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Effectiveness of digital marketing and its value in new ventures

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Abstract

This paper analyzes the effect of digital marketing and cluster membership on the entrepreneurship and performance of dental clinics in Colombia. The use of different digital marketing tools in dental clinics is evaluated, and the effect of these tools on the creation of new markets, and clinics' services and general performance, are analyzed. In addition, the cluster effect on the learning and implementation of digital tools in individual clinics is studied. The results show the most effective digital tools to create new markets, as well as the tools that improve clinics' performance through the Internet image and online visibility. The combined use of corporate Facebook and Instagram, a robust website with wide online visibility and YouTube develops the image of companies on the Internet in the most effective way. In addition, the importance of belonging to a cluster in the learning and implementation of digital tools in individual clinics was verified.

Keywords Clusters · Entrepreneurship · Digital marketing · Dental health · Organizational performance

Introduction

The evolution of digital media in recent years has brought about opportunities to more effectively enter new markets (Romero Leguina et al., 2020). The evolution of digital tools allows online marketing to become very effective (Cizmeci

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& Ercan, 2015). Marketing campaigns through digital media enable the obtained results to be ccurately measured and, thus, allow to adjust marketing much more efficiently than traditional marketing by generating high returns on marketing investments. Currently, consumers use both online and offline channels in their search for products and services, to inform themselves of their quality and prices, and to, finally, make purchase decisions (Rangaswamy et al., 2020). The advance and acceptance of the Internet as a channel of information and purchase render clear presence in digital media as necessary because it is the organization's visibility and Internet image that decide constantly growing online sales.

One business that is depending more on digital marketing is dentistry heath care. The current esthetics trend in dentistry forces the results of the work carried out by a clinic to be advertised before a patient decides to hire its services. Continuously displaying the results of its work and making the most of all the available digital tools to generate patient trust are crucial for dental clinics. Trust is the basis on which clients select a specialist to do any esthetic treatment (Song et al., 2023).

For dental digital marketing, the use of social networks is highly relevant when it comes to generating brand recognition. The volume of users in social networks grows daily, with the most attractive platforms being Facebook, Instagram and WhatsApp because of their number of users (Thelwall & Vis, 2017). TikTok must be added to these platforms due to its boom in the last 2 years. Facebook is considered the social network that generates the most engagement (Drummond et al., 2020), although Instagram is the dominant network in the segment of the population aged under 30 years (Syafganti et al., 2023; Cuevas-Molano et al., 2022).

One of the commonest social media healthcare industry strategies is to use these platforms to share health content, and to help a large volume of users acquire more knowledge about health-related topics (Al Ateeq et al., 2015). For a buyer or future patient to make the decision to use a certain professional's service, the contributions of previous users in digital media play a very important role. Thus, social networks facilitate the interaction between users and service providers by altering the way in which the purchase decision-making process or service demand is carried out (Schultz, 2016).

Knowledge of all the processes involved in clients' final decision making and the role that each of digital marketing tool plays in the sales process are essential for effective using digital marketing. This article presents the impact of employing digital marketing tools on the performance and development of new ventures by dental clinics. The growth of digital purchases and reservations of dental services, as well as the ability to win patients' trust through social networks, guarantee the relevance of the study (Happ & Ivancsó-Horváth, 2018). Entrepreneurship in new markets and services based on digital marketing is also studied.

This study also analyzes the effect of belonging to a cluster on effective digital marketing use. If we define clusters as the geographical concentrations of interconnected companies, specialized suppliers, service providers, companies in related industries and associated institutions in particular fields that compete, but also cooperate, belonging to a cluster can encourage dental clinics to make the most of digital marketing. Thanks to the information provided by the cluster, companies are aware

of the quality levels required by the market, they perceive changes in client needs, and they also have more information about the best digital marketing practices of the companies making up the cluster (Castillo et al., 2022).

Therefore, the main objective of this study is to analyze the digital marketing tools and their individual effects on the completion of online service sales. Another aim of this work is to analyze whether the fact of belonging to a cluster can generate added value through correct digital tools use. An important specific objective is to evaluate digital marketing tools to open new markets in the dental healthcare industry. Therefore, the research questions of this work are: How can digital marketing tools be combined to cover all online service sales phases? How effective are digital tools for opening new markets in the health industry where trust is a basic decision criterion? How important is to be in a cluster to access specialized digital marketing knowledge?

The article is distributed as follows: the following section establishes the theoretical framework and the working hypotheses. Subsequently, the methodology of the empirical study is discussed. The analysis and results are next presented. Finally, the conclusions and limitations of the study are included.

Theoretical framework

Porter (2001) already defined the Internet in 2001 as a technology that can be used in almost all types of industries as a complement to any strategy. Indeed the Internet has been gaining vast importance in current organizational strategic developments in almost all sectors and activities, but it is in digital marketing where the innovative capacity provided by the Internet and the emergence of new opportunities for entrepreneurs have become more evident.

The use of interactive digital technologies and the Internet to facilitate communication and dialog between companies and customers is known as digital marketing. (Coviello et al., 2001). Digital marketing uses existing digital technologies to support marketing activities to better understand the requirements of each market segment and to fulfill the desired objectives (Chaffey & Ellis-Chadwick, 2019). Thanks to the use of digital platforms, companies can more effectively reach potential customers at a lower cost (Jadhav et al., 2023).

