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RESEARCH

Food purchasing and consumption habits during the COVID-19 Pandemic.

Hábitos de compra y consumo alimentario en tiempos de COVID-19

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Abstract

During the early months of the health emergency caused by the SARS-CoV-2 virus, non-essential activities in the public, private, and social sectors were suspended throughout the country. As a result, a large portion of the population altered their daily activities, affecting various aspects of people's lives, including those related to eating habits. This study analyzes the shopping and food consumption habits of Mexican consumers during the COVID-19 lockdown. The findings show that 75.7% of participants changed their food consumption habits, particularly regarding dinner and breakfast. Baked goods, followed by fruits and vegetables, showed the greatest increase in consumption. On the other hand, shopping habits changed for 51.7% of consumers, with a greater preference for supermarkets or hypermarkets when making purchases. In choosing where to shop, consumers placed higher importance on hygiene measures as well as the care and protection of employees. Overall, understanding food consumption patterns and shopping habits in a health crisis scenario helps to develop market-oriented strategies that are essential for the survival of commercial establishments.

Key words: Eating habits, dietary habits, Mexican consumers, health awareness health.

JEL code: D11, D12, M31.

Resumen

En los primeros meses de la contingencia sanitaria propiciada por el virus SRAS-CoV-2, en el territorio nacional se suspendieron actividades no esenciales en los sectores público, privado y social. Como consecuencia, buena parte de la población modificó sus actividades diarias, trastocado diversos aspectos de las personas, incluyendo aquéllos que tienen que ver con hábitos en la alimentación. En esta investigación se analizan los hábitos de compra y consumo alimentario de los consumidores mexicanos durante el confinamiento por COVID-19. Los hallazgos muestran que el 75.7% de los participantes modificaron sus hábitos de consumo alimentario, particularmente en la cena y desayuno. Productos de repostería, seguido de frutas y verduras fueron los que presentaron un mayor incremento en su consumo. Por otra parte, los hábitos de compra cambiaron para el 51.7% de los consumidores, eligiendo en mayor medida los establecimientos de supermercados o hipermercados para realizar sus compras. En la elección del establecimiento valoran

en mayor medida las medidas de higiene, así como cuidado y protección de los empleados. En general, conocer las pautas de consumo y hábitos de compra alimentario en un escenario de crisis sanitaria, permiten generar estrategias orientadas al mercado que son fundamentales para la subsistencia de los establecimientos comerciales. Palabras claves: Hábitos alimentarios, consumidores mexicanos, escala conciencia hacia la salud.

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Introduction

The presence of the SARS-CoV-2 coronavirus was first reported in Wuhan, China, in December 2019. The disease it causes was declared a pandemic by the World Health Organization on March 11, 2020 (WHO, 2020a). Since then, the number of confirmed cases of COVID-19 has continued to increase, with estimates indicating more than 35 million confirmed cases worldwide by September. The Americas currently account for 53.4% of all confirmed cases, while in Mexico, the 385,000 diagnosed cases represent 2.1% of the global total and 4.4% within Latin America (WHO, 2020b). These figures reveal both the global and national impact of the pandemic in terms of public health. However, its repercussions go beyond health and affect various aspects of people's daily lives.

As of March 30, extraordinary measures were implemented throughout the national territory, which led to the suspension of non-essential activities in the public, private, and social sectors in order to mitigate the spread and transmission of the virus (Secretaría de Salud, 2020).

From that moment, strategies such as "social distancing" and the contingency plan "Stay at Home" were implemented as part of national health policy. For the population, these measures implied restrictions on mobility and movement, drastically limiting coexistence in high-risk areas (enclosed spaces, high-density locations, visits to family and friends, gatherings of any kind, etc.) and non-essential activities (sports, travel, any social, recreational, or leisure-related activities). In other words, it involved an interruption that included the suspension of certain economic activities and a halt to mass gatherings-along with a strict stay-at-home order, placing the population in an unprecedented scenario of social distancing and confinement.

