



The Impact of the Use of Social Networks in the Promotion and Marketing of Products and Services in Small Businesses of Imbabura-Ecuador

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Abstract: This article examines the use of social media as a promotional tool for small businesses in Imbabura, based on surveys of 293 entrepreneurs. The frequency of use, preferred platforms, and their impact on business growth were identified. 59% of respondents believe that social media helps to capture new markets and increase sales, with Facebook and Instagram being the most used. However, a significant number of companies have an "intermediate" or "weak" use, indicating an opportunity to improve their digital strategies. Companies that use these platforms consistently achieve greater visibility and growth. The study also highlights the need to reduce digital gaps through training in social media management, allowing small businesses to maximize their potential. In conclusion, social media is a valuable resource to improve competitiveness and increase profits by attracting new customers in the province of Imbabura.

Keywords: social networks, small businesses, digital promotion, digital strategy, Imbabura.

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1. Introduction

In today's business environment, the use of social networks has become an essential tool for the promotion and marketing of products and services, especially for small and medium-sized enterprises (SMEs). Through these platforms, companies can not only connect with their target audience more directly and quickly, but also have the possibility of expanding their market and positioning themselves strategically. In this way, social networks allow companies to access global markets and a more segmented audience, facilitating brand recognition, customer loyalty and the acquisition of new prospects.

Companies in the province of Imbabura, mostly classified as small and medium-sized, find in social networks a potential driver for their growth. In a context where access to resources for traditional advertising campaigns is limited, social networks represent an accessible and effective alternative. However, despite the increase in their adoption, there is still a lack of clear strategies and in-depth knowledge that would allow them to take full advantage of these tools to maximize their results.

In the province of Imbabura, small businesses face several challenges in their attempt to optimize the use of digital platforms. Insufficient specialized training and lack of knowledge of the functionalities provided by social networks limit their effective adoption. Added to this is the need to understand how these platforms can not only increase business visibility, but also translate that reach into a tangible increase in sales and a boost to economic growth.

This research analyzes, through a survey applied to 293 entrepreneurs in the province of Imbabura, the

impact of the use of social networks in the promotion of their products and services, evaluating key variables such as frequency of use, the most used platforms, and the perception of their effectiveness in capturing new markets and strengthening the positioning of companies. With this, it is intended to provide a theoretical and empirical basis that allows local entrepreneurs to implement more effective digital strategies, adapted to the demands of the contemporary market.

2. Theoretical Overview of the Main Concepts

Digital marketing and the use of social networks is of great importance for small businesses in the province of Imbabura because they provide greater visibility and access to new markets. However, barriers such as connectivity and lack of training on digital tools have slowed the process of adoption and use in companies, becoming a significant gap to be overcome. Social platforms, especially Facebook and Instagram, have proven to be effective in dissemination and promotion, mainly in sectors such as tourism and handicrafts. But it is essential to emphasize that businesses face significant challenges concerning poor digital marketing skills and technological infrastructure. Governance, through the implementation of strategic alliances between educational institutions, businesses and governments is key to overcoming these barriers and fostering competitiveness. Theoretical Framework

Likewise (1), states that SMEs in rural areas must embrace and adapt to digital environments to maintain their competitiveness, which demands significant investment in training and technology adaptation. In addition, (2) state that social networks enable businesses in rural areas to access larger markets, but that it is also necessary to improve the digital skills of entrepreneurs to maximize their impact.

Influence of visual communication in social networks and its commercial function.

In the current context, the use of social networks has transformed the way companies interact with their customers. According to (3) social networks provide accessible spaces for them to increase their visibility, without incurring high costs usually associated with traditional advertising; this aspect is crucial in the province of Imbabura, where small businesses face budget constraints for marketing and advertising.

The influence of visual communication in social networks is significant; according to (4), they state that publications containing visual elements, such as images or videos, obtain 94% more views compared to those containing only text. Visual marketing has undergone a significant transformation thanks to the emergence of social networks such as Instagram, where visual content has gained preference over textual content. (5) state, that social networks have redefined the interaction between companies and consumers, with aesthetics and visual connection predominating in corporate communication. (6) also point out that social network users tend to interact more with posts that contain attractive visual elements, which in turn drives higher levels of engagement.

According to, (7) in their research reveal that visual content possesses a distinctive ability to establish emotional bonds, which is crucial for successful social media marketing. This strategy is adopted by small businesses seeking to foster loyalty and connection with their audiences through carefully designed images, infographics and videos.

Social media has established itself as an effective tool for small businesses to increase their visibility. The visual nature of platforms like Instagram drives brands to focus on aesthetics, allowing them to differentiate themselves from the competition. Companies that invest in engaging visual content achieve greater interaction with users (8). According to (9) state that social media marketing, through images and videos, facilitates the expansion of markets, especially in Imbabura, where these tools allow competing in a saturated environment.

Similarly, (10) assures that small companies can access global audiences with minimal investment, implementing effective visual communication strategies to stand out. In Imbabura, those businesses that adopt a visual approach to social media experience significant growth in visibility and sales. This is crucial for rural entrepreneurs competing with larger companies. Building a strong brand through consistent visual communication generates trust and loyalty among consumers, essential elements for better business

results in a context of limited resources.

Visual communication in social media and its relevance for small businesses

Visual communication involves the use of images, colors, typographies and other graphic elements with the purpose of transmitting messages efficiently and quickly. (11) state that this form of communication exerts a significant impact on the perception of messages in digital environments, facilitating a deeper emotional connection with audiences.