Nowadays, organizations have realized the need to correctly use the different digital platforms and to develop effective digital marketing strategies (Bala & Verma, 2018). As the distinct digital platforms and social networks have various objectives and functionalities, it is necessary to know how each one works, and what its advantages and disadvantages are, to combine their use and to obtain strategic results from a marketing point of view (Phillips, 2003). One example is the development of websites that, without the combined use of social networks, cannot achieve the same success in an isolated way (Felt & Robb, 2016). As countless companies generate Internet marketing campaigns, users are more demanding in terms of the information provided by companies through websites, social networks, blogs, among other digital tools (Chaffey & Ellis-Chadwick, 2019).

Besides, accessibility to information, knowledge transfer and business execution through web-based technologies facilitate the emergence of new digital ventures

(Rogers, 2016). Information technologies generate changes in business models and transform industries (Bouncken et al., 2021). In recent decades, the Internet has led to numerous business opportunities for both services and products that break traditional business models (Leenders & Dolfsma, 2016). These new ventures are based on direct communication between seller and buyer through a digital platform (Cioppi et al., 2019).

Yet not only do new ventures have information technology as a fundamental tool. Today it is necessary for organizations to be present on both the Internet and social networks to appear on the market and be influential on it. Any type of company is forced to master the use of digital tools to increase its brand recognition and clients' trust, who demand its products and services. Technological innovation is a source of competitive advantages, which comes over as a very powerful determinant when differentiating among competitors (Halicka, 2017). Digital marketing tools make it possible to accurately analyze the impact they have on the demand for products and services, as well as clients' opinions that can be obtained through them (Smithson et al., 2011; Wegner et al., 2023). The Internet as a digital distribution channel and as a digital marketing tool allows to know profounder information about buying habits, tastes, purchase frequency, and all the necessary information for organizations to strategically act to keep active clients knowledgeable about the products and services they offer.

The Internet can have a strategic impact on many companies. The appearance of viral marketing, where digital content is shared *en masse* for a short time by generating all kinds of interaction with users of social networks, can position a company and create a brand image very quickly. Therefore, social networks have become powerful marketing tools (Turban et al., 2018). The large number of users around the world who constantly interact on the Internet allows companies to know trends in consumption terms. Knowledge of the behaviors and lifestyles (Wang & Street, 2018) of Internet users facilitates effective segmentation and efficient online advertising use. Another complex phenomenon that is very relevant to digital marketing is word-of-mouth (eWOM) on social networks. eWOM has a huge impact on online visibility, online positioning, followers on social networks and sales (Trusov et al., 2009). eWOM allows visits to websites and consultations in digital search engines, such as Google, to grow, along with positioning on these platforms, which all improves their visibility of companies (Bala & Verma, 2018).

The marked relevance and complexity of digital marketing have led many researchers to pay attention to understand how it works (Dwivedi et al., 2021). A good strategy to analyze digital marketing is to study the digital tools made available to companies in each sales process phases. In these phases, researchers distinguish different conceptual constructs of digital marketing, which causally explain a successful sales process. Client awareness through a company's online visibility, online reputation and customer engagement is the most relevant studied construct (Mohammad, 2022). Nevertheless, studies that analyze digital tools individually and their effects on each sale process are lacking.

Online visibility

The degree of probability of users finding an online reference or a direct link to a website or social network account is called online visibility (Drèze & Zufryden, 2004). It can also be defined as the ease, measured in time and accessibility terms, with which potential clients contact a company's website on the Internet. Online visibility is the stage before accessing a website. Websites have different options to generate online visibility, such as paid advertising on high-traffic websites and social networks. Therefore, online visibility is considered a critical resource that cannot be directly controlled directly by organizations (Neirotti & Raguseo, 2021). It is also a resource that feeds back as increases with website growth, website content, usability and number of users (Pant & Pant, 2018). Online visibility is created through a digital marketing strategy by means of search engine optimization, search engine marketing or online advertising campaigns through different digital marketing tools. Online visibility is also generated by strategic efforts to develop brands through traditional marketing and its different tools. Hence a direct association exists among the company's brand image, the quality of its products and services, and created client trust with online visibility (Pérez-Rodríguez et al., 2019). In general, brand recognition is also related to online visibility (Smithson et al., 2011).

Online visibility makes a clear difference between companies regarding the number of clients who access their products and services for the first time, and it is the first step to start building client trust (Popova et al., 2019), trust that is so important in electronic commerce (Khwaja et al., 2020).

Having good online visibility and recognition requires making high investments in time and resources. For this reason, it is necessary to establish a strategy that allows consistent and measurable objectives to be met over time. One of the current tools that generates online visibility and trust the most is search engines like Google (Smithson et al., 2011) because a large number of people around the world use them for all kinds of queries. A correct positioning strategy in Google with the most searched keywords, together with aggressive campaigns on all digital platforms, generates very high visibility on the digital market for obtaining first contact, brand recognition, trust and, finally, clientele.

Furthermore, the presence on highly recognized digital platforms, which allows a company's advertising to be visible, helps online visibility together with its level of trust (Wei, 2001). So, it is essential for companies to have a clear coordinated presence strategy on different platforms because this allows access to the target market with efficient resources use (Wong, 2005). Digital tools must be efficiently employed, and this is only possible if the digital marketing knowledge level is high. Experience and knowledge in digital marketing will allow any organization to improve its online visibility and to also provide market information and preferences, to help companies to stay ahead of constantly changing consumer preferences (Wiredu, 2022).

Online visibility tools

Currently, there is a large number of websites and social networks that allow online visibility to be developed (Pant & Pant, 2018). Online search engines like Google, Yahoo, Bing, among others, are those that best permit organizations to develop online visibility (Cizmeci & Ercan, 2015). Each search engine and social network has different methodologies to improve online visibility (Bala & Verma, 2018), which allows users to employ keywords to find the information they are looking for.

