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The works must be unpublished and refer to topics of business, administration-administrative, management-SME, management-tourism, hotel, management-financial, administration and other topics related to Social Sciences.

Presentation of the Content

Issue fourteen, is presented an article *Reflections on the factors that affect the use of social media in small and medium enterprises: a literature review* by OLIVEROS-COELLO, José Pablo & GUZMÁN-SALA, Andrés, with adscription at Universidad Juárez Autónoma de Tabasco, in the next article *Quality management system in the supply chain of the metal mechanical manufacturing industry*, by MEDINA-ELIZONDO, Manuel, MOLINA-MOREJÓN, Víctor Manuel, FERNÁNDEZ-CONTRERAS, Laura and RODRÍGUEZ-FIGUEREDO, Sandra, with adscription at Universidad Autónoma de Coahuila, in the next section *Study of Integral Logistics in areas of a supermarket, in the city of Villahermosa, Tabasco, Mexico, for a comprehensive improvement proposal* by ELISEO-DANTÉS, Hortensia, MADRIGAL-ELISEO, José Luis, GARCÍA-REYES, David Antonio and CARRILLO-RAMOS, Gui Envy Jesús with adscription at Instituto Tecnológico de Villahermosa, in the next section *Application of the integral technique of productivity evaluation in the bovine industry in the city of Villahermosa Tabasco*, ESTEBAN-CONCHA, José Manuel, NOTARIO-PRIEGO, Ezequiel, PÉREZ-VÁZQUEZ, Adrián and LOPEZ-VALDIVIESO, Leticia with adscription at Instituto Tecnológico de Villahermosa.

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Reflections on the factors that affect the use of social media in small and medium enterprises: a literature review´

Reflexiones sobre los factores que inciden en el uso del social media en las pequeñas y medianas empresas: una revisión de literatura´

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Abstract

The purpose of this article is to address the factors that affect the use of Social Media (SM) in Micro, Small and Medium Enterprises (MSMEs), with the aim of proposing a theoretical model that allows a better understanding of the phenomenon in question. A documentary review was carried out in recognized databases such as EBSCO, Scopus and Google Scholar. 50 scientific articles were analyzed, each one contributes a model related to the use of Social Networks in companies. A theoretical model composed of three main variables that affect the use of Social Networks, as interactivity, profitability and compatibility is proposed. Likewise, the main benefits of the use of Social Networks in companies, increased sales, increased customers and improved brand visibility were recognized. It is concluded that the adoption of Social Networks for companies is currently a necessity for permanence in the market.

Resumen

La presente investigación tiene por objetivo proponer un modelo teórico sobre el uso del Social Media (SM) en las Micro, Pequeñas y Medianas Empresas (MIPYMES), a partir de una revisión de literatura, con el propósito de analizar y comprender los factores que inciden en el uso del SM. Se realizó una revisión documental en bases de datos reconocidas como EBSCO, Scopus y Google Scholar. Se analizaron 50 artículos científicos, cada uno aporta un modelo relacionado con el uso del SM en las empresas. Se propone un modelo teórico compuesto de tres variables principales que inciden en SM, interactividad, rentabilidad, y compatibilidad. Asimismo, se reconocieron los principales beneficios del SM en las empresas, como incremento en las ventas, incremento de clientes y mejora de la visibilidad de la marca. En conclusión, la adopción del SM para las empresas es una necesidad en la actualidad para la permanencia en el mercado.

Social Media, MSMEs, Digital Marketing

Social media, MIPYMES, Marketing Digital

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Introduction

Today's technological progress makes it possible for consumers to have incredible power to search for and share information. Just as people through immediate connectivity and mobile communication are closer to each other, so too are they closer to companies (Erragcha & Romdhane, 2014). In this sense, the market in a digital context, companies can easily establish contact with actual and potential consumers (Callejas, Aguirre, & Aparicio, 2015).

We are talking about a consumer who has at his or her fingertips valuable information about products and services that he or she needs or wants to consume. Indeed, nowadays, information is ubiquitous, overcoming the limitations of space and time for each consumer, now they can research and get information from almost anywhere in the world, and for this, all they need is access to the internet through mobile devices (Tiago & Verissimo, 2014).

This technological progress made it possible for the consumer to evolve from 1.0 to 4.0. In this process, the consumer has become more demanding, and critical in making decisions about the products they need to purchase (Kotler, Kartajaya, & Setiawan, 2017). Consumer 4.0 is a highly informed type of consumer, sensitive to high prices and dishonest actions by companies. Today's consumer behaviour increases the competitiveness among companies, and companies have to adapt to their particular needs corresponding to each market segment. This leads to an analysis of the communication between companies and consumers (Leeflang, Verhoef, Dahlström, & Freundt, 2014).

