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Chapter 5

Exploring Mexican Attitudes Toward the Front Labeling System for Food and Beverages:
A Twitter Analysis

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ABSTRACT

Recently, the Mexican government implemented a simple labeling system that would apply to 85% of the food products. The aim of the system is to report high amounts of calories, sugars, sodium, fats and trans fats. Labels are displayed on the front of the package individually or in groups. No studies have been conducted to analyze public attitudes toward the labeling system. In order to fill this gap, the purpose of the study is to conduct an exploratory analysis of the Mexican attitudes toward the new labeling system on Twitter. The Twitter API was used to collect tweets published between January 01, 2020 to June 30, 2021. QSR NVivo 12 software was used to conduct thematic content analysis. The emerged themes were related to consumer education, impact on the industry and businesses, and support or rejection to the labeling system. A category emerged as reflection of the unique cultural traditions.

INTRODUCTION

Obesity and chronic diseases are the leading causes of mortality in Mexico (WHO, 2018). These linked factors are prevalent among the population and continue on the rise. The latest national survey indicated 36.1% of Mexican adults are considered obese, whereas only 23.5% has a healthy weight (Barquera & Rivera, 2020). The situation is attributable to a shift of the Mexican diet over the past 40 years, shifting from mainly fresh and organic foods to ultra-processed products high in sugar, salt and fat. Arguably, the best example is the soda consumption. Mexico has one of the highest global rates of soda consumption (Colchero et al., 2016), averaging 137 liters consumed individually per year (Galvez, 2020).

The recent pandemic has exacerbated the public health problem. The large number of individuals with COVID-19, and more important, the large number of mortality rates (now exceeding the US, UK and Italy rates according to Statista, 2020) can be explained by the unhealthy habits of the population. In particular, the consumption of sugary beverages has been identified as a possible culprit (Bello, 2020). In response, the government implemented a "National Strategy for the Prevention and Control of Overweight, Obesity, and Diabetes" sponsored by corporate funding. The strategy would cover innovation and research in order to promote a healthier lifestyle (Secretaria de Salud, 2013).

Recently, the Mexican government implemented a simple labeling system that would apply to 85% of the food products consumed in the country. The Front Labeling System for Food and Beverages (SEFAB in Spanish) was implemented on October 1, 2020. This system was developed by the National Institute of Public Health and led to the update of the official Mexican standard NOM-051-SCFI/SSA1-2010. The implemented system consist of black octagons with white letters (see Figure 1). The aim of the system is to report high amounts of calories, sugars, sodium, fats and trans fats. Labels are displayed on the front of the package individually or in groups.

Figure 1. Legends/warning labels
(Caloric excess; sodium excess; trans-fat excess; sugars excess; saturated fats excess).

Due to its recency, no studies have been conducted to analyze public attitudes toward the most recent labeling system or any other recent effort. Researchers called for investigations of consumer perceptions of the information provided on food labels and the resulting consumer decisions (Andrews et al., 2021; Przyrembel, 2004). In order to fill this gap, the purpose of the study is to conduct an exploratory analysis of the Mexican attitudes toward the new labeling system on Twitter. Moreover, in response to the United Nations' goals for Sustainable Development #2 Zero Hunger (Improved nutrition), #3 Good Health and Well-Being and #12 Responsible Consumption and Production, the present study reports on investigations of Mexican consumer perceptions of the new format on food and beverage labels (as posted to Twitter) and the resulting consumer decisions.

BACKGROUND

Chile was the first country to jointly require front-of-package warning labels, restrict food promotion directed to children, and ban sales in schools of products having excess of calories, sugars, sodium and fats. Implemented in 2016, the labeling system had a significant impact on the consumer. According to Taillie et al. (2020), at the time the measure was implemented, a decline of 24% on purchases of labeled beverages was observed. These authors noted that this effect on purchases could be attributed to the industry, consumer behavior or both.

Although the original purpose of food labeling was to avoid the misleading of consumers, there was a shift towards the consumer education via labeling as the US American Nutrition Labeling and Education Act (1993) illustrated (Przyrembel 2004). The introduction of the Chilean-style labeling system using the "Stop Sign" symbols was considered a threshold for consumer education and communication effort (Andrews et al. 2021).