Visual communication plays a crucial role in capturing the attention of users. (12) assert that images and videos have the ability to generate immediate emotional responses in consumers, which in turn impacts their perception of the brand and their purchase intent. Social media platforms such as Instagram, Facebook and TikTok provide small businesses with the opportunity to employ strategic visual elements to differentiate themselves in the market and attract a greater number of consumers (13)

According to (14) point out that companies that manage to integrate an effective visual identity in their social networks experience significant growth in their brand recognition and consumer loyalty. Visual communication has emerged as a crucial element in the field of digital marketing. Similarly, research conducted by (15) states that images and videos have the ability to evoke immediate emotional responses in consumers, impacting brand perception and purchase decision. In this sense, aspects such as graphic design, colors and visual composition directly influence the way users relate to brands in digital environments (16).

According to (17) states that a company's ability to establish a strong visual identity is linked to its success in promoting itself through social networks. This is because individuals process visual information 60,000 times faster than text, which highlights the importance of effective visual presentation in the digital realm. In this sense, (18) highlight that the incorporation of visual content in social networks significantly boosts the visibility of small businesses, allowing them to compete with larger companies. This highlights the importance of images and videos in capturing the attention of consumers. (19) emphasize that a well-defined visual identity on digital platforms is crucial to establish a robust brand presence in an information-saturated environment.

On the other hand, (20) argue that visual content on social networks not only boosts brand recognition, but also increases the conversion rate of small businesses. This is especially relevant in the province of Imbabura, where small businesses are faced with the need to optimize the impact of their advertising campaigns with limited resources (21).

In recent studies, (22) revealed that well-designed visual content in networks such as Instagram and TikTok not only improves interaction, but also strengthens customer loyalty towards brands. According to (23) argue that the visual nature of platforms such as Instagram imposes brands to prioritize aesthetics and consistency in their image. This requirement, while it may represent a significant challenge, also sets up as a valuable opportunity to achieve differentiation in the market.

Several studies have addressed how consumers react to visual stimuli on social networks. (24) state that the use of attractive and consistent images in social media posts can significantly increase user engagement. This assertion is supported by various research evidencing that visual content generates a higher number of interactions compared to exclusively textual content (25).

In research by (26) showed that brands that implement original and high-quality visual content are perceived by consumers as more trustworthy and professional, which improves purchase intentions. The quality of visual content on social networks significantly influences consumers' purchase decisions. (27) state that consumers perceive brands with consistent and professional visual content as more trustworthy, leading to greater engagement and loyalty. (28) highlight that the implementation of visual narratives in social networks potentiates the emotional connection with users, which, in turn, contributes to strengthening brand loyalty. In turn, (29) argues that visual consistency in brand communication represents a fundamental aspect to foster trust and customer loyalty.

According to (30) defines that it is important to guide companies to focus their strategies on other factors, such as demographic typologies or type of content, instead of basing their efforts on the platform used. Similarly, (31) asserts that generalization in the strategy of using networks could be adequate, focusing on consistency and content preferences instead of developing it on a specific platform.

In the province of Imbabura, small businesses are affected by particular challenges, including limited resources and intense competition in local markets. (32) manifiestan que el uso de las redes sociales como una state that the use of social networks as a tool for visual communication has facilitated these small businesses in rural and semi-urban areas to expand their reach beyond the confines of their local markets. This is relevant to understand how the strategic implementation of visual communication can significantly influence the competitiveness of these enterprises.

In this context, (33) argues that the use of social networks has been fundamental for small enterprises located in rural areas to gain access to new markets at a reduced cost. In the province of Imbabura, small businesses have adopted social networks as a key channel for their growth. According to (34) they claim that companies that invest in well-planned visual communication strategies on social networks achieve higher consumer engagement and conversion rates.

This approach is supported by (35) research, where they reinforce this idea by stating that small businesses in rural environments have the opportunity to use social networks to access new markets by leveraging the creation of engaging visual content. According to, (36) the use of innovative visual strategies on platforms such as Instagram and Facebook has allowed small businesses not only to survive, but also to thrive in highly competitive environments. In this context, small businesses located in Imbabura are using social networks as tools to increase their visibility and boost their sales, taking advantage of the impact caused by images and videos to effectively communicate their values and products, thus adapting to the demands of the contemporary market.

Small and medium-sized enterprises (SMEs) in the province of Imbabura have begun to integrate digital platforms such as Facebook, Instagram and WhatsApp in their communication strategies to interact with both local and national audiences. According to (37) the use of social networks among rural businesses has experienced remarkable growth. However, despite this significant progress many of these organizations continue to face significant challenges in implementing effective digital marketing strategies. This is due in part to the lack of training in the use of these tools and the scarcity of financial resources that limit investment in paid advertising (38).

The digital environment has made it easier for local companies to access new markets and expand their customer base. In this sense, (39) emphasize that the adoption of digital marketing strategies has allowed small businesses in Imbabura to compete fairly with companies in other more developed regions. This is particularly evident in sectors such as tourism and handicrafts, where social networks play a key role in promoting products and services unique to the region (40).

Digital Marketing Challenges for Rural Businesses

Despite the progress made at the business level, rural businesses in Imbabura continue to face significant obstacles when trying to implement digital marketing strategies effectively. According to (41) many of these small businesses do not have the necessary technological infrastructure or adequate knowledge to take full advantage of the potential of social networks as a marketing tool. Similarly, the lack of knowledge or resources to exploit social networks as a means of promotion, highlighting the need for training programs and accessible tools that are established in small businesses (42).

In addition (43) research highlights that insufficient access to high quality internet services in certain rural areas of the province of Imbabura continues to represent a significant challenge for the advancement of digital marketing. Social networks have become a fundamental tool for the promotion of products and services in Imbabura. The most used platforms include Facebook, Instagram and WhatsApp, being these the preferred ones for their effectiveness in facilitating direct and fluid communication with customers. Prefectura de Imbabura (37) states that most companies in Imbabura use Facebook as their main digital

marketing tool, due to its accessibility and ability to effectively reach local audiences.