Business-consumer communication was dominated from the beginning by the former. They decided when and why to communicate with consumers (Kotler, Kartajaya, & Setiawan, 2017). Now, this situation has completely changed, as with mobile communication and easy access to information, consumers decide when and why they will make contact and, most importantly, with which company they will be able to satisfy their needs by offering valuable products and services.

Digital Marketing (DM) is now a necessity for MSMEs, and they need to adapt to the new market dynamics, where consumers are interacting with each other, exchanging information about products and services they need to purchase in order to satisfy their needs (Chaffey & Smith, 2008). In fact, more and more users are connected to the internet. In 2005, there were 1.3 billion users connected to the internet, a figure that has increased dramatically by 2019, with 4.1 billion internet users (International Telecommunication Union, 2019). Furthermore, it can be seen that, the use of social networks are the main activities of internet users (Kemp, 2020). Facebook is identified as the main social network with 2,449 million users, followed by YouTube with 2,000 users, WhatsApp with 1,600, Instagram, with 1,000 and finally, Twitter with 340 million users (Kemp, 2020).

The dynamics of the use of social networks represent multiple opportunities for MSMEs that they need to take advantage of, and only those companies that manage to adopt these digital tools to improve their productivity will be the ones that will have benefits in the short and long term, which will be the permanence in the market in a competitive way, and therefore greater economic income. The new form of interaction of today's consumers through SM platforms has changed the paradigm of online sales. In effect, the process of buying products has changed (Zhang & Li, 2019).

MSMEs need to understand what this new sales process is all about in order to engage customers and encourage potential consumers to purchase products and services in order to exchange a valuable good for a sustainable economic return. To do so, MSMEs and marketers need to establish a set of MD and SM strategies to create links between the firm and consumers in the digital environment (Cesaroni & Consoli, 2015).

Based on the arguments raised, the need arises to develop this study to identify the factors that affect the use of SM in MSMEs. The present research aims to propose a theoretical model on the use of SM in MSMEs, based on a review of scientific literature, with the purpose of analysing and understanding the factors that indicate the use of SM.

Methodology

This research was carried out using the documentary review method. For this purpose, scientific articles were selected that aimed to propose models related to the use of SM in MSMEs. According to Bailey (1994), the documentary research method emphasises the analysis of documents that contain information about the object to be studied. According to Mogalakwe, (2006) in the application of the documentary review method, two types of documents are identified, primary and secondary. Primary documents are those that contain data that have been collected and analysed on the phenomenon under study. Secondary documents, on the other hand, are those that contain information on other documents that are the result of data collection and analysis on a particular object of study (Bailey, 1994).

For the management of primary and secondary documents, Scott (1990) identifies four criteria for determining their quality, namely authenticity, credibility, representativeness, and significance. Authenticity emphasises the evidence shown by the document that is required to be analysed according to the reliability of the data to be an original scientific product. Credibility, on the other hand, refers to the particular characteristics of the documents. In other words, how common are the characteristics of the document (such as research techniques, type of analysis, etc.). While representativeness refers to the importance of a given document in comparison to other valuable documents. Finally, significance concerns the clarity of the document, how easy it is to understand the information it contains.

The present study was carried out in two stages. In the first stage, a collection of scientific articles was carried out under the document management approach proposed by Scott (1990). For this purpose, the Ebsco, Scopus and Google Scholar databases were consulted in order to take scientific articles that aimed to propose a model related to the use of SM in MSMEs. Subsequently, in the second stage, 50 scientific articles were analysed according to four characteristics:

1) the model they propose, 2) methodology, 3) object of study and 4) variables of analysis. This analysis of the scientific articles made it possible to construct the model proposed in this study. It should be noted that each model has its own specific methodology, so it would be tedious to describe each of these in detail. For this reason, the following criteria are analysed and highlighted as criteria for the object of study and variables of analysis that they have in common.

Literature review

A brief reflection on the evolution from marketing 1.0 to 4.0

In Spain, the cradle of our language, the concept of marketing was adopted, with the argument that other terms are not broad enough, but it was not until 2007 that the Royal Academy of the Spanish Language (RAE) incorporated this Anglo-Saxon term for its generalised use, although the term marketing remained (Coca-Carasila, 2008).

This term has evolved over time, but it is in the period from 1960 to 1989 where the most important foundations were laid to define what marketing is today, and the American Marketing Association (AMA) in 1960 provided the first formal definition of marketing, which was accepted by the scientific community (Coca-Carasila, 2008).

There are several definitions of marketing that have been presented by the most relevant exponents on the subject (see table 1). Markets have evolved by leaps and bounds, and companies have had to respond to these changes in order to survive and compete in their respective market segments. The globalisation process has broken down barriers in the world's markets and has allowed companies to exchange products and services worldwide, which has led them to focus on differentiating elements in order to remain in the market, since the competition they face is increasing every day. This situation requires every company to respond to the permanent changes in the market and, if possible, to anticipate them. Otherwise, companies run the risk of disappearing from the market.