METHODOLOGY

This study performed a content analysis including both hashtag analysis (hashtag frequency) as well as word analysis (word frequency, word combination frequency as well as cluster document-level analysis) of tweets. Three stages of the study included: (1) Data collection using Twitter API v2/Postman; (2) Data analysis using QSR Nvivo 12 and (3) Reporting of thematic analysis findings.

The Twitter API was used to collect historical tweets regarding the recently implemented labeling system. The following terms in Spanish were given as input to collect Tweets published between January 01, 2020 to June 30, 2021.

Figure 2. Methodology
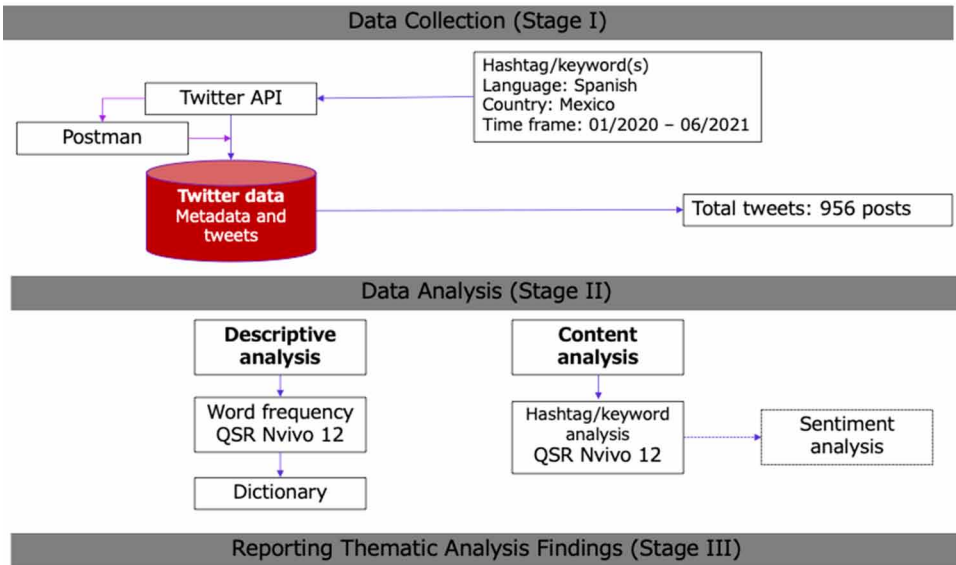
1. Hashtags: #etiquetadoparalasalud #etiquetadoclaroya #etiquetadonutrimental #NOM051
2. Keywords: nuevo etiquetado; etiquetado de alimentos; etiquetado nutricional; etiquetado frontal; etiquetado frontal de advertencia; etiquetado frontal octagonal; etiquetado nutrimental.

Language was restricted to Spanish and country of origin was Mexico. The country of origin was necessary as similar regulations are being implemented in other Spanish speaking countries (e.g. Colombia, Spain). In total, 956 posts were pulled from Twitter.

To analyze the sample, the QSR NVivo 12 software was used to conduct thematic content analysis. The software allows to obtain a preliminary visualization of themes, a precise thematic organization using predefined themes, and the integration of themes emerged from the data. First, a dictionary of themes was developed based on Word frequency. Next, a series of patterns emerged from the data after initial coding.

RESULTS

Three major categories were identified and named according to the central themes across the data set. The themes ranged from messages related to consumer education, impact on the industry and businesses, and support or rejection to the labeling system.

The themes included in the first category represented different circumstances and attempts to foster consumer education. To illustrate, tweets mentioned a series of workshops to educate consumers about the meaning and benefits of the system, as well as efforts in the classroom to educate the young consumers. The category also included messages highlighting the insufficient information about the purpose and scope of the labeling system. Since the implementation occurred during the COVID pandemic, some messages reinforced the need to make better food choices after the negative impact of the pandemic in Mexico.

Another emerged theme focused on the effects on the junk food industry and businesses, such as product reformulation, changes on packages, modified advertising, just to name a few. Messages related to the theme expressed the public benefits of the implementation of the system by uncovering the realities of a number of products that on surface appear as healthy options. A related group of messages celebrated the reformulation of many food offerings for a better consumer health.

