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Analysis of the Most Influential Social Networks in Online Shopping in Mexico

Análisis de las Redes Sociales más Influyentes en las Compras en Línea en México

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Abstract

The present study addresses the relationship between the use of social media and consumer purchasing decisions, with the purpose of providing valuable information for entrepreneurs to effectively allocate their resources on relevant social platforms. The focus is based on the Mexican context, with the primary objective of identifying the most influential social networks in purchasing decisions and assessing whether the variable of age plays a significant role in this process. The methodology employed combines a literature review using the Web of Science database with a quantitative analysis of data collected from the National Survey on Availability and Use of Information Technologies in Households (ENDUTIH) conducted by the National Institute of Statistics and Geography (INEGI) for the year 2022. The findings reveal that the social media platforms with the greatest influence on online purchases in Mexico are Instagram, Facebook, WhatsApp, and Twitter. Surprisingly, the study did not find significant evidence supporting the influence of age on online purchasing decisions. These results have significant implications for online marketing and advertising strategies within the Mexican context.

Social networks, Online Shopping, Marketing

Resumen

El presente estudio aborda la relación entre el uso de redes sociales y las decisiones de compra de los consumidores, con el propósito de proporcionar información valiosa para que los empresarios direccionen de manera efectiva sus recursos en las plataformas sociales pertinentes. El enfoque se centra en el contexto mexicano, con el objetivo principal de identificar las redes sociales de mayor influencia en las decisiones de compra y de evaluar si la variable de edad desempeña un papel significativo en este proceso. La metodología utilizada combina una revisión documental en la base de datos de Web of Science con un análisis cuantitativo de los datos recopilados a partir de la Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares (ENDUTIH) del Instituto Nacional de Estadística y Geografía (INEGI) correspondiente al año 2022. Los hallazgos revelan que las redes sociales con mayor influencia en las compras en línea en México son Instagram, Facebook, WhatsApp y Twitter. Sorprendentemente, el estudio no encontró evidencia significativa que respalde la influencia de la edad en las decisiones de compra en línea. Estos resultados tienen implicaciones importantes para las estrategias de marketing y publicidad en línea en el contexto mexicano.

Redes sociales, Compras en Línea, Marketing

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Introduction

The widespread use of social networks has seen a marked increase in recent years. According to a study conducted in 2020, which was based on a sample of university students in Spain, the amount of time that young people spent daily on social networks in the period between 2016 and 2019 was analysed. The results of this study revealed a noticeable increase in the amount of time young people spent on social networks, and applications of great relevance in this trend were identified, among which WhatsApp, Instagram, YouTube and Twitter stood out (Giraldo-Luque & Fernández-Rovira, 2020). The significant increase in the number of hours people spend on social networks raises the need to investigate how these platforms can influence purchasing decisions, which, in turn, has implications for the strategies and resources that companies allocate to these platforms.

The relationship between purchase intention and the use of social media has generated growing interest among researchers. A relevant example of this trend is found in a study conducted in Nigeria in 2022, which found that social networks play a significant role in influencing online purchase behaviour (Nasidi *et al.*, 2022). Understanding the degree to which a specific social network generates engagement that prompts potential buyers to purchase products becomes essential to effectively target resources based on the influence these platforms exert on purchasing decisions.

In an additional study conducted in a developing country, specifically Saudi Arabia, to reveal the impact of social media marketing activities, it was found that social media marketing activities have a significant influence on customer behaviour. This impact is most prominent when engaging content is presented that resonates with consumers, with a particular emphasis on product personalisation (Bushara *et al*., 2023). Thus highlighting the power of digital marketing through social media for businesses, such as in the case of this study which is the restaurant industry, emphasising the importance of studying this topic.

In particular, social media platforms such as Facebook, YouTube, Twitter, Instagram and WhatsApp have become essential tools for companies' marketing and communication strategies.

These platforms provide an enabling space to increase brand awareness, foster consumer preference and strengthen customer relationships (Lin, 2021). Through the creation of engaging and relevant content, companies can reach mass and diversified audiences, generating brand recognition and recall, (Ibrahim, 2021). Ultimately, the strategic use of these social networks can contribute to business success by influencing consumers' purchasing decisions and strengthening the brand's image and reputation in the marketplace.