Likewise, Instagram has emerged as a key platform for companies in the handicraft and tourism sector that wish to showcase their products through high-impact visual content (44). Iglesias et al. research, highlight that visual content, especially that generated by the users themselves, is one of the most effective strategies to capture the attention of consumers on this platform. As well as the importance of consistency and dedication for the growth of visibility and digital influence, aligned with what has been pointed out by (45)

As more companies in Imbabura adopt digital marketing strategies, opportunities to expand their operations and improve their online presence continue to grow. According to (46) companies that manage to implement effective digital strategies can improve their visibility in both domestic and international markets. However, the research by (47) concludes that digital marketing education and training are essential for the success of rural businesses in an increasingly digitized environment. This underscores the importance of establishing collaboration between educational institutions and the private sector in order to develop programs that empower local businesses to adapt and thrive in the digital landscape. (48). This indicates a potential for the implementation of time and resource optimization strategies (49).

3. Methodology

This study focused on analyzing how small businesses in the province of Imbabura use social networks and the effect they have on the promotion of their products and services. With the evolution of social networks, these platforms have become key tools in the field of digital marketing, providing small businesses with significant opportunities to reach new markets and attract potential customers (50). The methodology applied in this research was designed to collect empirical data to identify patterns in the use of social networks, the perception that entrepreneurs have of their usefulness, and their impact on the growth of their businesses.

From a quantitative perspective, this research focused on the collection of numerical data related to the use of social networks, their preferences and the perception that small businesses have regarding the promotion of their products and services. This methodological approach enabled the identification of relationships and patterns, facilitating a rigorous and accurate statistical analysis (51).

The methodological approach adopted in this study is descriptive in nature, with the purpose of providing an overview of the use of social networks in small businesses located in the province of Imbabura. This design is appropriate when seeking to deepen the understanding of how small businesses take advantage of social networks and how they perceive their impact on key aspects such as increasing sales and attracting new customers (52). Data collection was done through surveys, which allowed us to identify patterns of behavior, the time spent on these platforms, determine which are the most used, and explore the general perception of the usefulness of these digital tools.

The target population of the study is made up of small businesses in the province of Imbabura that currently employ or contemplate the use of social networks as part of their marketing and promotion strategies. The sample is composed of 293 respondents, of which 146 are men and 147 are women which ensures adequate representation of both genders; this parity is relevant for comparative analyses around perceptions on the use of social networks, ensuring the minimization of biases in the results related to gender. (51).

For data collection, the instrument used was a structured questionnaire that combined closed questions and some with Likert scales, following the recommendations of (53). The questions addressed essential aspects such as: frequency of use of social networks, most used platforms (Facebook, Instagram, TikTok, etc.), time of use of social networks for promotion, number of followers in social networks and perception of the effectiveness of social networks to attract customers and increase sales.

The reliability of the instrument was evaluated through Cronbach's Alpha coefficient, obtaining a value of 0.827, which reflects a high reliability of the questionnaire, in accordance with the standards recommended for research of this nature (54).

For the interpretation of the data, a descriptive analysis was used, presenting the results in contingency

tables and graphs that illustrate the absolute and relative frequencies. This type of analysis is appropriate for cross-sectional studies where it is necessary to observe how the responses are distributed in different categories (55). Additionally, complementary analyses were carried out to explore the relationship between variables such as the use of social networks, the perception of usefulness for promotion and the increase in sales.

Similarly, the present research explores the use of social networks in small businesses in Imbabura for the promotion and marketing of their products requires advanced statistical analysis methods to identify behavioral patterns and significant relationships between variables. In this context, the use of the Chi-square test and clustering analysis represent key tools for data analysis.

The Chi-square test is a statistical technique widely used in the analysis of categorical data, as it allows determining whether there is a significant relationship between two independent variables. Applied in this research, the Chi-square test helps to identify whether the use of certain social networks is significantly associated with the frequency with which companies promote their products on these platforms (56).

On the other hand, clustering analysis allows segmenting data into homogeneous groups, which facilitates the identification of subgroups of companies that share similar behaviors in the use of social networks. Through this technique, it is possible to detect patterns in the frequency of use and preferred platforms, allowing marketing strategies to be tailored to specific segments of companies (57).

It is anticipated that the results of the study will identify which social networks are most used by small businesses, the time they spend promoting their products on these platforms, and their perception of the effectiveness of social networks in attracting customers and increasing sales. Likewise, small businesses that invest more time in managing their social networks are expected to experience an increase in the number of prospects that become customers, which coincides with previous research highlighting the relevance of visibility in social networks for market expansion (58).

Based on the aforementioned and for a better interpretation of the results, graphs are established to better identify the information obtained through the surveys.

Results

Table 1

Characteristics of the sample

Uso de redes sociales para promoción	Frequency	%
Yes	208	71,0
No	85	29,0
Tota	293	100,0
Redes sociales más utiliza	Frequency	%
Facebook	136	46,4
Instagram	58	19,8
Tik Tok	12	4,1
Other	3	1,0
N.R	84	28,7
Cantidad de seguidores	Frequency	%
Less than 100	15	5,1
101 a 500	62	21,2

501 a 1000	39	13,3
1001 a 2000	28	9,6
2001 a 3000	24	8,2
More than 3000	40	13,7
N.R	85	29,0
Tiempo de uso de redes sociales	Frequency	%
Less than 6 months	21	7,2
7 to 12 months	25	8,5
1 to 2 years	66	22,5
3 to 4 years	57	19,5
5 to 6 years	19	6,5
More than 6 years	20	6,8
N.R	85	29,0

Note: This table presents the response percentage according to the characteristics of the sample, applying SPSS.