Despite the measures implemented, the epidemic officially appeared in Mexico for the first time on January 13, 2020, with the first recorded case. By February 24, seven cases had been reported. By the date confinement was declared (March 30), the accumulated total had reached 1,645 confirmed COVID-19 cases, and by early April, the federal government reported 2,268 confirmed cases. From that point on, the trend showed an exponential increase, reaching 62,629 confirmed cumulative cases by May 15, and one month later, 186,178 cases according to reports from the Secretaría de Salud. According to the federal government's official platforms, the highest number of new daily reported cases occurred on July 20, with 8,647 new infections, contributing to a total of 395,713 confirmed cumulative cases (Dirección General de Epidemiología, 2020).

The downward trend in the behavior of the COVID-19 epidemic in Mexico began on July 21, when 366 fewer cases were reported compared to the previous day. However, it is important to highlight that the curve of confirmed cumulative cases continued to rise. Since that date, daily national reports have shown a gradual decline. On September 28, the country reached its lowest daily count at that time, with 1,826 new cases. By then, the total number of confirmed cumulative cases stood at 797,367, and there had been 81,033 deaths caused by the virus, impacting thousands of households across the country (Ibid.).

Although current data on the exact number of people under confinement in Mexico is variable, the Economic Commission for Latin America and the Caribbean (ECLAC, 2020:29) noted that "...nationwide quarantines are more effective in reducing people's mobility. This is confirmed by the majority of countries that implemented such measures, with the exception of Haiti, where mobility was reduced by only about 30%. Other countries where mobility did not decrease as much, despite the measures implemented, include Jamaica and Mexico..."

Citizen mobility changed significantly during the early months of the partial lockdown; however, the months intermediate period- April to June-

saw the most pronounced decrease in mobility. Approximately 43% of the Mexican population (128,649,312.95) reduced their mobility, decreased their presence in public spaces, and eliminated or staggered non-essential activities.

As a consequence of the above, various activities that were previously conducted in person began to be carried out online; some were suspended, and in other cases, activities continued under new conditions and measures such as reduced capacity, controlled schedules, social distancing, among others. In this way, a large part of the population modified their daily activities, leading to changes in consumption habits, purchasing behaviors, and lifestyles.

On the other hand, the national business sector showed marked growth from 2009 to 2019; however, the impact of the measures implemented during the health contingency directly affected business dynamics and employment generation. Out of a total of 1,873,564 companies, 224,296 requested emergency loans or financing, and around 1,115,983 implemented technical stoppages or temporary closures due to the COVID-19 situation (INEGI, 2020a).

In this scenario, companies had to adjust and, in some cases, "reinvent" themselves by adopting new operating models such as remote work, online sales operations, reduced hours, limited customer visits or capacity, and changes in business focus, among others. A large number of companies suffered income losses, making financing the most requested support, and personnel adjustments another common measure. By April, approximately 32.9 million people in the country were unemployed, with 92.9% of that total related to COVID-19–derived actions. Consequently, 65.1% of households experienced a reduction in income (INEGI, 2020b).

Thus, the pandemic exposes a severe economic crisis. Some studies predict an economic contraction of 4.5% and a reduction in GDP ranging from 2.5% to 6.0% for the country in 2020 (Amador et al., 2020; Gaytán, 2020). Basically, as a result of the implemented measures, the economic situation, and in the health context, the various activities carried out by individuals have been clearly affected, one of which is food consumption. Although food retail establishments have continued operating as they are considered essential services, factors such as dining out, food availability and variety, reduced shopping hours, and the new economic situation have conditioned the purchase and consumption of products.

At the same time, feelings of distress and apprehension which usually affect about 10% of the global population at high levels (Zoccolini, 2014) were intensified by the health crisis. In some cases individually, and in others jointly, economic, social, and environmental factors have led to suffering associated with panic attacks, phobias, anxiety, among others, which can directly impact individuals' eating habits.