There are different ways for companies to improve their online visibility either organically or non-organically. The first is to generate content where the title contains keywords that are frequently typed in as part of network users' searches (Ilfeld & Winer, 2002). This method is known as search engine optimization (SEO). This technique is also used on social networks, such as Instagram, Facebook and TikTok, where content search volumes have significantly increased in recent years (De Pelsmacker et al., 2018). In addition to this positioning technique, Google, the most important search engine today, has the Google AdWords tool that allows payments to be made to obtain the temporly positioning of a website within the Google search engine with keywords and phrases (Bala & Verma, 2018). This type of strategy is known as search engine marketing or SEM (Sen, 2005). Bing Ads in the Yahoo search engine (Yahoo Bing Network) also allows the same paid positioning strategy to be applied in the search engine.

Social networks like Instagram, Facebook and TikTok are tools that allow online visibility to develop (Ferreira & Serpa, 2018). Thanks to their algorithms, these platforms generate traffic through hashtags, keywords, phrases and the share button. In turn, these social networks allow the creation of paid advertising campaigns at affordable prices, with the possibility of effectively segmenting the target audience (Nishi et al., 2015).

A website is undoubtedly one of the most powerful tools for online visibility (Baloglu & Pekcan, 2006) and has the ability to provide company information and record interactions with potential clients to learn about their needs (Gretzel & Yoo, 2008). Having a well-designed reliable website builds trust with potential clients. This trust, which is generated through online reputation, is essential for deciding purchases, and it is the second necessary characteristic to gain consumers after being known by clients thanks to online visibility.

The Internet allows the proliferation of countless sources of information, but does not guarantee its veracity. This phenomenon has led to the development of different websites that have positioned themselves on the market for their level of veracity by generating trust among Internet users (De Pelsmacker et al., 2018). These trusted websites offer companies the possibility of generating traffic to their own sites (Zheng et al., 2021).

Online reputation

Online reputation is a mix of characteristics that comprise excellent reviews, good positioning in search engines, easy-to-use platforms for all types of audiences, high-quality pre-sales, sales and post-sale services, and support from the

company that protects the client when making transactions with it (Cantallops & Salvi, 2014).

There are several strategies to achieve online reputation, but there must be solid products and services that support the strategy. The use of SEM strategies on digital search platforms, social networks, blogs and sites of interest on the Internet helps to build trust among users (Gangananda et al., 2022). With a constant strategic use of these tools, online visibility grows. However, this implies a bigger volume of users on the Internet and for the service provided to be publicly exposed. So any deception by the company would be quickly reflected and its online reputation could be quickly lost. Organizations are limited as regards the content of comments, and can only foster the presence of reviews. The different online platforms that serve as intermediaries between the user and the company have developed tools that allow customers to interact in order to disclose and learn about user experiences. Yet comments cannot be altered by the reviewed firm. Thanks to this, trust between service applicants and service providers is generated.

In addition, and as previously mentioned, the good positioning of websites in Internet search engines, together with positive comments, generate users perceived trust (Papathanassis & Knolle, 2011), a factor that helps to increase sales and, in turn, to improve online reputation (Ye et al., 2009).

Thus online reputation is extremely sensitive on the Internet and strongly influences electronic word of mouth (eWOM) (Chevalier & Mayzlin, 2006), which is an important factor for consumers of products or services. eWOM is a relevant factor in the purchase decision process when purchasing on the Internet (Levy et al., 2013). Having more visibility on the Internet, together with good comments about products and services, allows organizations to improve their volumes of visits, interest and sales (Ye et al., 2009).

Online reputation tools

Knowing what clients think about a company and what they have experienced with its products or services is essential for any organization. This knowledge helps to improve the product or service and to become more competitive. Digital marketing tools allow this basic marketing activity to be performed very efficiently (Peco-Torres et al., 2023). It is normal for platforms that offer directory services, such as hotel reservations, medical and dental appointments, purchases, among others, allow users to leave their comments and ratings of products and services in a visible way. This information is vital for companies to improve their products and services, but also for potential new users to obtain references about a specific product or service on the Internet. When a company has a competitive product or service, by properly utilizing digital marketing tools, a very high positioning on the Internet can be obtained, which is perceived as an indicator of reputation (Schultheiss et al., 2018).

Google is one of the most visited search engines in the world and builds Internet users' trust. Google has different tools that allow it to generate online reputation,

such as its Google My Business extension, in which companies create their profiles and generate visibility on international GPS, such as Google Maps and Waze. This tool allows users to give a rating from 1 to 5 stars and to leave a comment about their experience with the company, service or product. Companies, in turn, can upload photos of their products and relevant information about their businesses, which can dispel many doubts and misgivings among consumers.

The platforms to search and classify hotels and tourist plans, digital directories of doctors and dentists, among many other types of businesses, enable the companies in these directories and search engines to show the benefits of their products and services through the comments left on the platform. This information is vital to generate improvement plans (Devece et al., 2017). As we have seen, although there is a clear difference between the online visibility and online reputation concepts, most digital marketing tools develop and work with both factors at the same time. From an operational point of view and given the objectives of the present study, we measure the combined action of online visibility and online reputation (Habib et al., 2022) using the Internet brand image construct (Suryani et al., 2021). This is not the case for client contact tools which, for dental clinics, implies direct contact with professionals as well as negotiation to close sales (Saberian et al., 2020). Businesses should be more concerned about the large number of online reviews rather than the credibility of online reviews because a large amount of negative eWOM (electronic Word of Mouth) can even seriously weaken a strong brand image (Hoang & Tung, 2023).