In recent decades, technological advances have brought substantial changes in both the market and consumers. Marketing has evolved, according to Kotler, through three stages called marketing 1.0, 2.0 and 3.0. Many marketers are still practising marketing 1.0, some are practising marketing 2.0 and some are moving to marketing 3.0 (Kotler, Kartajaya, & Setiawan, 2010).

In the past with the industrial revolution, machinery was the core technology, marketing was only focused on selling production. That was the era of marketing 1.0. focused on large-scale production and sales. Later, with the development of technology, consumer-oriented marketing 2.0 emerged, which gave way to marketing 3.0 focused on customer satisfaction. Companies have turned to having bigger missions, visions and values to contribute to the world (Kotler, Kartajaya, & Setiawan, 2010). In table 2, a brief comparison between marketing 1.0, 2.0, 3.0 and 4.0, respectively, is described.

In the transition shown in table 1, marketing 3.0 is being split and giving way to marketing 4.0, which is a focus on the changing nature of consumer pathways in the digital economy. In essence, this marketing describes a deepening and broadening that focuses on the human being, to define every aspect of the customer journey (Kotler, Kartajaya, & Setiawan, 2017).

The focus of business has shifted from production to a focus on customer satisfaction and customer loyalty management (Best, 2007). The emergence of the internet, and its expanding global coverage, has ushered in profound changes in the area of marketing, especially with e-commerce and the emergence of SM and social media (Erragcha & Romdhane, 2014).

There is a digital technological revolution, where the internet has become the most important marketplace for transactions of goods and services, where entrepreneurs and marketing managers must take these challenges into account and capitalise on them for the benefit of their companies (Leeflang, Verhoef, Dahlström, & Freundt, 2014). This is where DM becomes important in any organisation, with the purpose of generating revenue and achieving economic sustainability.

Digital Marketing and its main tolos

In fact, there is a microeconomic impact of DM, which can be defined as the benefits obtained from commercial dynamics characterised by the use of technological platforms and/or digital media to satisfy the consumer, comprising an accelerated growth of online shopping and an increasingly virtual consumer interaction.

Today's technological progress enables consumers to have incredible power to search for and share information. Just as people through instant connectivity and mobile communication are closer to each other, they are closer to businesses. This makes direct business-to-consumer (B2C) interaction possible. Therefore, consumers can establish contact with several companies offering a product that satisfies the same need. In this sense, the consumer, through the Internet, has at his disposal information about the different products, their respective benefits and comments concerning the experience of other consumers, which can be positive or negative. We are talking about a consumer who has at his or her fingertips valuable information about products and services that he or she needs or wants to consume.

Consumer 4.0 is a highly informed consumer who is sensitive to high prices and dishonest actions by companies. This new consumer increases the competitiveness between companies and makes them adapt to their particular needs corresponding to each market segment. This leads to an analysis of the communication between companies and consumers. Communication between companies and consumers was initially dominated by the former. They decided when and why to communicate with consumers.

Now, this situation is different, in fact, it has completely changed, since, with mobile communication and easy access to information, consumers decide when and why they will establish contact, and, above all, they are careful in choosing the company, that it is able to satisfy their needs. In the digital world, geographic location is no longer a barrier. In digital media, there are hundreds of companies from all over the world, which are able to offer products and services to meet unsatisfied demand in the market.

For competitiveness purposes, companies need to carry out an effective communication process through digital media. This is where DM becomes relevant for MSMEs.

DM is the application of digital technologies that form online channels to market (websites, email, databases, plus mobile/wireless and digital TV and more recent innovations, including blogs, feeds, podcasts and social networking), contributing to the marketing activities of enterprises, given the strategic importance of technology and delivering integrated communications and online services to meet individual customer needs (Chaffey & Smith, 2008).

DM has given way to new concepts such as: communication 2.0, social networks, engagement, prosumers, branded communities, advertainment, blogvertising, SEO and SEM positioning, widgets, podcasting, semantic web, viral marketing, mobile marketing, e-social marketing, among others (Mancera, 2013). Table 2 presents the DM tools and their respective concepts.

The main exponents of marketing recognise the importance of technological tools for its optimisation, they talk about the emergence of a new market, a spatial and digital market (Kotler & Armstrong, 2013). Recently, there has been talk about the emergence of new information technologies and the challenges they bring to marketers. The internet is considered to be the most substantial change in recent times for any organisation (Coca-Carasila, 2008).

It should be noted that the concepts of classic marketing and DM should not be confused, the difference between them lies essentially in the fact that the latter uses digital media and has access to online platforms, which is more economical for companies. While the former has access to conventional media, such as television, radio, billboards, directories, printing presses, among others, and is more expensive. This digital environment allows MSMEs to enter the internet market with low-cost advertising campaigns, which in conventional marketing was not possible, only large companies could do it due to its high costs (Callejas, Aguirre, & Aparicio, 2015).