On the other hand, the "Stay at Home" strategy has also resulted in more time available for preparing and cooking meals, family bonding, and the preparation of more elaborate dishes. Additionally, some individuals seek healthier diets or attempt to replicate recipes shared through social media and other communication channels.

In any case, it is undeniable that environmental factors have influenced consumers and suggest that individuals' food purchasing and consumption behaviors may have changed. Therefore, the objective of this research is to analyze food purchasing and consumption habits during the COVID-19 pandemic.

Theoretical Framework

Research in the social sciences related to the COVID-19 health emergency is scarce but showing an upward trend. Some of these studies focus on the pandemic's impact on the media system (Casero-Ripollés, 2020); eating behavior (Maraver-Romero, 2020; García-Álvarez et al., 2020; Vergara-Castañeda; Laguna et al., 2020); and the economic and financial crisis (Ortiz et al., 2020; Campos and Esquivel, 2020; Baker et al., 2020; Andersen et al., 2020; Baldwin and Weder di Mauro, 2020, inter alia), with preliminary results.

Regarding eating behavior, authors such as Maraver-Romero (2020) suggest that the Mediterranean diet will play an important role in the fight against COVID-19 by boosting the immune system. Laguna et al. (2020) found that Spanish consumers increased their consumption of products such as milk, eggs, fresh vegetables, bread, meats, etc., and reduced purchases of alcohol, ready-to-eat food, desserts, bakery products, instant soups, among others, during the lockdown, relating these changes to health improvement motivators. On the other hand, García Álvarez et al. (2020)

associate a possible increase in tobacco and alcohol consumption as a negative emotional response to the confinement situation.

Regarding Mexican consumer behavior, consumers expect to reduce their frequency of trips, visits to shopping centers, and social events after COVID-19 (McKinsey and Company, 2020). Preference for online stores maintained an upward trend during the contingency months, with a percentage twice as high as at the beginning, positioning it as one of the fastest-growing channels. Likewise, the use of delivery service platforms has also increased, with younger people and those in socioeconomic level C mainly starting to prepare their own meals, while higher socioeconomic levels showed increased use of home delivery services (AtlantiaSearch, 2020). In this regard, the Mexican Association of Online Sales (2020) details that the three main reasons consumers prefer online shopping are: 55% of people do not want to leave their homes due to the contingency, 48% want to avoid crowds in physical stores, and 35% of consumers indicate that they have found more and better offers online.

It is also observed that the high volatility in demand is causing brand switching (Entrepreneur, 2020); 46% of consumers have tried other options, driven by the lack of availability of their usual products, although only 9% will change their preference after the contingency ends (McKinsey and Company, 2020). Contrary to the purchase channel, 72% of people who have purchased or paid for a service online for the first time will continue to use this method after confinement ends (Mexican Association of Online Sales, 2020).

In general, at the national level, research is being conducted from various perspectives; however, studies focusing on food demand remain scarce. Therefore, this research seeks to fill that gap in the literature and provide elements to understand the impact that the health contingency has had on the food purchasing and consumption habits of Mexican consumers.

Methodology

To achieve the general objective, an empirical study was conducted with Mexican consumers. A survey was administered to consumers over 18 years old, using the non-probabilistic snowball sampling method, which is defined as a technique to locate the research subject where one individual provides the researcher with the name of another, who in turn provides the name of a third person, and so on (Atkinson & Flint, 2001). In other words, sample units are identified through the researcher's direct and indirect networks and the object of study (Baltar & Gorjup, 2012). Using this method, 867 surveys were collected from people residing in Mexico. Data collection took place online via the Google Forms platform from May 17 to May 24, 2020. Prior to administration, several pilot tests were conducted to ensure comprehension of all included items and to identify and resolve any technical difficulties that might arise when responding to the survey.

