as well as a correlation analysis (Pearson). The study reveals that the daily coexistence to which individuals were subjected due to the isolation produced by the COVID-19 pandemic, has caused both men and women to have similar behaviors, modifying their consumption habits, in order to improve health and stay physically and mentally healthy, it can not be predicted if these behaviors will persist when the pandemic has ended and people return to their daily activities outside the home but yes, it gives a vision of how people have adapted to this situation.

**Keywords:** Consumer behavior; consumer behavior COVID-19; effect of pandemic behavior; activities in confinement

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## RESUMEN

El impacto de COVID-19 se sintió de inmediato, debido a las medidas generalizadas de bloqueo y distanciamiento social tomadas por todos los gobiernos a nivel mundial; manifestando diferentes actitudes tomadas por las personas durante el confinamiento, la investigación tiene como objetivo conocer si existen diferencias en el comportamiento de los mexicanos y mexicanas específicamente en relación a factores psicológicos como el ejercicio y la salud mental y factores culturales específicamente en cuanto a la alimentación que tuvieron las personas durante un Periodo de confinamiento por el COVID-19. Se realizó una investigación descriptiva con enfoque cuantitativo, a una muestra de 1007 sujetos a nivel nacional, 64% mujeres y 36% hombres. El análisis de los datos se realizó con el paquete estadístico SPSS versión 25. Para el análisis descriptivo se tomó cada una de las frases actitudinales del instrumento que fueron evaluadas bajo una escala tipo Likert, anidadas bajo el método top two box y bottom two, obteniendo así una variable de escala ordinal. Para verificar las hipótesis se realizó un análisis de varianzas, así como un análisis de correlación (Pearson). El estudio revela que la convivencia diaria a la que se vieron sometidos los individuos debido al aislamiento producido por la pandemia del COVID-19, ha provocado que tanto hombres como mujeres tengan comportamientos similares, modificando sus hábitos de consumo, con el fin de mejorar la salud y mantenerse física y mentalmente. saludable, no se puede predecir si estos comportamientos persistirán cuando la pandemia haya terminado y las personas regresen a sus actividades diarias fuera del hogar pero sí, da una visión de cómo las personas se han adaptado a esta situación.

**Palabras clave:** Comportamiento del consumidor; comportamiento del consumidor COVID-19; comportamiento del efecto de la pandemia; actividades en confinamiento

## INTRODUCTION

The impact of COVID-19 has been felt immediately, due to the widespread lockdown and social distancing measures globally. However, this situation that already persists due to the appearance of different mutations of the virus that has caused for almost two years serious and profound lasting economic, social, political and cultural impacts has impacted on the lifestyle, the practice of physical activity and the food aspect of the population, resulting in changes in the daily routine people have come to present negative emotional responses such as fear, anguish, stress, anxiety, worry, tiredness, anger among others (Larios-Gómez, 2021), this situation, made people modify their usual behavior in relation to socialization, such as places of recreation family gatherings, attendance at their workplaces and the way in which they made the purchase of food, but also the daily coexistence improved aspects such as food, exercise and family relationships

### Literature review

The consumption of products is a process that is carried out on a daily basis by individuals, many of the habits of people, are learned responses that have been developed throughout their lives, although they are difficult to modify, there are situations that arise in the environment that cause changes as new concepts are incorporated about the idea or the object that is consumed. (Lien, 2014; Shaouf, 2016).

Recent studies on consumer behavior mention that shopping habits have been modified from different

contexts (Sheth, 2020) as they would be:

1. The social context, which ranges from the stages of the consumer's life cycle (singleness, marriage, children among others), the workplace and coexistence groups.
2. The technological context, with the emergence of innovative technologies, with artificial intelligence (virtual and augmented reality), smartphones, Internet 4.0 and electronic commerce which has directly influenced the process of online purchase and consumption, referring to new ways of buying products and services, new ideas and experiences.
3. The context of coexistence, awareness and well-being, with a sustainable vision of respect for the environment and consumption of healthy products, all with rules and regulations especially related to public and social policies.
4. The external (less predictable) context composed of events that man does not control in one part, such as natural disasters and those that in a certain way causes, such as global pandemics, including the COVID-19 pandemic, civil and global wars; historical events that have modified the consumption, the production of goods and services and the supply chain around the world due to the different social distancing measures that each of the countries have taken and that have caused, for more than two years, serious and profound economic, social, political and cultural impacts.