As a summary of the ideas raised in the theoretical analysis, we propose the following hypotheses:

H1: *To develop the Internet Brand Image, an effective combination of the following digital tools is required: corporate Facebook, corporate Instagram, a website, YouTube, Google My Business and Google AdWords.*

The use of digital tools would attract more clients, and this should be reflected in the clinic's capacity use growing. It must be noted that as a service, one of the more important managerial aspects to be considered in dental clinic's performance is the use of its capacity (Smith-Daniels et al., 2007). The measurement of using a dental clinic's capacity is an essential dimension of its performance. Improving capacity use by digital marketing implies not only a good Internet brand image, but also the combination of other direct digital marketing capacities to inform the client and to close sales. Previous studies show that the more consumers recommend a product to other consumers through social networking sites (SNS), the more credibility of SNS to build, and recommendations have more significant impact on purchase decisions (Siddiqui et al., 2021). For a SNS to have an impact on clients, it must have a big volume of users´ interactions. Thus, only the most important SNS should be taken into account as brand image development tools, such as Instagram, TikTok and Facebook.

Then:

H2*: To improve dental clinics' capacity use, the combined use of Internet brand image development tools with contact management and sales closing tools is needed.*

It is important to state that we consider not the simple use of the digital marketing, but its effective use. So, it is crucial for this research to define in the methodology section how to measure the effective use of different digital marketing tools. Khan et al. (2023) show that credibility and brand image in the social network marketing context to play a vital role in influencing consumers' online purchase intentions through certain characteristics like trustworthiness, information quality, professional value and influencer credibility. Digital tools are crucial for influencing consumers' purchasing intentions. Digital marketing enables companies to segment and target their marketing efforts more effectively by analyzing data to identify the targeted customers with the right message. This can lead to higher sales and higher ROI (Jung & Shegai, 2023). Alwan and Alshurideh (2022) show that digital marketing positively and significantly affects the purchase intention variable.

Entrepreneurship and digital marketing

Today, digital tools have enabled a large number of innovative businesses to be born and rapidly grow (Kraus et al., 2019). The big volume of Internet users and social networks around the world has favored the digitization of transactional processes and communication with end users in all organizations by generating entrepreneurship and new business development opportunities (Anisimova & Klyueva, 2019). Digital marketing, particularly the use of social networks, can facilitate entrepreneurship on new markets by increasing the company's visibility (Vafeiadis & Skordoulis, 2020). Therefore, entrepreneurs can greatly benefit from digital marketing because it allows direct rapid business growth at a lower cost (Ratten, 2020). In addition, the analysis of social networks allows to discover clients' needs by creating new services or adapting existing ones. In new ventures, maximum performance must be achieved if the aim is to correctly grow (Bala & Verma, 2018). Another advantage of digital marketing for entrepreneurs is that it allows scalable growth (Mohammad, 2022). As a business grows, it can increase its digital marketing efforts and reach an ever-widening audience without incurring significant costs.

Through digital marketing, companies can reach audiences with a high degree of segmentation and interest in the services or products they offer. Besides, digital marketing can meet marketing objectives with a lower budget than other advertising types, which allows access to new markets at a lower cost (Wegner et al., 2023).

For new entrepreneurs, digital marketing is a valuable tool that enables informed strategic marketing decisions (Marques et al., 2022). The different current digital tools provide entrepreneurs with the ability to measure Digital Marketing effectiveness in marketing and the effects of each campaign which, in turn, allows them to develop new and better. So, we can state:

H3: *Digital marketing facilitates undertakings on new markets.*

In this case, and as a combination of the three previous hypotheses, we affirm that:

H4: *When digital tools are effectively used, the return on investment in digital marketing is positive through Internet brand image, capacity use and creation of new markets.*

Digital marketing and clusters

The success of employing marketing tools is based on a combination of profound knowledge of the sector and how the marketing tools can be applied specifically to it. In the present-day, the most spectacular and potentially powerful digital marketing uses go beyond non-technical people's knowledge. Only professionals in digital marketing can make the best of deploying these tools. While early digital marketing uses attempted to promote online visibility to learn about the products and services offered by different companies, current advances address improvements in terms of detailed segmentation to achieve greater effectiveness in campaigns carried out through digital tools.

Most studies have focused on the impact of digital marketing on sales, Internet brand image and the ability to achieve competitive advantages. So, the real value of horizontal cooperation among firms, as in dental clinic clusters, depends on the good practices and knowledge developed by digital marketing experts and the industry firms in close collaboration (Tarazona-Montoya et al., 2020). Small- and medium-sized enterprises (SMEs) do not usually have specialized resources on the digital market, and they are not even able to follow the technologic dynamic environment (Centobelli et al., 2016).

The impact of marketing tools on an organization's activities can vary depending on the characteristics of the sector in which the organization operates. The health industry, like many service industries, is considered to be strongly influenced by digital marketing (Swan et al., 2019). This is usually attributed to the fact that health is an information-intensive industry (Yague-Perales & March-Chorda, 2013). Patients' information needs vary and are sometimes complex, including diagnosis, treatment and follow-up, but sometimes transport and accommodation. The variety of information needed by clients to select a dental clinic means that the support in marketing tools afforded by the cluster alliance could play a moderating role in the clinic's performance (Felzensztein et al., 2014; Karakayaci & Dincer, 2018). Therefore, we can state:

H5: *Belonging to a cluster has a positive effect on the effective use of digital tools.*

The theoretical model of the five hypotheses can be summarized as shown in Fig. 1.