In order to determine the main social networks that can influence the purchase decision process, several studies have yielded significant results in different international contexts. In a study conducted in Italy and Slovakia, it was highlighted that the most relevant social networks for this purpose are Facebook, Messenger, Instagram and Twitter (Ali Taha *et al*., 2021). A relevant aspect highlighted in this study is that these social networks have oriented their design towards generating commercial opportunities by having tools specifically designed for advertising and commerce. This orientation towards commerce suggests a high potential to influence users' purchasing decisions.

On the other hand, in the UK, the social networks that have established themselves as the most widely used to reach consumers include Facebook, Twitter, YouTube, Instagram and Pinterest. Among these platforms, Facebook emerges as the most popular, closely followed by Instagram, according to an article published in 2021 (Cao *et al*., 2021). This information highlights the relevance of these social networks in communicating with consumers in the UK context, and highlights the importance of considering their impact on marketing and sales strategies.

The findings of these studies, which cover both the Italian and Slovakian context as well as the UK context, provide significant insight into social networks that can play a prominent role in purchasing decisions, and highlight the importance of understanding how these platforms can influence consumer behaviour in different regions of the world.

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Another relevant study highlights the importance of the user experience when using social media platforms, as this experience can generate a sense of enjoyment. Moreover, these platforms enable the creation of more detailed interactions with products and make it easier for shoppers who have already used a product to add their feedback (Barta *et al*., 2023). This observation underlines how user experience on social media can influence their perception of products and ultimately their purchasing decisions.

A study conducted in Bangladesh, focusing on the impact of social media on online shopping behaviour, found that factors such as celebrity endorsements, promotional tools and online reviews have a positive and significant effect on online shopping behaviour (Miah *et al*., 2022). This finding is highly relevant, as it highlights that it is not enough to simply have a presence on social media; it is equally important to manage them properly in order to positively impact potential buyers and leverage the potential that these platforms offer in the buying process.

In relation to the influence that social networks can have on repurchase intention, a study has identified that, in the context of young individuals, these platforms contribute to an increase in online repurchase intention through a phenomenon referred to as "eWOM" (electronic word of mouth). This term refers to interactions comprising opinions, comments, recommendations and experiences expressed by customers on websites and/or social media profiles associated with brands (Müller-Pérez *et al*., 2023). This suggests that business owners should pay special attention to this type of content on their social media platforms in order to retain customer loyalty.

In light of the above, the central question of this study arises: which social networks play a key role in online shopping in the Mexican context? To address this question, the National Survey on the Availability and Use of Information Technologies in Households (ENDUTIH) for the year 2022, developed by the National Institute of Statistics and Geography (INEGI), was used (INEGI, 2023). This survey stands as a valuable source of data that allows us to explore the dynamics between social networks and online purchasing decisions in the specific context of Mexico.

With the above, the main objective is to identify the main social networks that influence online purchasing decisions in Mexico.

Description of subsequent sections:

– Method: This section details the hypotheses formulated based on the research carried out on the Web of Science platform. It also presents the linear regression model used in the analysis and provides a description of the variables used in the study.

– Results: This part of the study presents the results derived from the linear regression analysis, includes a graphical representation by means of a heat plot, and reports on the hypotheses that were corroborated and the one that was refuted in the process.

– Conclusions: This section is devoted to the development of conclusions based on the results obtained in the previous section. It focuses specifically on the social networks identified as the main influences on online shopping.

Method

To carry out the quantitative analysis, the database generated by the National Institute of Statistics and Geography (INEGI) was used, which was based on the National Survey on the Availability and Use of Information Technologies in Households (ENDUTIH) for the year 2022 (INEGI, 2023). In a first step, data cleaning was carried out using SQL language, with the aim of creating a cleaned database that would serve as a basis for subsequent evaluations. In total, 58,540 records were counted at the end of this cleaning phase.