Attitude is also decisive for the positive or negative predisposition in the behavior of an individual. There are recent studies such as the one carried out by Torales, et al, (2020), during the confinement due to the pandemic, where they report that the population is having reactions and psychological states related to attitude and motivation in mental and physical health. Another factor that influences consumer behavior is social factors related to the influences received by reference and coexistence groups, such as friends, family, work groups, virtual communities among others (Schiffman, 2001; Kotler, 2008; Solomon, 2009; Cornelis, 2010).

As well as the individual factors that according to the Engel-Kollat-Blackwell model (2018) are found in the consumer, such as motivation, participation, knowledge, attitudes, personality, values and lifestyle.

For the present study, social, personal and family factors were taken, which are influenced by the external context of Sheth (2020), as well as social factors: (a) personal and (b) family in purchasing and consumption behavior and in relation to exercise and mental health and cultural factors regarding the diet that people made during the isolation caused by COVID-19.

In Mexico, as in other countries, to stop the contagion and avoid the collapse of health systems, the government launched different actions such as: the confinement of the population, work and education virtually, changed in the hospital systems for the care of this disease, without neglecting other ailments; but, even so, the cases of infected people were increasing progressively as the economic situation of the country was being affected by these measures, in such a way that the government was taking other actions, so as not to lead to the economic collapse of its population, changing to different epidemiological traffic lights, which allowed people to gradually join their activities outside the home.

These measures have impacted people in different ways in both economic, social and psychological aspects; provoking negative emotional responses such as fear, anguish, stress, anxiety, worry,

tiredness, anger among others( Larios-Gómez, 2020), These changes made people modify their habitual behavior in relation to socialization, places of recreation, family reunions, attendance at their workplaces, in the way they made the purchase and consumption of food and the practice of physical activities, among many other changes

Since the first case of COVID-19 infection was registered in Mexico, in March 2020, there have been different waves of infections due to the mutations that the virus has had. In June and July 2020 there was a first wave of infections, a fact that is attributed to the festivities of May and the holiday periods; a second wave, much larger than the first, happened in the last weeks of December and the first weeks of January 2021, due again, to family gatherings. (Ambrosio, 2021). At the end of December 2021, a third wave appears due to the mutation of the virus in the so-called Ómicron, bringing greater contagion, but fewer deaths by people who were already vaccinated. By the beginning of 2022, more than 3.9 million cumulative cases of COVID-19 infection had been registered in Mexico. The number of people killed by this disease had exceeded 301,000 people. (Statista, 2022).

The average number of deaths reported each day in Mexico grew by more than 270 people during the last three weeks, 20% of its previous peak. Mexico is reporting 37,462 new infections on average each day, 87% of the peak — the highest average, reported on Jan. 23, 2022. (Reuter, 2022). In total until February 26, 2022, in the country, there were 4,930,069 infections and 305,893 deaths related to the coronavirus since the pandemic began.

This pandemic has not affected people equally, differences have been found by age, gender and regions. In relation to cases of infections, similar percentages are observed in men and women, not so in relation to mortality from COVID-19 where a higher percentage is found in men, reaching 58% of the total number of deaths in the world. Smith et al. 2020).

An example is Peru, where 30,344 deaths were officially registered by COVID-19 until September 9, 2020, with 70.3% being men and 29.7% women (Sinadef, 2020). For its part in Mexico, 51.49% of those infected are women and 48.51% men, although in women the contagion is greater, in relation to deaths, 61.59% of the deceased are men and 38.41% women (Conacyt, 2022).

This increased mortality in men could be due to their health behaviors and higher risk habits, (such as tobacco or alcohol consumption), or to biological aspects, such as a lower immune response, or to pre-existing diseases more common in them such as hypertension, diabetes and cardiovascular problems. (Beltron, et al. 2020) or, as Bustillo (2020) refers, men, in general, tend to minimize the severity of the pandemic and are more reluctant to take care of themselves, take less care of their health and do not adequately follow the prevention measures against COVID-19.