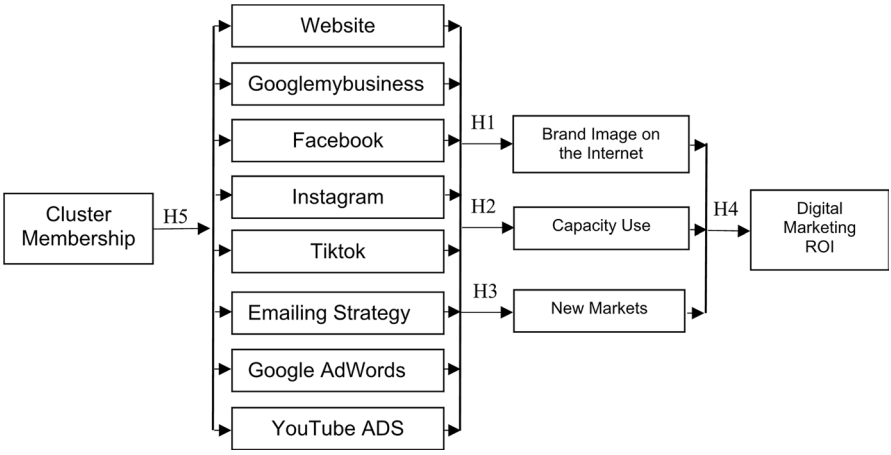


Fig. 1 Theoretical model with the hypotheses

Methodology

Procedure and sample

Research was conducted from June 2021 to May 2022 in cities of Colombia: Bogotá, Cali, Medellín, Bucaramanga, Barranquilla, Manizales, Pereira, Armenia, Pasto, Cartagena and Santa Marta. These are the largest cities in Colombia in size and population density terms.

Measurements were taken with surveys by telephone calls and video calls by Zoom, Skype, Teams and WhatsApp videos to each dentist and manager of dental clinics, who collaborated to collect data. Three hundred surveys were obtained from 300 dentists, dental centers or dental clinics to evaluate 16 variables, divided as follows:

Digital marketing tools: Website; Facebook; Instagram; Google My Business; emailing Strategy; Google AdWords; YouTube ADS; TikTok.
Cluster Membership: The clinic belongs to a cluster, such as www.redodontologos.com, www.topdoctors.com, www.doctoralia.com, www.starofservice.com, among others (dichotomous variable).
Dependent variables: Internet brand image; Clinic's capacity use; Digital marketing ROI; opening new markets.
Control variables: Age of the company and number of employees (size).

Measurements

Despite the widespread use of the digital marketing tools considered in this study (included Internet brand image), there were no validated scales to measure their effective use in marketing initiatives that adjust to the research set out in the

previous sections. Thus, specific new scales were created. The procedure followed to develop them was based on three steps (Dubey & Sangle, 2019): first, item generation and selection using literature reviews and interviews with three professional experts in digital marketing; second, scale refinement involving focus groups for content validity and a final pilot study; third, scale validation (see the Analysis and Results section) by checking that scales fulfilled the psychometric properties of the measurement scales (). The digital marketing tools (independent variables) used in each dental clinic were assessed by the authors. Seven characteristics or items were assessed dichotomously with one or zero points for each tool. Each of these characteristics contributes to the final score of the variable, with a maximum of seven for each digital marketing tool. The characteristics assessed for each tool are as follows:

Website: There are many recommendations about how to create a website properly for good use experience and effectiveness to promote sales. To gain a larger audience, it is necessary to achieve positive positioning on Google, which means more probabilities of more clicks made on the website. All these aspects were included in the following seven-item scale. Website has SSL security; Website uses PC chat and WhatsApp chat; Online appointment booking; Multilanguage translators; PSE payment channels; Mobile responsive web use; Google indexing with SEO.

Google My Business: To measure the correct use of Google My Business, it is necessary to take into account several aspects related to the keywords for positioning and to fill in the relevant information about the company (Purbasari et al., 2021). The final scale contains the following items: the clinic has a business account on Google My Business; update photos on Google My Business at least once a week; update videos on Google My Business at least once a week; carries out SEO on Google My Business; answers clients' questions in Google My Business within a maximum of 24 h; has updated working hours in Google My Business; has the following activated buttons: call, website, how to get there.

Facebook: The most relevant aspects to evaluate the optimal use of Facebook (Sabate et al., 2014) by a company are related to interaction with clients (Gordon et al., 2019). The final scale is as follows: the clinic has a fan page, posts more than one publication a day, makes at least one advertising payment per month, uses the fan page service scheduling option, has the Facebook pixel linked to its website, posts in specialized sales groups and services at least once a week; carries out campaigns to generate leads; performs some type of management to increase Facebook followers (Su et al., 2015).

Instagram: This tool is relevant to increase both online visibility and trust (Chen et al., 2021). The items considered to be included in the scale are: the clinic has corporate Instagram; it has completed the email, telephone, address and website items; it has linked its Instagram account with its Facebook fan page; it makes at least one publication per day with key hashtags; it makes at least one advertising payment per month; it places at least one daily post to stories to promote its services or products; the corporate Instagram profile has SEO keywords.

TikTok: This tool, like Instagram, is essential for the company's online visibility and perceived trustworthiness (Guarda et al., 2021; Haenlein et al., 2020).

The final items for this scale are: the clinic has a business account; it posts daily at least one video that generates traffic to its website; it creates highly trending hashtags in its publications; it carries out paid advertising campaigns through the platform at least once a month; it has a percentage of likes on posts of more than 10% of its total followers for more than 90% of its posts; it gains more than 50 new followers per day; it uses high-quality sound trends to improve organic impressions on all its posts.