Data were analyzed using SPSS version 21.0. Descriptive statistics were calculated, employing frequency, mean, and median to compare results among variable groups.

Results and discussion

The research findings show that the largest proportion of the sample, 31.6%, is concentrated in the 18–25 age group, followed by those aged 41–45 with 13.8%. Regarding gender distribution, men represented 31.8% and women 68.2%. In terms of monthly income, 21.5% fall into the category of 5,000–10,000 Mexican pesos per month, which according to the AMAI rule, the participants fall within the Socioeconomic Level (SEL) C and C+ (upper middle) (AMAI, 2018). 58.4% have university studies, while 1.3% have only completed up to secondary school. The largest proportion are government employees (18.0%), followed by private company employees and students, with 22.0% and 23.9%, respectively (Table 1).

Regarding their eating habits, 75.7% of the participants consider that they have modified their dietary habits during the confinement period. Breakfast showed the least changes, remaining the same as usual for 38.1% of participants; lunch experienced partial modifications in 36.1% of respondents, while 40.4% consider having completely changed their dinner habits. These changes may be related to the availability of time to prepare food at home, stopping dining out for dinner, or ordering food delivery (Table 2).

Among the reasons for changes in eating habits,

time is a key factor. Staying at home has led to greater availability to prepare different meals, try recipes, or make dishes that require more time to cook. Although some studies link stress or anxiety caused by confinement to changes in consumption habits, in this research it was the second reason, but its rating is only slightly above average (2.6 on a five-point scale). Reasons related to health improvement, such as dieting to control weight, had a mean score of 2.3, and other health-related reasons scored 2.2, suggesting that individuals are not yet ready to make changes in this regard (Table 3), which is reflected in the foods whose consumption has increased (Figure 1).

The foods whose consumption increased the most include baked goods (13.4%), fruits (12.5%), and vegetables (12.1%), as well as snacks or appetizers (10.4%). It is important to note that both baked goods and snacks can be considered low-nutritional-value foods (Figure 1). In the case of alcoholic beverages, their low consumption (2.2%) is related to the restrictions on the sale and consumption of alcoholic drinks that were implemented in various states across the country.

Regarding food purchasing habits, 51.7% of respondents consider that their habits have changed, and 48.3% report a partial change. During the

Table 1. Socio-demographic and economic characteristics of the sample

Age	%	Educational level	%	Income	%	Occupation	%
18-25	31.6	Primary	0.3	Less than 5,000	22.5	Student	23.9
26-30	10.7	Secondary	1.0	5,000-10,000	21.5	Private company employee	22.0
31-35	9.0	High school	12.0	11,000-15,000	15.6	Government employee	18.0
36-40	6.5	Technical	1.2	16,000-20,000	11.6	Homemaker	9.2
41-45	13.8	University	58.4	21,000-25,000	8.4	Business owner	5.2
46-50	9.6	Master's	18.3	26,000-30,000	5.7	Independent professional	18.3
51-55	8.7	Doctorate	8.3	31,000-35,000	4.5	Currently unemployed	3.3
56-60	7.6	**Gender**	%	36,000-40,000	3.0		
61-70	2.4	Male	31.8	More than 41,000	7.3		
70 and over	0.1	Female	68.2				

Source: Own elaboration

Table 2. Degree of changes in meals

	Remains the same (%)	Partially modified (%)	Completely modified (%)
Breakfast	38.1	29.5	32.8
Lunch	32.3	36.5	26.8
Dinner	29.6	34.0	40.4

Source: Own elaboration

Table 3. Reasons for changes in eating habits

Items	Mean values	Std. Dev.	Ítems	Mean values	Std. Dev.
Greater availability of time to prepare meals	3.7	1.442	Others	2.1	1.518
Stress or anxiety	2.6	1.465	Economic situations	2.0	1.256
Diet for weight control	2.3	1.489	Lack of time to cook	1.7	1.220
Health-related reasons	2.2	1.420	Food shortages	1.7	1.120

Source: Own elaboration

contingency period, purchases were made mostly at supermarkets or hypermarkets, with an average score of 4.2 on a 5-point scale. These are followed by neighborhood grocery stores (3.0) and convenience stores (2.9). This may be related to the type of distribution, as these establishments generally have more robust supply chains and, in some cases, offer online sales that facilitate purchasing.