Social Media: one of the main Digital Marketing tools and its benefits for MSMEs

The emergence of Web 2.0 has come to transform the world and markets, it has created a new phenomenon in business strategies, as it has enabled communication between companies and consumers, which has given rise to content marketing (Syakirah, Musa, Harris, & Harun, 2016). This is also known as online, because it allows real-time exchange of information, images, videos or any other type of content. This social media content marketing plays an extremely important role in conveying effective information to consumers and allows interacting with them in a dynamic way (Syakirah, Musa, Harris, & Harun, 2016).

In traditional marketing, advertising was done by traditional media such as print, radio and television. Now, it has given way to content marketing, where the customer moves from being a spectator to an interactive actor. The internet has induced severe social revolutions through social networks, and these have connected people all over the planet. Communication has shifted from transmitting information face-to-face to the use of devices such as smartphones, tablets or computers.

Conventional marketing, without thinking about its disuse, has given way to MD, i.e. it is moving from the real world to the virtual world. This phenomenon linked to the progress in communication, the development of technology and the economic cost of internet access, opens up a promising scenario in digital marketing (Tiago & Verissimo, 2014). This in turn represents various opportunities for companies.

One of the DM tools most commonly used by large companies is SM. This is conceived as the set of digital platforms that allow content to be shared among users. They are used to communicate, elaborate and manage marketing strategies, for which social media are the main tools (Bolat, Kooli, & Wright, 2016; Omoyza & Agwu, 2016). It is important to clarify that the concepts of SM and social media are closely related, but they are not the same. Social networks are what give rise to Facebook, Twitter, LinkedIn, etc., by connecting millions of people around the world, but not the applications to each other, they are just social media.

SM is more than a network, it is the set of platforms, tools, media and applications that generate interaction, distribution and collaboration between users through different tools such as Facebook, WhatsApp, YouTube, Twitter, Google+, among others.

It is important to highlight that, in general, most people use the concept of SM and social networks interchangeably, since, for them to fulfil their purpose, they must work together (Coca-Carasila, 2008; Uribe, Rialp, & Llonch, 2013). For the purposes of this study, it will be possible to use both concepts interchangeably, since, when talking about SM and social networks, we are talking about two interdependent things.

Social networks have come to revolutionise the world and people's lives, and have caused countless transformations in all areas of society. In fact, in Mexico, it is the first option for internet searches (Asociación Mexicana de Internet, [AMIPCI], 2016). Given the traffic they create on the web, and the number of users they have, they become a vital part of a company's marketing strategy. Some authors agree that social networks are more than necessary in any marketing strategy, because we are in an increasingly digitised market, and where the customer has become an active part, has gone from spectator to interact (Constantinides, 2014; Whiting & Williams, 2013; Israel & Rivera, 2011; Erragcha & Romdhane, 2014). One of the main points of using SM tools is their interactivity between users, or, in other words, between companies and customers (Aránzazu, & García, 2010).

SM has become links for sharing information, images, videos, printouts, consulting files in real time (Ledo, 2011). This has led to abundant benefits for all, and has led to a dizzying growth of online social platforms on the web, substantially changing the lifestyle of individuals and their interactions (Tiago & Verissimo, 2014). This has given way to relationship marketing, better known as customer relationship management (CRM), which is the management of profitable customer relationships. The purpose of CRM is twofold: to attract new customers by offering them added value and to maintain and prosper existing customers by satisfying their needs (Kotler & Armstrong, 2013).

The performance of customer relationship marketing strategies improves the company's popularity, attracts and retains new customers, generates customer awareness, increases sales and above all builds loyalty.

The benefits of using SM for MSMEs lead to competitiveness and permanence in the challenging market. Therefore, businesses need to be present on social media. Digital presence is a necessity rather than an obligation nowadays. For companies that are already operating in the digital market, social networks have become very important, as it is the number one search option on the internet with 79% (AMIPCI, 2016).

The high percentage of internet users who access the internet on a daily basis suggests that this is where many companies' potential customers are to be found. Other reasons why companies need to have a presence in social networks are: customers want to follow their brands, products and services through the networks, and above all that they can obtain valuable information from consumers, improve communication between customers and producers or service providers, allow them to get new customers and do content marketing, are some of the reasons among others. According to AMIPCI, 47% of internet users make purchases online (AMIPCI, 2019).

The emergence of social networks in companies has improved communication with customers, their way of interacting has changed, it is now faster and more direct, which allows them to have greater control over their customer base, and in turn greater customer loyalty (Salazar & Valencia, 2014).

According to Stelzner (2012), who conducted a study to identify the main benefits of SM with a sample of 5,200 entrepreneurs, he identified nine privileges of using SM platforms in e-commerce, which are mentioned below. Increasing exposure accounts for 85%, increasing traffic 69%, providing market intelligence 65%. On the other hand, generating leads as well as developing loyal followers accounts for 58%, improving business search ranking accounts for 55% and growing business partnerships accounts for 51%. Meanwhile, reducing marketing expenses only comes in at 46% and improving company sales at 40%.