Emailing Strategy: This tool enables enterprises to promote their products and services by email campaigns once the client has been reached out to (Thomas et al., 2022). The selected items for this scale are: the clinic carries out campaigns with landing pages for email database management; it carries out one campaign per month; its carries out two campaigns per month; it sends campaigns to more than 100 users; it performs segmentation for each campaign; campaigns contain links to schedule appointments; there is a premium account for sending massive messages.

Google AdWords: This tool allows companies to reach their target audience through search, display, video ads, among others, by means of paid campaigns (Szymanski & Lininski, 2018). To evaluate this digital tool, the intensity of its use was directly measured instead of the effectiveness of its campaigns**.** The final items for this scale are: to evaluate the Google AdWords tool, the number of campaigns carried out per month was considered. The clinic that carries out less than one campaign per month obtains a score of one, one campaign per month two points, two campaigns per month three points, and so on until the clinic that carries out six campaigns or more per month obtains the maximum score of seven.

YouTube ADS: YouTube Ads allows companies and brands to place advertising in this vast content ecosystem by offering the opportunity to perform precise segmentation with a variety of advertising formats with less intrusive advertising (Djafarova & Kramer, 2019). As with Google AdWords, the evaluation of this tool is based on the intensity of its use. To evaluate the YouTube tool, the final items for this scale are: the number of campaigns carried out per month is considered in such a way that the clinic which performs less than one campaign per month obtains a score of one, one per month two points, and so on until the clinic that carries out six campaigns or more per month obtains the maximum score of seven.

Besides the digital marketing tools set out below, the clinic's cluster membership was assessed as follows.

Cluster Membership: the clinic uses digital platforms other than traditional social networks to promote its services, such as www.redodontologos.com, www.topdoctors.com, www.doctoralia.co, www.starofservice.com, among others (yes 1/ no 0).

The performance variables were assessed as follows.

Internet brand image: Seven marketing landmarks of the clinic were checked by assigning one or zero points to each landmark. Each of these landmarks contributes to the final score of the variable, with a maximum of seven. The landmarks are: the clinic has more positive than negative comments in Google My Business; a rating of the dentist or clinic above three stars in Google My Business; the clinic has more than five recommendations in the different digital directories

of dentists in Colombia; it has a percentage of likes in Instagram posts with more than 10% of his total followers in more than 90% of its posts; has at least five labels from the dentist or clinic in the posts of any social network per month; the profile of the clinic or dentist appears in Google search results, regardless of it being on a social network or in a digital directory; posts from the clinic or dentist are shared by more than 10% of its followers on Instagram (Chakraborty & Bhat, 2018).

New Markets: the dentists and managers of each clinic were asked about the percentage of new clients obtained through digital marketing campaigns in the last year. This scale was rated from 1 to 5, with 1 being less than 5%, 2 up to 15%, 3 up to 25%, 4 up to 35% and 5 more than 45%.

Capacity Use: the patients attended to/the clinic's capacity ratio was assessed by inquiring directly with the dentist and/or manager of the dental clinic.

Digital Marketing ROI: The dentist and/or manager of the dental clinic was asked about the following data: (1) the average number of patients obtained through social networks and through the website per month; (2) the monthly average number of patients attended to. The Digital Marketing ROI was calculated by dividing (1) by (2).

Finally, the organization's age and size (Ravichandran et al., 2005) were used as the control variables to control the endogeneity relations between the dependent and independent variables that might produce misleading results. Age was measured by the number of years since the clinic opened. Size was measured by number of employees.

Table 1 presents the mean, standard deviation and correlation coefficients between variables.

Analysis and results

We studied the relation between the scales of the different digital marketing tools before testing the hypotheses by carrying out an exploratory factor analysis with varimax rotation (Table 2). Only two marketing tools were grouped in the same factor: Google AdWords and Google My Business; see Factor 1 in Table 2). To avoid collinearity problems in regressions, the two variables (Google AdWords and Google My Business) were merged into one and calculated as the mean of both of them.

The hypotheses were tested by hierarchical regressions using ordinary least squares. Internet brand image and Capacity use were taken as the dependent variables in Model 1 and Model 2, respectively. The estimation by the managers of the Digital Marketing ROI was the dependent variable in Model 3. The digital marketing tools were used as the independent variables in Models 1, 2, 3 and 4 (see Table 3). As some independent variables were highly correlated (see Table 1), multicollinearity was checked by employing variance inflation factors. A threshold value of 10 was considered to be an indicator of multicollinearity. Collinearity remained low even in all the models. The residuals for all the models met distributional assumptions.

Table 1 Descriptive statistics and correlations of variables

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1.Website	1.92	2.00												
2. Googlemybusiness	0.34	0.47	0.11*											
3. Facebook	3.96	1.98	0.13*	0.38**										
4. Instagram	4.23	2.01	0.17**	0.63**	0.16**									
5. Tiktok	3.93	2.04	0.07	0.74**	0.39**	0.74**								
6. Emailing Strategy	1.94	0.85	0.16**	0.10	0.16**	0.07	0.11							
7. Google AdWords	2.00	1.03	0.27**	0.19**	0.24**	0.24**	0.21**	0.31**						
8. YouTube ADS	1.12	0.69	0.41**	0.22**	0.23**	0.23**	0.21**	0.31**	0.57**					
9. Cluster Membership	0.38	0.49	0.11	0.93**	0.39**	0.65**	0.75**	0.08	0.24**	0.22**				
10. Internet brand image	0.54	0.30	0.11	0.77**	0.40**	0.81**	0.85**	0.06	0.19**	0.19**	0.81**			
11. New Markets	3.03	1.15	0.92**	0.67**	0.46**	0.64**	0.64**	0.21**	0.38**	0.25**	0.68**	0.66**		
12. Capacity Use	0.70	0.21	0.06	0.61**	0.29**	0.49**	0.60**	0.03	0.09	0.11	0.67**	..62**	0.46**	
13. Digital Marketing ROI	2.43	1.93	0.20**	0.47**	0.26**	0.55**	0.50**	0.07	0.24**	0.35**	0.53**	0.57**	0.48**	0.40**