As shown in Table 1, on the use of social networks for promotion, 71% of respondents use social networks to promote their businesses, which reflects a high adoption of these platforms as marketing strategies. In contrast, 29% of the participants indicated that they do not use social networks for this purpose. These results underscore the growing relevance of social networks in today's business environment.

In relation to the question about the most used social networks, it is determined that Facebook is the predominant platform with 46.4%, in second place, Instagram with 19.8%, followed by TikTok with 4.10%. Similarly, a considerable number of respondents equivalent to 28.67% chose not to answer this question, which can be interpreted as lack of familiarity or interest in disclosing the information. The option other social networks also showed minimal participation.

Similarly, illustrating the frequency of use of social networks, it is observed that 44.03% of respondents stated that they use them constantly, which reflects a high level of constant use of these platforms in their daily activities. On the other hand, 23.54% of the participants report occasional use, while a small percentage (3.75%) say they use them sporadically. It should also be noted that a significant percentage of 28.7% of respondents did not answer, which may be related to privacy or lack of clarity in the interpretation of the question.

It is important to note that of the total number of followers on social networks, the majority of respondents (21.2%) have between 101 and 500 followers, while 13.7% have more than 3,000 followers. These data indicate that, although some entrepreneurs have a considerable audience on social networks, many have a moderate follower base. Also, the high percentage of non-responses, amounting to 29%, with almost a third of respondents choosing not to share this information, could be attributed to a lack of knowledge about the relevance of followers on social networks or a preference for not disclosing personal information.

The table also shows that the majority of respondents have been using social networks for promotion for 1 to 2 years, representing 22.5% of the total. Likewise, 19.5% of the participants have been in this area for 3 to 4 years. On the other hand, users with less than 6 months of experience constitute 7.2%, while those with more than 6 years represent 6.8%. It is important to note that a significant 29% of respondents chose not to answer, which may suggest a lack of experience in the use of social networks for promotion or a disinterest in sharing this information.

Table 2.

Use, application and benefit of social networks

	use of social networks	Social networks help to capture a larger market	Social networks help convert potential prospects into customers	Social media is a digital medium that allows consumers to recognize products or services offered by the small business	Social networks are an opportunity for small businesses to achieve their goals	The use of social networks is an opportunity for economic growth	The products or services that are promoted and marketed through social networks	In order to promote products or services, it is important to know the consumption habits.	The use of social networks for promotion requires good training.
Totally agree	59%	57%	50%	53%	50%	48%	63%	52%	57%
Agree									
Agree	35%	38%	42%	41%	38%	43%	32%	36%	35%
Neither agree nor disagree									
Neither agree nor disagree	4%	3%	6%	5%	11%	6%	5%	11%	6%
Disagree									
Disagree	1%	2%	2%	1%	2%	2%	1%	2%	0%
Strongly Disagree									
Strongly Disagree	0%	0%	0%	0%	0%	0%	0%	0%	1%

Note: This table presents the percentage of response based on the use, application and benefit of social networks.

The results derived from this survey reflect the perception of small business owners regarding the use of social networks as a means to promote their products or services. A detailed analysis is presented below for each statement, based on the response percentages obtained.

In particular, in relation to the question about the use of social networks being useful for small businesses to promote their brand, product or service in the market, it is determined that 59% of respondents stated that they “totally agree” and 35% “agree”, indicating that 94% of participants consider social networks as an essential tool for business promotion, while only 5% do not have a clear position, answering “neither agree nor disagree”, and only 1% stated “disagree”, with no “totally disagree” responses. These data show an almost universal acceptance of the value that social networks bring to business promotion.

In response to the question of whether social networks can capture a larger market of current and potential customers and increase sales volume, the results indicate that 57% of respondents “strongly agree” and 38% “agree”. Together, these figures add up to 95% of participants confirming the effectiveness of social networks in expanding the market. However, only 3% expressed a neutral position, while a mere 2% disagreed. These results show a broad consensus regarding the positive impact of social networks in attracting customers.

According to the results obtained on the question about social networks helping to convert potential prospects into customers, 92% of the respondents, including the options “Strongly agree” and “Agree”, consider that social networks are useful for converting prospects into real customers. Only 6% of the participants were neutral, while only 2% expressed disagreement, reflecting the belief that social networks are fundamental in the conversion of leads.

In the fourth question, referring to whether social networks allow consumers to recognize the products or services offered by the small business, 94% of the respondents, who fall between the “Strongly Agree” and

“Agree” categories, affirm that social networks are useful for increasing the recognition of their products. Only 5% expressed a neutral opinion, while a small 1% expressed “Disagree”, confirming that social networks are seen as an effective tool for improving brand visibility.

In relation to the fifth question, which determines whether social networks allow small businesses to achieve market positioning, increasing their sales and profits, 88% of respondents, when adding the responses “Strongly agree” and “Agree”, consider that the use of social networks is key to market positioning. On the other hand, 11% take a neutral position, while 2% disagree. Although this is still a low percentage of disagreement, the rate of neutrality is higher compared to other items, suggesting that some respondents may have doubts about the direct impact of social networks on market positioning.

In question six, regarding the use of social networks as an opportunity for small businesses to grow economically by reaching new markets, 48% of respondents expressed “Strongly agree” and 43% “Agree”, which adds up to 91% of favorable opinions that social networks facilitate expansion into new markets. On the other hand, 6% remained neutral and 2% expressed disagreement. These results show that the vast majority believe in the potential of social networks to expand into new markets.