At the same time, there is a clear decline in the use of street markets, gourmet shops, or purchases made directly from producers. These findings align with the study conducted by AtlantiaSearch (2020), which found these channels to be less relevant (Table 4).

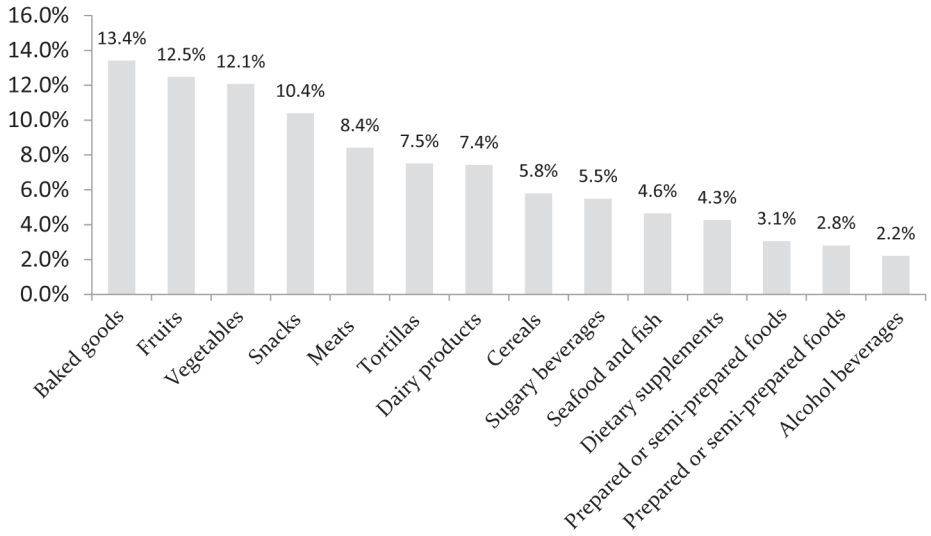
When investigating the aspects most considered when purchasing food, hygiene measures stand out with an average score of 4.2, followed closely by employee care and protection, as well as product quality, each with a score of 4.1. It is noteworthy that home delivery service and online sales did not rank among the highest average values, which suggests that during a health emergency hygiene is the most valued attribute, even above product prices (Table 5).

Conclusions

The confinement resulting from the COVID-19 health emergency declared in Mexico in March 2020 has impacted the population in various aspects of daily life. The number of confirmed coronavirus cases has continued to rise,

along with measures implemented by governments and individuals. As a result, lifestyles have been affected, leading in some cases to adjustments and

Graph 1. Foods with increased consumption



Source: Own elaboration

Table 4. Purchases by type of establishment

Establishment	Mean value	Std. Dev	Establishment	Mean values	Std. Dev.
Supermarket or hypermarket	4.2	1.263	Directly from the producer	1.6	1.192
Neighborhood grocery store	3.0	1.581	Gourmet stores	1.5	1.010
Convenience store	2.9	1.483	Other	1.4	1.102
Traditional market	2.2	1.516	Street markets	1.3	0.944
Restaurants	1.8	1.156			