For the qualitative analysis and to generate the hypotheses, a literature review was carried out in Web of Science and the following hypotheses were developed:

Hypothesis 1 (H1): Age Significantly Impacts Online Item Purchasing. This research proposes Hypothesis 1 (H1) in order to examine whether age has a significant impact on online purchasing decisions.

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This hypothesis is supported by evidence provided by a previous study conducted in Hungary, where a significant relationship between age and purchases through the Facebook platform was observed. Specifically, this study identified a striking difference in purchasing patterns between younger consumers and those in the 50+ age group (Fekete-Farkas *et al*., 2021).

Hypothesis 2 (H2): Facebook Exerts a Significant Impact on Online Shopping for Items This hypothesis focuses on whether the Facebook platform exerts a significant impact on online item purchase decisions. The rationale for this hypothesis is based on a study conducted in hotels in Turkey, which examined the relationship between brand loyalty and social media activities, specifically Facebook pages. The aforementioned study yielded results that highlight Facebook as a platform with a substantial influence on purchase intention. Furthermore, it was identified that this influence is significantly linked to the number of page followers and other factors associated with brand loyalty (Ibrahim, 2021).

Hypothesis 3 (H3): Twitter Exerts a Significant Impact on Online Shopping for Items. We seek to assess whether the Twitter platform exerts a significant impact on online item purchase decisions. This hypothesis is supported by Twitter's notorious relevance as one of the most widely used and popular microblogs worldwide, what differentiates Twitter and underpins this hypothesis is its focus on encouraging advance purchases and special offer promotions (Juntunen *et al.,* 2020); which could be conducive to influencing online purchasing decisions.

Hypothesis 4 (H4): Instagram Exerts a Significant Impact on Online Shopping of Items Aims to investigate whether the Instagram platform significantly influences online product purchase decisions. This hypothesis finds support in a research paper conducted in South Africa, which identified a positive and significant relationship between Instagram users' salient behaviour and their intention to purchase luxury goods. This inclination is associated with the need to show their position in the social hierarchy or to achieve a higher social status (Madzunya *et al*., 2021).

Hypothesis 5 (H5): WhatsApp Exerts a Significant Impact on Online Shopping of Items It aims to find out whether the WhatsApp platform possesses a significant influence on online product purchase decisions. This hypothesis is underpinned by the widely held belief that, due to its widespread popularity and pervasive use, WhatsApp has the potential to exert a prominent impact on the online item purchase process (Ebrahimi *et al*., 2021; Miah *et al*., 2022).

Hypothesis 6 (H6): YouTube, Pinterest, Messenger and TikTok Have an Insignificant Impact on Online Item Purchases This hypothesis is based on the absence of these platforms in the most widely recognised and discussed set of social networks in the academic literature and selected for this study, (Al Hamli & Sobaih, 2023; Ali Taha *et al*., 2021; Nasidi ***et al***., 2022).

Figure 1 shows the relationship of the dependent variable "Online shopping", and the independent variables, the use of the analysed social networks.

Figure 1 Relationship between the dependent variable and the independent variables
Own Elaboration with data from the model

A binary linear regression analysis was then carried out using Gretl software to generalise the data into a single model. In this analysis, online shopping was designated as the dependent variable, which asks about online shopping in the last 12 months. In addition, respondents' age and their use of different social networks were used as independent variables, shown in Figure 1.

The theoretical equation of the simple logit model is represented as:

$Ho{:}\beta i{=}0$

$H_1{:}\beta_i{\neq}0$

$$P(X) = \underset{1}{\mathrm{P}}(\mathrm{Y} = 1/X_1, X_2, \ldots..X_9 = \frac{}{1+e^{-(\beta_0+\beta_1 X_1+\cdots+\beta_9 X_9)}}$$