Factors affecting the use of social media in MSMEs

Currently, the internet, various devices and technological platforms have benefited many MSMEs to carry out their business operations more easily and effectively, as most of the population makes use of social networks. The most used social network in the world is Facebook, which has 53.6 million users. This is followed by YouTube with 2 billion users, WhatsApp with 1.6 billion users, Instagram with 1 billion users and finally Twitter with 340 million users (Kemp, 2020).

According to statistics for the period 2017-2020, it is identified that some countries, consumers have considerably increased the time spent using social networks (Global Web Index [GWI], 2020). These countries are Argentina, Egypt, Ghana, Indonesia, Kenya, Malaysia, Mexico, the Philippines and South Africa. The Philippines is the country where consumers spend the most time on social media with an average of 4 hours per day. Meanwhile, Kenya and South Africa in the period 2017-2020, have increased their daily use of social media by consumers by approximately 40 minutes (GWI, 2020).

In the case of Mexico, in 2017, consumers used social networks for an average of three hours, and by 2020, this figure increased to three hours and twenty-three minutes (AMIPCI, 2019). According to the annual report prepared by AMIPCI (2019), in 2018, 82% of Mexican users used smartphones to connect to the internet. Regarding the behaviour of Mexican internet users, 46% of users make online purchases, 82% use social networks, and 58% perform online banking transactions. These data show that the use of social networks is one of the main online activities carried out by internet users in Mexico. In 2018, 98% of internet users used Facebook, 91% WhatsApp, 49% Twitter and 57% Instagram (AMIPCI, 2018). These data show that social networks are a tool that consumers use on a daily basis. This means that social networks are a meeting point between companies and real and potential consumers. From this, it is clear that the use of social networks can be beneficial for companies when incorporated into their marketing strategies.

Social networks are defined as a set of established Internet applications that rely on the ideological and technological principles of Web 2.0, and allow the creation and sharing of user-generated content (Kaplan & Haenlein, 2010). Safko & Brake, (2009) define them as an extension of traditional media employing a sophisticated set of tools, techniques and technologies, connecting and creating relationships and interactions. For Tuten & Solomon, (2016), social networks are used to create, communicate, deliver and exchange content that can bring value to the company.

There are several authors who have studied the implementation and impact of SM in the activities of companies, contributing to the progress of empirical knowledge. The main criteria considered in this literature review were the object of analysis and the variables of each model. This made it possible to identify three main factors that influence the use of SM in MSMEs. These are interactivity (Yadav & Rahman, 2017; Ainin, Parveen, Moghavvemi, & Jaafar, 2015; de Vries, Gensler, & Leeflang; 2012), cost-effectiveness (Hanna, Rohm, & Crittenden, 2011; Wamba, Akter, & Bhattacharya, 2016) and compatibility (Dahnil, Mizal, Langgat, & Fzlinda, 2014; Teo & Pian, 2003).

The model proposed by Odoom, Anning, & Acheampong (2017) is the base model of analysis, since, their contribution, to some extent fits with the objective of the present study, which is, to propose a model on the factors that affect the use of SM in MSMEs. In fact, this model analyses the three factors mentioned above, interactivity, cost-effectiveness and compatibility. In the analysis of the models, the first factor is interactivity.

Interactivity is a key factor in the use and management of SM for MSMEs, as it makes two-way communication possible, leaving aside one-way communication. With two-way communication, feedback between the consumer and the company is conceived. Whereas, with one-way communication, companies only transmit the message and no feedback is allowed. In this sense, social networks are interactive platforms, therefore, consumers now communicate with each other and with companies, through their participation in sharing multimedia information and opinions.

Yadav & Rahman (2017) proposed a model on SM usage and performance. The author statistically demonstrated that interactivity is a key enabler for firms' competitiveness and progress, through useful content, with relevant information shared for consumers on social networks.

Similarly, Ainin, Parveen, Moghavvemi, & Jaafar (2015) conducted a study on SM adoption factors, and interactivity is a decisive element in their proposed model. They identified that two-way interactivity with consumers is a key factor for organisations such as MSMEs to establish and execute SM strategies. In this regard, the authors determined that MSMEs have both financial and non-financial benefits as a result. Among the financial benefits are increased sales, increased customer numbers and reduced advertising costs. On the other hand, non-financial benefits include obtaining information about customers, such as their tastes and preferences, establishing close relationships with consumers, as well as obtaining information about competitors.

de Vries, Gensler, & Leeftang (2012) argued that the quality of interaction is relevant for establishing ties with customers. In this sense, companies are not only required to convey messages about their brand. Companies are required to convey messages that are conducive to consumer interactivity, such as soliciting consumer feedback, and conducting dynamics. In their model, de Vries, Gensler, & Leeftang (2012) identified that, in order to improve brand positioning and popularity on social media, companies need to improve interactivity through the quality of the information they convey in their posts and encourage consumer participation and feedback.