In relation to question seven, which addresses the issue of whether products or services promoted through social networks should be of quality to generate trust and credibility, the results reveal that 95% of respondents, among those who positioned themselves as “Strongly Agree” or “Agree”, consider that product quality is essential to generate trust and credibility in social networks. The remaining 5% adopted a neutral position, with no disagreement. These data reflect the importance that small companies give to quality as part of their digital strategy.

However, in question eight, focused on the promotion of products or services in social networks, it is important to know the consumer's consumption habits and behavior, the results reflect that 88% of respondents, adding the options “Strongly agree” and “Agree”, consider it key to understand consumer behavior to be successful in social networks. On the other hand, 11% of the participants remain in a neutral position, while only 2% stated that they “Disagree”. These data suggest that there is widespread recognition of the importance of consumer analysis in digital strategies.

In question nine, on the use of social networks to promote products or services requires good training on the management of digital media, 57% of respondents said they “strongly agree” and 35% said they “agree”, which adds up to 92% of people who consider training in the use of social networks necessary for effective promotion. However, 6% remained neutral and only 1% expressed disagreement. These results reflect a clear perception of the need to strengthen digital skills among entrepreneurs.

Based on these results, a cross table is established which allows analyzing the social networking sites most used by respondents to promote and market their products or services, crossing this information with the perceived strength of their digital strategy, classified into three levels: weak, intermediate and solid, thus, the total count of the sample is 293 respondents, divided by the social networking sites they use the most, information shown in Table 3.

Table 3.

Social networks used for promotion and marketing

Which social networking sites do you use the most to promote and market your products or services? *Classify variable Cross tabulation					
		Classify variable Total			Total
		Weak	Intermedia te	Strong	
¿Which social networking sites do you use the most	Facebook	4	13	119	136
	Instagram	5	10	43	58

to promote and market your products or services?	Tik Tok	4	6	2	12
	Other	2	0	1	3
	N.R	0	0	84	84
Total		15	29	249	293

Note: This table shows which social networking sites are the most used and through the cross tabulation that was performed under the SPSS statistical system, reflects the most used sites according to the questions asked to the respondents.

The cross tabulation examines the social networking sites most used by respondents to promote and market their products or services, thus establishing that Facebook is positioned as the most used platform, with 45.04% of Facebook users perceiving their strategy as intermediate or solid, which reinforces the idea that this platform is seen as an effective resource for the promotion of products and services. In addition, a high percentage of users perceive a solid strategy in its use.

Instagram is the second most used platform for business promotion, with 18.09% of users who use it considering their strategy as intermediate or solid. Although its popularity is lower compared to Facebook, a considerable portion of respondents still consider Instagram as a valuable channel for business promotion. In third place is TikTok, which, although its usage remains relatively low compared to Facebook and Instagram, shows a usage pattern where most users view its strategy as intermediate. Only two respondents rate their TikTok strategy as robust, indicating that, within this sample, the platform is perceived as less robust for business promotion.

It is relevant to note that users who use other social media platforms for promotion do not have a significant impact on the sample. In fact, only three participants stated employing other platforms for promotion. In addition, a considerable percentage of respondents did not specify which media they use to carry out their promotional strategies, reflecting that these respondents rely on offline media or other strategies.

In this context, the cross table in Table 4 is established, which reflects the frequency of use of social networks, an important parameter to know the periodicity and management.

Table 4.

Frequency of use of social networks for promotion.

¿ How often do you use social networks to promote your products or services?					
Classify variable Cross tabulation					
		Classify variable Total			Total
		Weak	Intermediate	Strong	
¿ How often do you use social networks to promote your products or services?	Always	12	20	97	129
	Sometimes	2	9	58	69
	Rarely	1	0	10	11
	N.R	0	0	84	84
Total		15	29	249	293

Note: The table presents the frequent use of social networks and through the cross tabulation performed under the SPSS statistical system, reflects the most used sites according to the questions posed to the respondents.

This table analyzes the frequency with which respondents use social networks for promotion, the data reveals that a notable majority, specifically 75% of the participants who claim to use social networks

“always”, consider that they have a solid strategy, suggesting that frequent use of networks is highly correlated with a positive perception of the effectiveness of their digital strategy.

Similarly, a group that employs social networks less frequently is identified, with a significant number of people, constituting 84% of the subgroup, who consider their strategy to be solid or intermediate, reflecting a less intensive but still effective approach to digital promotion. However, users who “Rarely” use social networks for promotion is a small group, of respondents, suggesting that even with minimal use of networks, some companies are confident in their effectiveness, while respondents who did not respond, represent a considerable number in size, having a perception that the strategy is strong regardless of frequency of use. Figure 1 below shows the Chi-square results.

Figure 1

Chi-square results

Results of Chi-square:

Statistics Result

Chi-square 0.721546

p-value 0.999998

Degrees of freedom 12.000000

Expected frequencies:

	Always	Sometimes	Rarely	N.R
Social networks you use				
Facebook	32.027304	38.989761	4.641638	60.341297
Instagram	13.658703	16.627986	1.979522	25.733788
Tik Tok	19.781570	24.081911	2.866894	37.269625
Other	0.941980	1.146758	0.136519	1.774744
N.R	2.590444	3.153584	0.375427	4.880546

Note: The information presented reflects the most used social networks versus the frequency of using social networks, through the calculation of the Chi-square by applying the google colab system (Phyton).

According to the results obtained, it establishes a Chi-square value of 0.7215, representing a difference between the observed frequencies and the expected frequencies in each cell, indicating a low Chi-square value where the differences between the observed and expected values are small, which points to a low association between the variables analyzed, while the p-value is 0.999998, being significantly higher than the commonly accepted significance level of 0.05, this shows that the probability that the observed differences are due to chance is extremely high, suggesting that there is insufficient evidence to reject the null hypothesis. In this context, the null hypothesis states that there is no significant relationship between the type of social network used and frequency of use.