The variables are described in Table 1 below

Variable	Descripción
Online shopping (Y)	Defines whether the respondent has purchased items online in the last twelve months (during the year 2022). It is the dependent variable and is of binary type, with values of made online purchases = 1 and did not make online purchases = 0.
Age (X_1)	Defines the age of the respondent, in whole numbers. It is an independent variable.
Facebook (X_2)	Defines whether the respondent uses Facebook. It is an independent variable and of binary type with values of Yes uses Facebook = 1 and No uses Facebook. = 0
Twitter (X_3)	Defines whether the respondent uses Twitter. It is an independent variable and of binary type with values of Yes uses Twitter = 1 and No uses Twitter. = 0
Instagram (X_4)	Defines whether the respondent uses Instagram. It is an independent variable and of binary type with values of Yes uses Instagram = 1 and No uses Instagram. = 0
WhatsApp (X_5)	Defines whether the respondent uses WhatsApp. It is an independent variable and of binary type with values of If using WhatsApp = 1 and Not using WhatsApp. = 0
YouTube (X_6)	Defines whether the respondent uses YouTube. It is an independent variable and of binary type with values of Yes uses YouTube = 1 and No uses YouTube. = 0
Pinterest (X_7)	Defines whether the respondent uses Pinterest. It is an independent variable and of binary type with values of Yes uses Pinterest = 1 and No uses Pinterest. = 0
Messenger (X_8)	Defines whether the respondent uses Messenger. It is an independent variable and of binary type with values of If using Messenger = 1 and Do not use Messenger. = 0
TikTok (X_9)	Defines whether the respondent uses TikTok. It is an independent variable and of binary type with values of Yes uses TikTok = 1 and No uses TikTok. = 0

Table 1 Description of the variables used in the linear regression
Source: Own Elaboration with data from the model

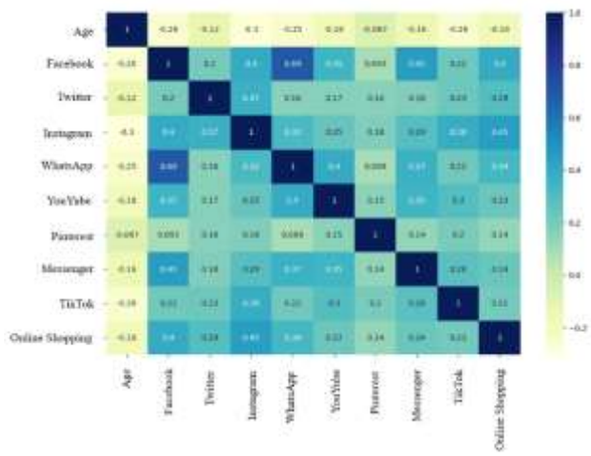
Results

The results of the linear regression are shown in Table 2.

Variable	Coef. (B)	Standard error	Z	p- value	
Constant	-3.497	0.044	-78.49	0.000	***
Age	-0.001	0.001	-1.58	0.113	
Facebook	1.457	0.043	33.96	8.91e-253	***
Twitter	1.012	0.043	23.44	1.51e-121	***
Instagram	1.344	0.028	48.85	0.000	***
WhatsApp	0.964	0.046	21.10	8.7e-099	***
YouTube	0.219	0.025	8.65	5.7e-018	***
Pinterest	0.555	0.081	6.83	8.7e-012	***
Messenger	-0.017	0.026	-0.67	0.5003	
TikTok	-0.004	0.035	-0.12	0.904	
Log-Likelihood -24135.28					
Goodness of fit of the model					
Chi-square = 17291.6					
Significant at 5%, ***					

Table 2 Predictive Logit Model, Dependent variable: Online shopping
Source: Own Elaboration with data from the model

It is relevant to mention that, in addition to the regression analysis, a heat graph was elaborated using the Python programming language, using the same variables that were the object of study in the linear regression. This heat graph allowed us to visualise the correlation between the variables and provided a graphical representation of the interaction between them, Graph 1.



Graph Heat plot of the variables used
Source: Own elaboration with data from the model

In the heat graph analysis we sought to identify the variable that most influences respondents' online purchases in 2022 according to information from the ENDUTIH survey (INEGI, 2023).

In this context, the strong variable was whether the respondent has made online purchases in the last year. Within this variable, the following sub-variables were highlighted with their respective most significant values:

– Instagram with a value of 0.45.
– Facebook with a value of 0.40
– WhatsApp with a value of 0.34
– Twitter with a value of 0.29

These values indicate the degree of influence of each of these platforms on the online purchases made by respondents.