According to the study carried out during the pandemic in countries that make up the Organization for Economic Cooperation and Development. (OECD, 2020), 59% of women surveyed considered this virus a serious health problem, compared to 48% of men. In turn, they also found a higher percentage of men who rejected sanitary measures, presenting a lower use and intention to wear a mask or mask, and a lower tendency to wash their hands. (Galasso, et al. 2020; Lopez, 2020).

The above shows how this pandemic has had different nuances and has affected people differently,

with possible subsequent biopsychosocial alterations; physical disability, uncertainty, frustration and hopelessness for not being able to carry out daily activities, has brought with it different economic, psychological and social problems, with people having to organize themselves to face and adapt to the new context in their daily lives, showing unusual consumption patterns; but, regarding staying healthy, did the confinement and social distancing caused by COVID-19, cause healthy behaviors in people such as exercise and healthy eating?

The results of this research aim to provide for business practice a guide on the commercialization opportunities during and after the coronavirus pandemic, which in Mexico as well as worldwide, with the new strains of the virus, it is difficult to predict when it will come to an end, but yes, it gives a vision of how people have adapted to this situation. Therefore, the objective was: to know if there are differences in the behavior of Mexican men and women in relation to psychological factors (exercise and mental health) and cultural factors (diet) during the confinement by COVID-19.

## **METHODOLOGY AND RESEARCH METHODS.**

A descriptive, cross-sectional quantitative study was conducted. An instrument was designed for the investigation of seven items, based on the Sheth factors (2020), which summarize the immediate effects on purchases and consumer behavior due to the COVID-19 pandemic; as well as the Engel-Kollat-Blackwell EKB model, (2018), which proposes how social, personal and family factors are influenced by environmental situations, such as cultural, economic and demographic aspects and individual factors of the consumer, that is, motivation, participation, knowledge, attitudes, personality, values and lifestyle.

For the purposes of this research, only two constructs of the factors of Shets (2020) and Engel (2018) were taken: Construct 1. Psychological Factors (exercise and mental health), and 2. Cultural factors (food). Therefore, the following hypotheses are proposed:

H1 There are no significant differences between men and women in exercise and mental health during the COVID-19 lockdown.

H2. There are no significant differences in men and women in relation to diet during the COVID-19 lockdown.

H3 The confinement caused by COVID-19, caused people to behave healthily such as exercise and healthy eating.

Through non-probabilistic sampling, a nationwide sample was determined in Mexico of 1007 people between 18 and 70 years of average socioeconomic status, 64% were women and 36% men. The information was collected from May 29 to June 8, 2020, a period in which the families were in confinement. For this process, the online program Survey monkey was used. The sample profile is presented in Table 1. Data analysis was done using the SPSS version 25 statistical package.

**Table 1.** Sample demographic information

VARIABLE	MÉXICO		
		FRECUENCY	%
Gender	Female	642	64%
	Male	365	36%
Years	From 18 to 25 years	403	40%
	From 26 to 43 years	199	20%
	From 44 to 55 years	176	17%
	Over 55 years	229	23%

Source: Own elaboration with SPSS (25).

For the descriptive analysis of the data, each of the attitudinal phrases of the instrument were taken and evaluated on a Likert scale and nested through the top two box and bottom two method, the two highest measures (4 and 5) were joined and placed in the group called top two box; on the other hand, on the other hand, the lowest averages (1 and 2) joined, placing themselves in the group called bottom two box; and finally, the middle point neither in agreement nor in disagreement (3), was left as indifferent, always taking into account the positive or negative sense of each attitudinal phrase and not being necessary that the positive attitude coincides with the measure nested in the box of top two box, being able to find in the box bottom two box sought in this way a variable in ordinal scale that avoids bias by taking only the extreme measures.