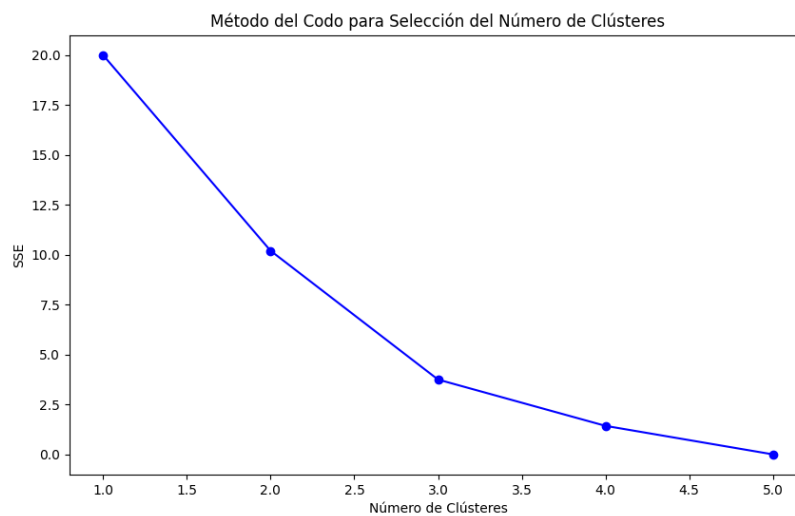
Similarly, the degrees of freedom that correspond to 12, calculated as the product of the number of rows minus one by the number of columns minus one, reflecting that these degrees of freedom confirm the complexity and the number of possible combinations between the categories of each variable, in function to the expected frequencies shows that for each category combination they expose how the distributions would be expected if there were no association between “social networks used” and “frequency of social networks”. Demonstrating that these frequencies are quite close to those observed, reinforcing that the association between these variables is minimal.

In order to contrast the results obtained through the Chi-square, the result of the cluster issued through

Phyton is established.

Figure 2

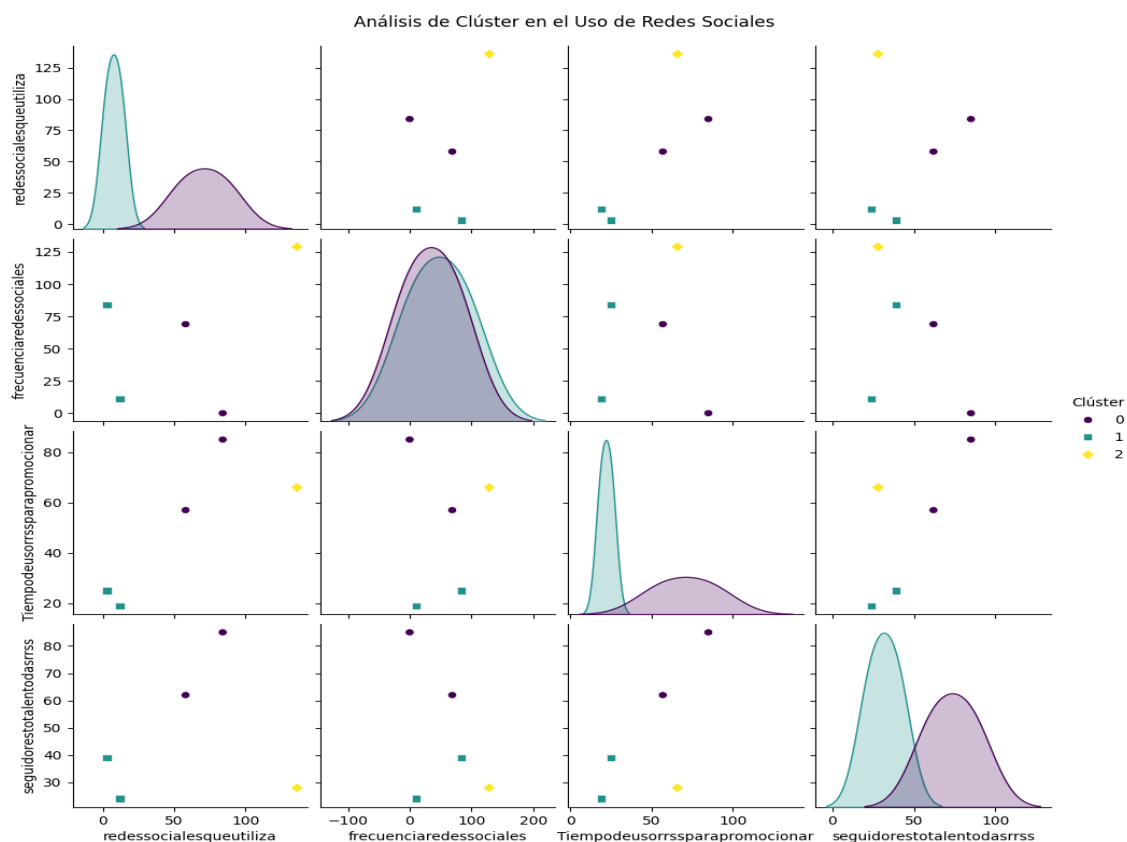
Elbow method for selecting the number of clusters.



Note: This plot shows the elbow method, a technique for determining the optimal number of clusters. The X-axis represents the number of clusters (from 1 to 5), The Y-axis shows the SSE or sum of squared errors.