N = 298

**Statistically significant at $p < 0.05$

Table 2 Exploratory factor analysis of the Internet tool scales

Variables	Factor loadings						
	1	2	3	4	5	6	7
Website	0.06	**0.97**	0.06	0.05	0.10	0.00	0.17
Googlemybusiness	**0.84**	0.01	0.04	0.29	-0.02	0.02	0.12
Facebook	0.19	0.05	0.07	**0.96**	0.10	0.03	0.07
Instagram	0.92	0.10	0.01	-0.08	0.15	-0.18	0.04
Tiktok	0.12	0.11	0.14	0.11	**0.93**	0.01	0.26
Emailing Strategy	0.04	0.06	**0.98**	0.06	0.13	0.01	0.12
Google AdWords	**0.85**	0.00	0.04	0.19	0.08	**0.46**	0.05
YouTube ADS	0.13	0.21	0.15	0.09	0.29	0.01	**0.91**

Varimax rotation, N = 298

The results in Table 4 show the effects of the digital marketing tools on four different variables. Model 1 evaluates the direct effect of digital marketing tools on Internet brand image. The most relevant result of this model was that 82% of the Internet brand image was explained by the independent variables, including the control variables. The most important tools to create an outstanding Brand Internet image were Facebook (regression coefficient = 0.16 with $p < 0.01$), Instagram (0.49;

Table 3 Standardized regressions of the digital marketing tools effects on the dependent variables

	Standardized coefficients			
Model	**1 (H1)**	**2 (H2)**	**3 (H2)**	**4 (H4)**
Dependent variable	**Internet Brand Image**	**Capacity Use**	**New Markets**	**Digital Marketing ROI**
Control variables				
Age	-0.03	0.01	0.01	0.01
Size	0.03	0.01	-0.05	-0.03
Digital marketing tools				
Website	-0.02	-0.15**	0.18**	0.03
Facebook	0.16**	0.08	0.21**	0.09
Instagram	0.49**	0.13*	0.29**	0.37**
TikTok	-0.04	-0.05	0.20**	-0.02
Emailing Strategy	-0.03	-0.03	0.08*	-0.05
YouTube ADS	-0.02	0.04	-0.16	0.22**
Google AdWords and Google my Business	0.45**	0.54**	0.38**	0.17*
F-value	153.94**	24.95**	60.11**	20.17**
Adjusted R^2	0.82	0.42	0.64	0.37

N = 298

*$p < 0.05$; **$p < 0.01$

$p < 0.01$), Google my business and Google AdWords (0.45; $p < 0.01$). The results confirmed Hypothesis 1 for digital tools Facebook, Instagram, Google AdWords and Google my Business. In this case, website was not significant.

In Model 3, the regression results indicated that the creation of new markets by dental clinics in Colombia can be explained ($R^2 = 0.64$) by correct digital tools use. The most important tools in this case were Google AdWords and Google My Business (0.38; $p < 0.01$), and Instagram (0.29; $p < 0.01$). The results confirmed Hypothesis 3: digital marketing facilitates undertakings on New Markets, especially Google my Business, Google AdWords and Instagram.

Model 2 showed that digital marketing tools explained 42% ($R^2 = 0.42$) of the variance of Capacity Use. The most effective tools for improving dental clinics' Capacity Use were Google my Business and Google AdWords (0.54; $p < 0.01$), although the model showed certain collinearity with a negative significant coefficient for website. This confirmed Hypothesis 2.

In Model 4, Digital Marketing ROI was assessed. Indeed 37% of the Digital Marketing ROI variance was explained with only good digital tools use. The most significant tools were Instagram (0.37; $p < 0.01$), YouTube ADS (0.22: $p < 0.01$), Google AdWords and Google my Business (0.17; $p < 0.05$). In the four models, the control variables were not significant. $p < 0.05$). The results of Model 4 confirmed Hypothesis 4. In this case, when the economic performance of digital marketing was assessed, the combined use of tools for developing Internet Image and contact and sales was needed.

A fifth model (Table 4) was run to compare the effect on the Digital Marketing ROI of three variables: Internet Brand Image, creation of New Markets and Capacity Use. The effect of the two control variables (Age and Size) was also calculated. The control variables were not significant. The value of this regression model in Table 4 lies in it proving that the relation between digital marketing tools and digital marketing ROI ($R^2 = 0.37$ in the table) was fully mediated by the variables Internet Brand Image, New Markets and Capacity Use. It is important to note that Capacity Use and

Table 4 Standardized regression of the digital marketing ROI

Dependent variable	**Digital Marketing ROI (standardized coefficients)**
Control variables	
Age	0.02
Size	0.02
Independent variables	
Internet Brand Image	0.20**
New Markets	0.49**
Capacity Use	0.49**
Adjusted R^2	0.65
F	110.83**

N = 298

*$p < 0.05$; **$p < 0.01$

Creation of New Markets had a stronger influence on the Digital Marketing ROI (the regression coefficient was 0.49** in both cases; see Table 4).