Other salient category focused on the negative aspects of the implementation of the systems. One of the categories simply rejected the idea and covered a series of cynical messages. These messages revolved around the realization that the introduction of the system may not change the habits acquired early in life or the preferences of the consumer. A series of jokes and memes by the absence of the typical illustrations or mascots originally featured in the package were also frequent. Some jokes made reference to the null effect on consumer decisions because of the changes on packaging.

DISCUSSION

The present study reaffirms the potential of social media as a tool for uncovering attitudes toward the implementation of efforts to combat the obesity and chronic diseases. In particular, Twitter data demonstrated the advantages of sourcing an ample range of information to uncover and classify a series of themes. The focus on attitudes toward the recently implemented Front Labeling System for Food and Beverage emphasize the mixed reactions to the government initiative. The findings show that tweets were used to educate the consumer, highlight the benefits of the labeling system, highlight the impact on the food industry and businesses, as well as express a series of rejection and cynical messages.

Przyrembel (2004) identified three interrelated aims of food labeling, citing (1) information to the consumer; (2) protection to the consumer and (3) fairness in trade. Previous studies concluded that the use of nutritional labels is associated with an improved nutrition knowledge (An et al. 2021). Accordingly, food labeling would provide "correct information on the identity, nature and composition of the food should prevent the consumer to make choices which are inappropriate for a healthy diet and should guarantee equal opportunities for the marketing of comparable foods." (p. 360). Therefore, the uncovered themes frequently cited at least one of these interrelated aims. Therefore, it is safe to conclude that the majority of tweets revolved around the topics previously identified by Przyrembel (2004).

Notably, the third salient category was not previously identified in the literature as it appears to be a unique form of expression of the Mexicans or perhaps Latinx. Stanton (2019) found that Mexicans exhibit strong ties to traditions in food preparations while also display interest in modern conveniences. This was also evident in a series of tweets expressing some form of rejection to the new system because the preservation of Mexican traditions in meal preparations or consumption.

In sum, the uncovered themes were mixed, including positive, neutral (e.g. facts, announcements) and negative messages. This is indicative that not all the consumers are embracing the new system. The labeling system is currently being implemented, so it remains to see if the effects on consumer purchases are similar to that achieved in Chile.

Future work may include a sentiment analysis dealing with people's opinions, attitudes and emotions. A sentiment analysis may report an alternative measure of the perception of the public. Also, future research may include an analysis of illustrations or videos posted to other social media platforms. As different segments of the population navigate specific platforms because of their interests or opinions, it would be interesting to compare the attitudes expressed on different social media. As other countries (Colombia and Spain) undergo the implementation of similar systems, it would be useful to conduct similar analyses in these countries. A comparison of the emerged themes across World regions can also be a fruitful avenue for research.

In sum, our findings draw some implications for government, organizations, researchers and consumers:

- The study confirms that the government use of social media has evolved to educate and engage the population.
- The effects of the system on product reformulations and other adaptation to marketing efforts (packaging, advertising, etc.) are still developing. So, affected companies should maintain meaningful exchanges with consumers in social media to increase the customer knowledge about the reformulation and their impact on their health.

- Social media may provide consumers with the opportunity to learn more about the benefits of the system implemented by the government and the food industry response.
- Twitter API v2 has a great potential as a data source as well as a predictive system. In particular, this tool allows researchers to obtain real-time data, which provides means to identify changes in public perceptions over time.

The study has a series of limitations due to the inherent shortcomings arising from the common uses of the Twitter platform. As Twitter appears to serve as a platform for some people to criticize, complain and generate conflict among groups, the rationale for the emerged negative themes may need to be further scrutinized. Another consideration is that social media appears to serve for the spread of fake news. Therefore, the social media expressions need to be analyzed within the appropriate context. Last but not least, the use of NVivo software poses the limitation that classification of messages into categories cannot identify sarcasm or irony. Despite its limitations, the present study presents preliminary findings on the Mexican consumer perceptions of the new food labels and the resulting consumer decisions.

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