Source: Own elaboration

Table 5. Evaluation of aspects in food establishments

Aspects	Mean value	Std. Dev.	Aspects	Mean value	Std. Dev.
Hygiene measures	4.2	1.092	Promotions and discounts	3.5	1.399
Employee care and protection measures	4.1	1.175	Home delivery service	3.3	1.601
Product quality	4.1	1.143	Capacity control	3.3	1.509
Nutritional aspects	3.9	1.167	Pick-up service	3.1	1.565
Location	3.9	1.295	Local or regional origin	3.0	1.487
Prices	3.8	1.323	Recommendations	2.8	1.443
Productos availability (supply)	3.6	1.431	Additional services (e.g. parking)	2.8	1.517
Costumer service and attention	3.5	1.375	Online sales	2.8	1.691

Source: Own elaboration

changes not only in economic, social, psychological, and work-related matters, but also in food purchasing and consumption habits, as well as in health perceptions.

In this context, a study was conducted with Mexican consumers to analyze food purchasing and consumption habits during COVID-19. The findings show that the contingency has led to changes in food purchasing behavior, as more than half of consumers report having modified their habits (51.7%). Purchases from supermarkets and hypermarkets are prioritized over options such as neighborhood grocery stores, markets, and street markets (tianguis), among others. Factors related to hygiene measures, such as safety and protection—have become the most important for consumers when deciding where to purchase food. These priorities make sense considering the recommendations issued by health authorities to the general population, which emphasized hygiene, social distancing, and cleanliness measures. While all establishments may follow these guidelines, the reality is that their ability to respond and the sense of safety conveyed to consumers may vary in favor of large-scale retailers. Contrary to what might be expected, online sales services were not considered a decisive factor during the initial months of the pandemic when choosing where to shop.

At the same time, three-quarters of consumers acknowledge that their eating habits were affected during the health contingency and confinement. These changes were especially noticeable when preparing meals at home, as people had more time available to cook particularly dinner due to being confined. This trend is associated with economic factors and time restrictions, as well as the closure or limited operation of food establishments, making dining out less feasible. Similarly, though to a lesser extent, changes in diet were attributed to stress or anxiety experienced during the pandemic. The loss of loved ones or illness due to COVID-19, combined with prolonged home confinement, created stressful conditions that influenced individuals' eating behaviors.

In addition to these emotional and psychological factors, economic considerations played a key role. In April alone, 32.9 million people in the country were either unemployed or had suspended work, of whom 92.9% were affected in some way by COVID-19. At the same time, 65.1% of households reported a decrease in income as a consequence of the pandemic (INEGI, 2020b).

It is also important to consider that health conditions can influence a person's eating behavior. In Mexico, the prevalence of chronic degenerative diseases plays a significant role in public health and lifestyle. In 2018, 75% of adults in the country were overweight or obese, and 10% had diabetes, and 18% had hypertension (Álvarez-López et al., 2020). These conditions should ideally influence individuals to pursue healthier diets. While the results show that during the health contingency consumers reported an increase in the consumption of fruits and vegetables—12.5% and 12.1% respectively—the most significant increase was in the consumption of baked goods (13.4%). These findings are noteworthy, as one might expect that consumption of less healthy foods would decrease as an added form of self-care. However, other factors

such as price and availability may also influence the motivation to consume such products.

In general, the national health contingency context has had a direct impact on food purchasing and consumption habits. Without a doubt, consumers are increasingly seeking nutritious food, while also prioritizing product quality.

From a business perspective, identifying consumer behavior patterns and food purchasing habits is essential for the survival of commercial establishments. These businesses can develop strategies that emphasize health, care, and hygiene particularly among small businesses, which have been the most affected during the pandemic. It is important to remember that the continuity of these businesses is vital to the recovery and dynamism of the economy. Therefore, understanding the consumer during times of crisis becomes more than ever a key element for business growth.

From an academic standpoint, unexpected events like the arrival of COVID-19 have made the world's interconnection more evident than ever. Knowledge and learning are essential tools to face the challenges confronting humanity. Specifically, from the perspective of this study, understanding consumer attitudes, motivations, and reactions contributes to a deeper comprehension of the transformations and changes that occur in contexts of insecurity and uncertainty.

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