The three combined independent variables explained 65% of the Digital Marketing ROI variance (see Table 4).

Finally, Table 1 reveals that Cluster Membership had a significant effect on nearly all the digital marketing tools. All the correlations were significant between Cluster Membership and the studied marketing tools, except for Website (0.11; $p > 0.05$) and emailing strategy (0.08; $p > 0.05$). For Facebook, Instagram, TikTok YouTube ADS, Google AdWords and Google my Business, the correlations with Cluster Membership were all significant at $p < 0.01$. This confirmed Hypothesis 5. The Website and email strategy exceptions can be explained because the design of Websites and the use of emailing in marketing campaigns need less specialized and accessible knowledge than the rest of the digital tools.

In this study, and as amply analyzed in previous research works (Bala & Verma, 2018), it is a basic assumption that businesses can make the most of Digital Marketing tools that use SEO, such as GoogleMyBusiness, website and Instagram. Employing paid campaigns and social media marketing is important, such as Instagram, Facebook, YouTube and Google. The tools that use content marketing, such as TikTok, are becoming more important in new business development. E-mail direct marketing is also considered.

The studied dental clinics are all SMEs. Digital marketing can be exploited by both SMEs and large companies. Information technology is exogenous to most companies and can be bought inexpensively by any firm (). These companies can use digital marketing strategies to sell products, generate brand awareness or access new markets (Saura et al., 2023). One important sector in which digital marking has been successfully applied is the healthcare industry. Digital marketing creates new business opportunities and yields new business models to address medical practice issues (Kraus et al., 2021).

Conclusions

This study explores the role played by digital marketing tools in two important elements of performance of the dental health industry: capacity use and creation of new markets. The digital marketing ROI is also analyzed. Digital tools enable access to the targeted segments of the population in a very efficient and precise way. They help to know clients' needs and tastes, and the degree of acceptance of products and services. They also allow to profound knowledge of the market and competitors to be acquired.

The main novelty of this study compared to past research lies in the fact that the analysis of the digital marketing effects was done directly through individual tools by analyzing their functions within different marketing activities. Thus, an Internet brand image construct can be created to differentiate specific effects on online visibility and client trust. The importance of digital tools is also analyzed individually in creation of new markets and their general effect on marketing performance through the digital marketing ROI.

The results show that the principal tools to create engagement between a dental clinic and patients, and to make contents for marketing and brand promotion viral, are Instagram and TikTok. These platforms have emerged as powerful platforms with which to reach a wide audience worldwide. Thus, the role played in creation of new markets is essential. Instagram, a popular photo- and video-sharing platform, allows dental clinics and dentists to share contents about their dental treatments to reach their targeted population segment, and to post videos with reviews of people who have obtained their dental treatments to create trust. TikTok, on the other hand, has gained immense popularity for its algorithm-driven content discovery and viral challenges. This platform is a good option for dental clinics and dentists to attempt to viralize their contents, and also for gaining visibility and to access new markets. Other digital marketing tools, YouTube, Google My Business and e-mailing strategy can help to develop the company's Internet image.

In addition to the combination of different digital tools, such as Instagram, TikTok or Facebook, a robust website helps with a second phase in the sale cycle, that of helping to reinforce client trust, and to facilitate contact and communication to complete a sale.

The main theoretical contribution of this work is to consider the online sale of a service to be a complex process (online visibility, online reputation, client engagement) with parts that, despite overlapping and interacting in online tools, are conceptually and clearly differentiated.

This has important managerial implications for the design of digital marketing strategies. The effectiveness of these platforms may vary depending on the target audience, industry and marketing objectives. It is essential for firms to analyze their target market and to choose the platforms that better align with their goals and audience.

One important result of this study is that the specialized knowledge needed to deploy the potential of digital marketing tools must be obtained outside firms if they are micro-enterprises, which is the case of most of the dental clinics included in this research work. Thus, belonging to a cluster can improve access to resources and knowledge, while appropriate digital tools use can improve the company's Internet image and its online visibility by, therefore, generating well-founded growth. Cluster membership helps to obtain professional services and know-how in a specialized sector, such as the dental health industry. This is clearly proved in the significant relation between cluster membership and the digital marketing ROI in the Results section.

These results have implications for those strategies designed to open new markets and to increase sales through digital marketing.

Study limitations and future research

The main limitation of this study is it was confined to a single country and sector, which makes it difficult to extrapolate the obtained results. The dental health sector has its own characteristics in both the structure of the sector, made up mostly of micro-enterprises, and in digital marketing tools use. For instance, the tools that

deal with client trust play a fundamental role. In addition, the characteristics of a service require paying special attention to capacity use as a measure of performance. The Colombian dental health market also has its own characteristics, but the most differentiating feature is that dental health in Colombia is very competitive in quality and price termss, and this internal competition makes some clinics' internationalization possible (Estrada-Cruz et al., 2022).

Regarding the study limitations, we indicate the drawbacks of using a survey. Nevertheless, the digital tools used by the clinics were directly assessed by researchers, then reducing the respondents' subjective self-assessment to only the variables related to the clinic performance.

Thus, future research should confirm the results obtained in other countries and sectors. In addition to the aforementioned question of sector and country, future research could take a narrower, but deeper, scope by adding organizational and managerial variables to the model and separately analyzing the effects of digital marketing tools on entrepreneurial initiatives and the importance of clusters on mastering digital marketing. Another important aspect to be developed by future research would be to employ automated scales to measure companies' digital tools use. The inclusion of strategies in SEO use in different digital marketing tools should be considered in future research works.

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