In communication feedback, Kietzmann, Silvestre, McCarthy, & Pitt, (2012) in their theoretical model, stated that the elements of frequency and direction are important to evaluate interactivity between companies and consumers. On the one hand, frequency identifies the amount of information that consumers share about the brand with the company on a specific topic that corresponds to the direction. In fact, with direction, the company needs to share content for consumers for a specific purpose, which will be informed by feedback from users.

For this, it is necessary for companies to plan their publications, and identify what kind of content is required to share on social networks to obtain information from consumers that they will provide with their participation. In this vein, Liu & Shrum (2002) in their theoretical model on interactivity, discussed synchronicity.

Liu & Shrum (2002) mention that synchronicity emphasises constant feedback between two parties, in this case between the company and the consumers. To this end, the authors mention the need for active control in communication in order for companies to have high synchronicity. In other words, a constant exchange of information on both sides. Active control concerns the control in the process of information exchange by companies to communicate with consumers. In this process control, many companies require the use of consumer data to carry out advertising campaigns or to establish personalised contact with consumers.

Goldfarb & Tucker (2011) determined the effectiveness of internet and social media advertising campaigns in making the right use of consumer data. This is interpreted as meaning that companies need to carefully design how they intend to interact and establish closer contact with consumers, i.e., what kind of information is required from consumers. In many cases, consumers are not confident about giving their personal data to companies.

In fact, many consumers still lack confidence in the use of social networks with regard to purchasing products and services online. In this context, Hajli (2014) studied the impact of the use of SM and interactivity to build trust in consumers' decision-making in the purchase of products and services. Hajli (2014) determines that the use of SM and interactivity with consumers has a positive effect on trust building, and that it positively influences decision making for the purchase of products and services.

In relation to trust building in the company-consumer relationship, Tsimonis & Dimitriadis (2014) propose a model that analyses the external and internal factors that motivate companies to make use of SM.

One of the main factors is digital growth and popularity with interactivity through strategic activities. These activities are based on providing value to consumers through advice, useful information, solving customer problems, delivering prizes, coupons, discounts, and promotions. This author also adds that daily communication is an extremely important factor, which has already been mentioned earlier in this paper.

Undoubtedly, interactivity is a determining factor for MSMEs in today's digital world. A company that does not have a social media presence, plans and executes SM strategies is a company that is practically invisible to consumers. It is very easy for MSMEs to carry out SM strategies, mainly because the cost of using social media platforms is very low.

Hanna, Rohm, & Crittenden (2011), conduct a theoretical analysis and propose a model of the social media ecosystem, in which they assess the cost-effectiveness of SM strategies, as implementing such initiatives is very cost-effective. Hanna, Rohm, & Crittenden (2011) argue that SMEs can plan and carry out their SM strategies with few resources and consider more important creative initiatives that allow them to get closer and interact more with consumers.

In this regard, Wamba, Akter, & Bhattacharya (2016) mention that the analysis of consumer information in SM is of utmost importance: demographics, product, psychographics, behaviour, referrals, location, purchase intentions. This data allows the company to understand the consumer in order to establish effective SM strategies. This information is provided by SM platforms at almost no cost, which makes this data available almost for free, the challenge is for the firm's marketer to make the most of it through a set of relevant analytics for strategy formulation.

Bandyopadhyay (2016) proposes several low-cost SM strategies that maximise the profitability of firms. These strategies are product and service promotion, enhancing company reputation, building relationships with consumers, customer service, and listening to user feedback.

These initiatives can be carried out by any company that has the personnel with sufficient knowledge about low-cost marketing strategies.

Miller & Lammas (2010) provide a theoretical discussion of cost-effective and low-cost strategies and mention the importance of being able to encourage consumers to promote products and services with their community. In this context, the authors argue that word-of-mouth marketing is a cost-effective strategy and that it makes it possible for a given piece of information to go viral, benefiting the company by building a solid presence in social networks, which benefits profitability.

Todor (2016) in his theoretical-practical analysis also acknowledges that SM strategies are low-cost and cost-effective, and highlights the measurement of key performance indicators, such as return on investment (ROI), for the purpose of understanding the impact and monetary benefit of marketing initiatives. However, the author mentions some disadvantages, the most important of which is directly related to profitability, the risk of not increasing sales by not using digital strategies and platforms well. In this sense, companies require staff with knowledge and understanding of consumer behaviour.

Kumar & Mirchandani (2012) identify a theoretical-practical seven-step model to improve the ROI of companies regarding the implemented SM advertising strategies. These steps are: 1) monitoring consumer conversations, 2) identifying consumer influencers, 3) identifying factors shared by consumer influencers, 4) identifying opinion leaders (influencers) interested in the company's advertising campaign, 5) incentivising influencers to spread word-of-mouth information about the product and service, 7) obtaining rewards on SM advertising campaigns. These steps show that strategically and at a low cost, companies can improve their revenue, and above all profitability. It can be seen that market knowledge is of utmost importance to obtain the benefits of profitability.