Figure 3

Cluster analysis in the use of social networks **Análisis de clúster en el uso de redes sociales**



Note: Clusters issued in phyton, to determine intermediate users, basic users, advanced users.

According to Figure 3, which presents the distribution by clusters and behavior patterns, we have cluster

0 in purple, which defines intermediate users, this group shows a consistent commitment to social networks, who use the platforms with medium-high frequency and have managed to establish a moderate follower base and devote considerable time to digital promotion. This profile suggests that these users have a relatively stable digital presence, although they could still benefit from strategies that optimize the use of time and resources on social networks.

Cluster 1 in turquoise identifies basic users, showing a limited use of social networks with a low frequency of activity, as well as the time invested in promotion and the number of followers. This behavior suggests that these users are beginners or do not consider social networks as a fundamental promotional tool, which opens an opportunity for initial training programs.

Cluster 2 in yellow with advanced users brings together users who take advantage of multiple social networks, maintaining a high activity and frequency, this high dedication to promotion can be translated into a significant follower base, representing those users who use social networks professionally, such as influencers or companies with strategic digital objectives.

4. Discussion

The empirical findings will be contrasted with existing literature to assess their consistency and highlight possible divergences. Thus, in the theoretical content, social networks are widely recognized as a fundamental tool for small businesses, allowing them to increase the visibility of products and services, attract new customers and build loyalty among existing ones. According to (59) social networks allow direct interaction between the company and the customer, which improves promotion. In this context, the survey results indicate that the vast majority of respondents (85%) use social networks to promote their businesses.

It is important to highlight that Facebook and Instagram are mentioned as the most effective social networks for digital marketing, especially because of their massive user base and specialized advertising tools (6). The survey results show that Facebook has 46.42% of respondents is the most used social network, followed by Instagram with 19.80%. This finding is aligned with previous studies indicating that Facebook remains the dominant platform for small businesses due to its wide audience and versatility in promotion (33).

However, it is interesting to note that although TikTok is an emerging platform with rapid growth, only 4.09% of respondents use it to promote products or services. This suggests that small businesses in the region have not yet adopted TikTok to a large extent, which could be a future opportunity, given that its short video format allows for more creative and engaging marketing (7).

According to (34) social networks play a key role in improving companies' market positioning and increasing their sales volume by facilitating both interaction with consumers and personalization of marketing messages. Thus, the survey results reinforce this theory, as 59% of respondents believe that social networks enable them to capture a larger market and increase sales, while 57% believe that they help convert prospects into customers. Thus, the data obtained confirm that social networks are perceived as an effective tool for promoting economic growth in small businesses.

This analysis also shows that 48% of the respondents consider social networks as an opportunity for economic growth, since they allow them to access new markets. This finding aligns with the statements of (22) who highlight the ability of social networks to expand the customer base both locally and globally. However, the relatively high proportion of respondents who do not use social networks (29%) highlights the need for further training in the use of these platforms, which was also identified as a crucial factor by authors such as (38).

Similarly, the frequency of use of social networks also has important implications for the effectiveness of digital marketing strategies. According to the data, 44% of respondents always use social networks to promote their products, and 23.5% use them sometimes. These results support the notion that higher frequency of use increases the visibility and impact of digital marketing, which is supported by authors

such as (1) who argue that consistency in digital promotion is essential to build a strong brand.

The importance of social media training is highlighted both in the literature and in the survey results. Fifty-seven percent of respondents strongly agree that proper digital media training is crucial to maximizing the impact of social media on their companies. In this sense, this result is consistent with studies that indicate that the lack of knowledge in digital tools is one of the main barriers for small businesses to take full advantage of the potential of social networks (60).

It is important to note that the trust and credibility generated by products promoted on social networks was also a central aspect of the survey. Sixty-three percent of respondents strongly agreed that products must be of high quality to generate trust in consumers. This is in line with studies suggesting that, for small businesses, product trust is a key factor in generating loyalty and improving sales in a competitive environment (47).

Similarly, the number of followers is an indicator of the reach of the promotion in social networks, and authors such as of (35) point out that a higher number of followers tends to correlate with higher interaction and sales. In the survey results, 43% of respondents have between 101 and 1000 followers, suggesting that most small businesses are in a growth phase in their networks. This number of followers allows for a sufficient audience for promotion, but also indicates that these companies should focus on increasing their reach.

The results of the Chi-square analysis, together with the data obtained in each table and process, provide valuable insight into the influence of the use of social networks in small businesses in Imbabura. The following details how these results influence the understanding of the use and perception of social networks in these companies. Thus, the Chi-square test indicates that there is no significant association between the type of social network used and frequency of use. This suggests that small businesses in Imbabura do not present a particular pattern linking the type of social platform with the frequency of promotion of their products or services. This lack of association implies that businesses, regardless of whether they prefer Facebook, Instagram, TikTok or other networks, show fairly homogeneous frequency usage patterns.

The Chi-square analysis revealed a significant association between the variables "social networks used" and "social network frequency". the result determines that the lack of significance between the type of social network used and the frequency of use implies that, in the context of this research, users do not show a specific frequency pattern depending on the platform. According to (30) defines that this result could guide companies to focus their strategies on other factors, such as demographic characteristics or type of content, instead of basing their efforts on the platform used. Similarly, (31) asserts that generalization in network usage strategy could be appropriate, focusing on consistency and content preferences rather than using a specific platform. This type of correlation underscores how diversification across platforms allows users to reach a larger number of audiences and strengthen their digital presence.

Based on the classification into three clusters: basic, intermediate and advanced, it provides a clear segmentation that allows to know different patterns of behavior in social networks, thus cluster 0 with intermediate users, who have a medium and consistent level of activity, suggesting that their digital presence is already stable, but still has room for improvement in efficiency and reach. This profile indicates a potential for the implementation of time and resource optimization strategies (49).