## RESULTS

When analyzing construct 1. Psychological Factors (Exercise and mental health), three trends were identified at the level of behavior in the face of the pandemic in relation to the psychological factors of attitude towards the pandemic, (Table 2):

**Table 2.** Construct 1. Psychological Factors (Exercise and Mental Health)

ITEM	Women			Mens		
	Top tow box	Undefined	Botton tow box	Top tow box	Undefined	Botton tow box
1.1 I am doing body and mind balance exercises in daily activity during COVID-19	59%	20%	21%	57%	22%	21%
1.2 Humor has been one of the means chosen to keep spirits up in times of confinement	79%	16%	5%	78%	18%	4%
1.3 I am optimistic about the development and evolution of the COVID-19 pandemic	51%	27%	22%	51%	25%	23%
		n=642			n=365	

Source: Own elaboration with SPSS (25).

It is important to note that 59% of the people surveyed during the confinement, exercised to maintain

the balance of body and mind, also half of the interviewees 51%, were optimistic about the development and evolution of the pandemic.

A result to highlight is that humor has been one of the means chosen to maintain mood in times of confinement, where there was a 79% positive response. This data is significant because when the research was carried out, people had only been in confinement for three months.

In relation to our hypothesis “H1 Are there no significant differences between men and women in relation to exercise and mental health during the confinement by COVID-19? indicates that the isolation and daily coexistence of the respondents, made family habits equal, therefore, the difference in mortality between men and women, found in the literature, where a higher incidence was shown in men, could be deduced that they are problems already typical of this gender and not by the aspects related to different behaviors of consumption in pandemic situations.

For the testing of the hypothesis, an analysis of variances was carried out through student’s T, based on the confidence level of  $\alpha = .05$ , the difference is statistically significant as long as this value of  $\alpha$  is equal to or less than .05 (Difference:  $\mu_1 - \mu_2$ ). Therefore, it is confirmed that there are no differences in behaviors in psychological factors (exercise and mental health) during the confinement caused by COVID-19 between the behavior of women and men. Since, it is  $\alpha = .069$ , the difference is not statistically significant because this value, thus proving our hypothesis

The findings found with respect to construct 2: Cultural factors, which refer to the customs that this group of people carried out daily in relation to their diet in a situation of confinement due to COVID-19. Table 3.

**Table 3.** Construct 2. Cultural Factors (Food)

	ITEM	Women			Mens		
		Top tow box	Undefined	Botton tow box	Top tow box	Undefined	Botton tow box
2.1	I have changed my eating habits due to COVID-19	58%	24%	18%	57%	23%	20%
2.2	I'm eating healthier than before the lockdown	51%	30%	19%	50%	30%	20%
2.3	I have increased the preference for the consumption of healthier products	68%	25%	7%	64%	25%	11%
2.4	I have increased purchases of products that cover basic needs such as food, health, personal care in times of confinement	61%	21%	18%	61%	25%	14%
2.5	I have changed my luxury shopping behavior	55%	30%	15%	56%	29%	16%
			n=642			n=365	

Source: Own elaboration with SPSS (25).

In the analysis of this construct, three clear trends were identified at the level of behavior in the face of the pandemic in relation to cultural factors specific to eating habits during the confinement caused by COVID-19.

First of all, regarding the change of eating habits due to COVID-19, It was found that half (58%) of the respondents had modified their eating habits, this percentage is similar to the item I am eating healthier than before the confinement (51%), these data are important and with them it is shown that half of the respondents modified eating habits to a healthier form during isolation.

Where there were major changes was in relation to: I have changed my shopping behavior for luxury products (56%), I have increased the preference for the consumption of local products (68%), and I have increased the purchases of products that cover basic needs such as: food, health, personal care in times of COVID-19. (60%), since, according to the data obtained in the survey, it was shown that more than half of people have changed their consumption towards products that lead to a healthier lifestyle, focusing more on food and care products instead of allocating their spending to luxury products, as well as favoring the purchase from local producers.

Also, regarding the H2 hypothesis, is there no significant difference in men and women in relation to food during the confinement due to COVID-19?, no differences were found in the behavior of both sexes in relation to eating habits, which leads to think that the confinement to which people were forced to be in their homes caused eating habits to permeate throughout the family.