Hoffman & Fodor (2010) carry out a theoretical analysis to understand some factors related to consumer dynamics, which improve the ROI of SM advertising campaigns. These authors mention the four "Cs" of SM, which are connections, creation, consumption and control. In social media, connections are established through the creation of content that is consumed by one or more groups of consumers, to generate a synchrony that the company clearly has control over. Marketers need to understand the dynamics of the points mentioned above, and above all to know their community well in order to implement cost-effective strategies and have a favourable return on investment.

Dinh, Zhang, Nguyen, & Thai (2013) using statistical algorithm models, conclude that for an advertising campaign to be successful, they identify that knowledge of the market and the respective segments targeted by the company's products is crucial. The study also identifies that the time factor in the development of social media strategies is important, but no more so than market knowledge, for an advertising campaign to be effective.

Jones, Borgman, & Ulusoy (2015) conducted five case studies in which they determined the benefits of SM and the perceived importance of its use. In the theoretical-practical model, the authors identify company profitability, increased sales, positioning, and improved customer relations. In the perception of the importance of the use of SM, the researchers found that marketers have some limitations in the use of SM and its respective strategies. These limitations are time and knowledge about the correct use of SM tools.

Rugova & Prenaj (2016) conduct an analysis and propose a theoretical model on factors of SM use in companies. These authors identify the organisational and management factor, where financial resources and above all knowledge are recognised. On the one hand, with financial resources, they argue about the favourable costs of managing SM strategies. On the other hand, knowledge as a resource is part of the human capacities, and according to the performance and organisation of these, the management of SM strategies will be.

Knowledge and organisation for the management of SM are extremely important elements, and lead to an analysis of the adoption of these digital tools by companies. Several researchers have developed several models that explain relevant variables in the adoption of SM in companies. In these models, adoption is used as compatibility.

Dahnil, Mizal, Langgat, & Fzlinda (2014) with their theoretical discussion, build a model of five factors that affect the firm's compatibility for the use of SM tools. These factors are, consumer behaviours, organisation, technology, management, and, business environment. Dahnil, Mizal, Langgat, & Fzlinda (2014) highlight organisation and management. In organisation, the authors argue the availability of both financial resources and human resource skills. On the other hand, in management, they consider the decisions of the managers, highlighting their skills, attitudes and vision in order to boost the company's compatibility with the use of SM.

Teo & Pian (2003) propose a model composed of contingency factors, levels of internet adoption and competitive advantage. In the contingency factors, the authors consider the variables of top management support, technology strategy and compatibility. For SM compatibility, the model emphasises the company's existing technology and cultural values. This will determine the level of adoption of digital tools such as SM.

Beier & Wagner (2016) mention that SM compatibility can take place in two ways. First, bottom-up (bottom-up), when employees of the company start the initiative to employ digital platforms. This first approach considers strategies that do not require a considerable budget for the company. Second, it is top-down (top-down), which arises when the company's managers give significant consideration to the use of SM and strategies, which to some extent may have a considerable cost. Wamba & Carter (2014), in their model, discuss the characteristics of the firm as a point to be considered in the compatibility for the use of SM. These authors argue about the firm's capacity derived from its organisational structure and its flexibility for planning and decision making. Clearly, the aptitude and attitude of managers and employees is crucial for compatibility.

Sarosa (2012) conducted a study in a firm, in which they analyse the internal environment of the company and the actors, i.e., the employees. Four stages were determined to analyse the compatibility of the company, according to the role of each internal stakeholder: problematisation, interests, inclusion, and mobilisation. In problematisation, the internal actors determine what the problem is regarding the compatibility of SM employment in the company. Subsequently, in interests, the actors organise themselves according to their profile for the solution of the problem. In inclusion, the other internal actors of the company are motivated to participate in the solution of the problem. Finally, in mobilisation, solutions are established, and an action plan is put in place to solve the problem. This model clearly shows the organisation of the members of the company for the adoption of the SM tools.

In their study, Cesaroni & Consoli (2015) found that several entrepreneurs make use of SM by trend. In other words, the technological trend as a factor external to the company influences the compatibility of SM. The researchers also found in their study that several entrepreneurs identify the potential of using SM and its benefits. However, due to lack of knowledge, they do not use these digital tools effectively.

AlSharji, Ahmad, & Abu-Bakar (2018) in their research and statistical modelling, prove that the organisational level, top management plays a role of capital terms to create the enabling environment, as an internal ecosystem to drive SM compatibility and adoption. In the demographics of the study, the authors found that young, educated managers consider SM to be of vital importance to the progress of firms.