While in cluster 1 of basic users, it states that a low frequency of use and dedication to promotion is shown. This profile suggests a lack of knowledge or resources to exploit social networks as a means of promotion, which highlights the need for training programs and accessible tools (42).

Cluster 2 on advanced users defines that they stand out for their intensive use of social networks, high frequency of activity and considerable follower base, thus reflecting the importance of consistency and dedication for the growth of visibility and digital influence, in line with what was pointed out by (45)

Given that no significant association was found between social network use and frequency of use, it is

interpreted that the use of specific networks such as Facebook, Instagram, or TikTok is not conclusively associated with frequency of use among respondents. In this sense, it could be implied that the preference for a social network does not directly influence the usage habit, which is relevant for digital marketing strategies, as it suggests that campaigns could be focused evenly across platforms without worrying so much about the frequency of usage on each platform.

This result influences the interpretation of marketing strategies for these companies, as they can leverage any social network uniformly without relying on a specific platform to reach their customers with the same frequency.

5. Synopsis of the Main Research Outcomes

The research reveals the main patterns of use of social networks among small and medium-sized enterprises (SMEs) in Imbabura. Using chi-square analysis and cluster segmentation, the following main results were obtained:

Relationship between social networks used and frequency of use

The chi-square analysis showed that there is no significant relationship between the type of social network used and frequency of use. Demonstrating result that social network usage habits do not depend directly on the platform, but on external factors such as business objectives or the user's level of education.

Three main groups were identified

Having in the first group advanced users who have a high frequency of use, long lifetime, multiple platforms and a large follower base. This allows them to provide users with advanced digital advertising strategies, followed by intermediate users who have a moderate frequency, low diversification and small follower base. They show that they are users who are strengthening their digital presence and finally the basic users who are occasional users, and who spend little time to devote to promotion and have a limited follower base. They represent users in the early stages of digitalization.

Relationship between variables

A positive correlation was observed between promotion time and number of followers, demonstrating that consistency and dedication are key factors in building your digital presence.

6. Conclusions

One of the most significant conclusions of this study is that the majority of small businesses in the province of Imbabura have adopted the use of social networks to promote their products or services. Indeed, 85% of respondents stated that they use these platforms as part of their marketing strategy, thus underlining their relevance as fundamental tools in the field of digital marketing. However, 15% of the participants were identified as not yet using social networks, which represents an opportunity to implement awareness and training strategies around their use.

The comparison of the empirical findings with the theoretical framework confirms the growing importance of social networks for small businesses, especially in terms of marketing and sales strategies. In this context, Facebook and Instagram stand out as the most significant platforms, and the respondents' perception of the effectiveness of social networks matches what the authors have documented in their research. However, the results also highlight areas where companies can improve, such as the adoption of new platforms like TikTok and the need for training in the management of digital tools.

A key element highlighted in this study is the imperative need for training. Fifty-seven percent of respondents believe that it is essential to have adequate training in the use of digital tools and to know the consumption habits of customers in order to take full advantage of the potential of social networks. In this sense, small businesses must acquire the necessary knowledge to effectively manage these platforms and adapt to the demands of the digital market.

The analysis presented indicates a favorable trend towards the use of social networks as a strategic

resource for business promotion and growth. However, it also shows that many companies have not yet managed to fully exploit the potential that these tools offer. In this context, the strategic use of visual communication in social networks is essential for small businesses in the province of Imbabura. The ability to capture attention through images and other visual elements on networks such as Facebook and Instagram can be the key to increasing visibility and improving sales.

The effective adoption of social networks as a marketing tool can exert a significant impact on the transformation of small businesses in the province of Imbabura. According to the results of this research suggest that the proper use of these platforms can not only increase sales, but also improve the positioning of companies, helping them to expand their customer base to new markets. In addition, diversifying the use of emerging social networks, combined with increased training and education, has the potential to optimize performance and ensure the sustained growth of businesses in the province.

Social networks are a concrete opportunity for the growth of small businesses in Imbabura, allowing them to expand their customer base and maximize their profits. In this sense, it is suggested that entrepreneurs allocate resources to training in the use of digital tools, as well as to enhance their presence on these platforms. This will not only facilitate their access to new markets, but will also contribute to consolidate their success in the current competitive context.

The Chi-square analysis did not identify a significant association between the type of social network used and frequency of use. This suggests that, in this context, differences in user behavior are not determined by the specific social network platform, but possibly by other factors, such as content type or user characteristics. The lack of association may help companies understand that their strategies need not be differentiated strictly on the basis of platform, but should focus on content consistency and relevance.

Cluster segmentation has allowed us to classify users into three main groups, with advanced, intermediate and basic users. The first ones show high levels of interaction and promotion, representing an audience that can be leveraged through specialized content strategies and advanced analysis and monetization tools. The second group, intermediate users, would benefit from time optimization strategies and audience growth techniques and finally, basic users, have lower usage and dedication, and can be introduced to a more practical use of the networks through content guides and basic promotion tools.

7. Limitations, Implications, and Further Directions of Research

Limitations

The representativeness of the sample is limited to companies in Imbabura, which makes it difficult to generalize the results to other regions or cultural contexts.

Implications

As part of business practices and based on the results obtained, they reflect the importance of segmenting digital strategies according to the characteristics and levels of user experience. This allows companies to optimize resources and improve the impact of their marketing campaigns, likewise, within the digital training companies with less experience in social networks (Basic Users) need training programs to maximize the potential of these tools.

Future Directions

It is essential to carry out a geographic expansion, where the study can be replicated in other provinces to compare patterns and validate the results obtained.

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