In the same way, for the verification of this hypothesis, an analysis of variances was carried out through the Student's T. Therefore, it is confirmed that there are no differences in cultural factors (changes in diet) during the confinement caused by COVID-19 between the behavior of women and men. Since, it is  $\alpha = .716$ , the difference is not statistically significant because this value of  $\alpha$  is equal to or greater than .05.

In relation to our third hypothesis H3 The confinement caused by COVID-19, caused healthy behaviors in people such as exercise and healthy eating, in the responses expressed by the respondents in the constructs analyzed above, it is shown that more than half modified their habits during the pandemic, making them healthier, so that the habitual coexistence in the family plays an important role in the changes in food and in the personal health through exercise, such as in the purchase of health-related products.

In an analysis of correlations (Pearson), based on the mean mental health and food of  $p = 3.57$  and mental health of 3.63 and health food of 3.47. It was found that there is a high positive linear correlation in the relationship of (mean) health by food and exercise with (mean) mental health of  $p = .835$  with a significance of 0.00. And in the relationship with food there is a moderate positive linear correlation of  $p=.655$  (see Table 4).



**Table 4.** Correlations

		Media Mental Health and Food	Variable Mental Health	Variable Health Food
Media Mental Health and Food	Pearson correlation	1	.835"	.655"
	Sig. (bilateral)		0	0
	N	1007	1007	1007

Source: Own elaboration with SPSS (25).

## DISCUSSION AND CONCLUSION

The daily coexistence to which individuals were subjected because of the confinement produced by the COVID-19 pandemic, made the behaviors of men and women similar, both sexes made changes to improve health and stay physically and mentally healthy, as mentioned by Sheth (2020), the context of coexistence, awareness and well-being, make behaviors change and adapt to the circumstances to which individuals are subjected, in this case to the daily coexistence caused by the pandemic, which makes households have a consumption of healthier products; likewise, as also mentioned by Sheth (2020), events that man does not control such as the COVID-19 pandemic, have modified consumption, the production of goods and services and the supply chain around the world. the situation due to the different variables and mutations and waves of contagion of COVID-19, has changed attitudes towards the pandemic, finding that today people around the world make demonstrations for the weariness and rejection of the confinement measures that governments have maintained.

The COVID-19 pandemic is not over yet, the consumption of basic products from the family basket has increased significantly, but not the luxury products, it is not known if this dynamic will continue when the pandemic ends completely and people return to everyday life, again men and women will return to pre-pandemic consumption habits, or the fact of coexistence and change of routines will modify and adapt to new behaviors.

What is clear is that the attitude towards the way each individual handled this crisis, will remain for a while, the psychological factors produced by exercise and the change in eating habits are related to the impact that the Covid-19 pandemic; when returning to normal, many of these habits are expected to endure, although unfortunately face-to-face activities will make individuals take more time in the transfer, which will prevent individuals from being able to perform these activities as they have been doing so far.

Therefore, it is very important not to see this pandemic as a temporary situation, since for the time it has lasted, it has gone through different moments and changes in the consumption of products and brands; that is why companies must be prepared, since there will always be new market opportunities, in topics such as health, technology, personal care and physical activity, among others. Companies must be dynamic to be able to develop strategies, due to the different moments of decision that the consumer has in front of the situations that are presented.

## Behavioral science implications

The findings of the study provide information on the activities carried out by people when they found themselves in a situation of isolation and that can be used by those in charge of generating marketing strategies, both for the commercialization of products using digital commerce, and for the promotion of them, the result of this research allowed us to show that the consumption of products is seen in a similar way in people due to daily coexistence, normally daily activities such as working, which implies several hours both in the transfer and in the work activity carried out Before COVID-19, they make healthy eating, exercising to stay healthy, positive during people's confinement, currently they have already returned to their normal activities outside the home and many of these habits could be followed to improve health by seeking a healthier diet, and greater exercise io.

## Limitations and future research directions

This study was carried out in a period of total isolation of people when only 3 months had passed since this pandemic, COVID-19 has spread and its effect on people's attitude has been changing, it is recommended to carry out a similar study in the current situations that although confinement no longer exists, situations still persist that limit people in their daily activities

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