In addition to the above analysis, the relationship between the age of the respondents and their online shopping habits was assessed. Surprisingly, age was found to have a limited influence in this context, as can be seen in the graph, as it presents the lowest values in terms of influence on online shopping.

The results of the linear regression analysis indicated that the following independent variables have a significant weight on online shopping, according to their coefficients in the corresponding column:

– Facebook with a coefficient of 1.46.
– Instagram with a coefficient of 1.34.
– Twitter with a coefficient of 1.01.
– WhatsApp with a coefficient of 0.96.

It is important to note that the p-value associated with these variables was less than 0.05, indicating that they are statistically significant in the online shopping analysis. On the other hand, the age variable did not show statistical significance in this analysis.

With the data obtained, the following results were obtained in accordance with the hypotheses proposed:

Hypothesis 1 (H1): Age Significantly Impacts Online Item Purchasing.

Hypothesis H1 is rejected. Despite the initial belief that age could influence online purchases (Fekete-Farkas *et al.*, 2021), data analysis reveals that age has a negligible impact on online purchase decisions.

This result contradicts expectations and suggests that other factors, such as social networks, may have a much more significant influence on online shopping behaviour.

Hypothesis 2 (H2): Facebook Exerts a Significant Impact on Online Item Purchases

Hypothesis H2 is confirmed. The results of the logistic regression analysis indicate that Facebook exerts a significant impact on online purchasing decisions, with a coefficient of 1.46. This supports the idea that Facebook plays a relevant role in respondents' online shopping behaviour.

Hypothesis 3 (H3): Twitter Exerts a Significant Impact on Online Item Purchases

Hypothesis H3 is confirmed. The results suggest that Twitter has a significant impact on online shopping, with a coefficient of 1.01. This supports the hypothesis that Twitter influences online shopping decisions, especially due to its focus on encouraging advance purchases and special offers(Juntunen et al., 2020).

Hypothesis 4 (H4): Instagram Has a Significant Impact on Online Shopping of Goods

Hypothesis H4 is confirmed. The analysis supports the idea that Instagram exerts a significant impact on online purchase decisions, with a coefficient of 1.34. This suggests that Instagram influences respondents' online shopping behaviour, especially in the context of luxury products (Nguyen et al., 2022).

Hypothesis 5 (H5): WhatsApp Exerts a Significant Impact on Online Shopping of Items

Hypothesis H5 is confirmed. The results indicate that WhatsApp has a significant impact on online shopping, with a coefficient of 0.96. This supports the idea that WhatsApp influences online shopping decisions due to its widespread popularity and widespread use (Ebrahimi *et al*., 2021; Miah *et al*., 2022).

Hypothesis 6 (H6): YouTube, Pinterest, Messenger and TikTok Have an Insignificant Impact on Online Shopping for Items

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Hypothesis H6 is confirmed. YouTube, Pinterest, Messenger and TikTok platforms have a negligible impact on online shopping, according to the results of the analysis. This suggests that these social networks have limited influence on respondents' online shopping decisions compared to the previously mentioned platforms.

Conclusions

The analyses conducted within the framework of this research, which include heat graph and logistic regression analysis, provide substantial evidence on the main social networks that influence respondents' online shopping behaviour in 2022, according to data obtained from the ENDUTIH survey (INEGI, 2023). Important findings related to the influence of age on online purchasing decisions also emerge.

Firstly, it has been identified that the most prominent social networks in their influence on online shopping are Instagram, Facebook, Twitter and WhatsApp. These platforms have been shown to have a significant impact on online purchasing decisions, as evidenced by the coefficients obtained through logistic regression analysis. Specifically, it is highlighted that the independent variables Facebook, Instagram, Twitter and WhatsApp have a significant weight on online shopping, with coefficients indicating their positive influence on respondents' online shopping behaviour.

In contrast, the hypothesis that age plays a significant role in online shopping has been rejected. Although this factor was initially analysed as a potentially influential variable, the results of the analysis indicate that its impact on online shopping is insignificant compared to the effect of the social networks mentioned above.

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