Monim (2017) conducted statistical research to study the adoption of digital tools in firms. Monim (2017) considers compatibility as a point of relevance closely related to the skills and knowledge of the firm's human resource, since the use of new tools, such as SM, depends on the ability of the members to adopt the change correctly.

Oberoi, Patel, & Haon (2017) determine some interesting compatibility data. The researchers argue that when firms adopt external technologies, such as SM, they increase the efficiency of the firm.

However, the company may be affected if it develops a dependence on only one type of SM tools. This affects the firm's adaptability to adopt new technologies and novel alternatives that can improve the firm's efficiency.

Chong & Chan (2012), in their model, study how the technological factor influences the evaluation, adoption and routinisation for the diffusion of Radio Frequency Identification within companies. They classify technological factors into relative advantage, compatibility, complexity, cost and security. In this model, compatibility is mentioned as an important point for the adoption and use of SM.

The factors of interactivity, cost-effectiveness and compatibility of SM lead to the study and analysis of the use of these important digital tools by companies. In specific terms, which marketing activities are used by companies with respect to SM tools.

SM can be used in three ways namely as a communication medium, viral marketing platform, to conduct market research (Whiting & Deshpande, 2016). The use as a communication medium, is carried out with the publication of information about products and services, such as photographs and videos. In this sense, McCann & Barlow (2015), highlights the improvement of the company's communication with consumers, for the purpose of creating strong relationships with them, attracting new customers, and providing them with specific information about products and services such as promotions and even benefits and specifications.

In using SM as a viral marketing platform, consumers need to share the message, discuss and exchange information about products and services (Whiting & Deshpande, 2016). Finally, to conduct market research, firms need to be in constant communication with consumers, engaging them with interactive dynamics about their preferences and opinions of products and services (Real, 2014). When companies properly employ the use of SM, a strong brand identity and image of the firm is built (Whiting & Deshpande, 2016).

In order to make good use of SM, it is necessary to consider the quality of the content through a constant exchange of information in the form of images and videos that have a positive impact on consumers. In this context, the way in which the content is produced is related to the impact it will have on consumers. For this, it is necessary to plan and elaborate content strategically in such a way that consumers can feed back the communication (Ananda, Hernández, & Lamberti, 2016).

Ananda, Hernández, & Lamberti (2016) suggest that SM strategies should be carried out actively, i.e., dynamically, and for this purpose, the following activities are important: public relations, working with opinion leaders of a specific segment (influencers), personalisation of interaction and product, including consumers in the innovation and improvement of products and services.

Sixto (2015) suggests that in order for companies to use SM tools correctly, a social media plan needs to be developed and incorporated as part of the company's system, so that it operates as an important element of the internal organisation. It is in this way that the progress and benefits of SM can be achieved.

The main benefits of SM for firms are threefold: increased sales (Wang, 2017; Chuang, 2020), increased number of customers (Gruner, Vomberg, Homburg, & Lukas, 2019), and improved brand visibility (Chen & Lin, 2019; Cheung, Pires, & Rosenberger, 2020). Several authors have studied these benefits of SM in companies, through models and theoretical discussions.

In increasing sales, during the process of this activity in social networks, the company's marketing manager must be close to consumers, identify potential customers to convert them into prospects, and follow up to close product sales (Andzulis, Panagopoulos, & Rapp, 2012). In this context, Gustafson, Pomirleanu, Mariadoss, & Johnson (2019) identify that, in the buying process, consumers in the first instance must have engagement with the company, i.e., be part of a community in which there is constant feedback of information, where ideas, opinions, experiences are shared.

Consumer engagement is built through the agility of SM management. According to Chuang (2020), this agility is carried out through the responsiveness of communication and the ability to solve consumer problems and concerns. The more the company is able to solve customer needs, the stronger the company-consumer ties will be.

Zadeh, Zolfagharian, & Hofacker (2019) add a factor that is also important in building relationships with consumers, which is providing value through the information that the company provides. Therefore, companies should consider exceeding consumer expectations at all times, not only at the time of purchase but also in the interaction with actual and potential customers.

Zhang & Li (2019) argue that consumers perceive risks at the time of making a purchase of a product or service. This risk is subjective, i.e. it is not accurate in a certain way. However, for the most part, consumers rationally analyse the information available to them about products and services so that they can identify risks and benefits in their intended purchase. This means that consumers must be informed with the best possible information so that they do not identify any risks.

One of the activities that can be improved so that consumers do not perceive risk in purchasing products through digital media such as SM is CRM. Cheng & Shiu (2019) argue that through this activity, companies can provide personalised and detailed information to actual and potential consumers, which increases the likelihood of purchase and above all improve to increase sales.

In the buying process, SM contributes a lot to increase sales. According to Chen, Lu, Wang, & Pan (2019), most of the decisions consumers make online are largely influenced by their social group. In this vein, product recommendations and opinions on social media have a positive or negative impact. This is because consumers in the social group in which they find themselves, share many characteristics in common, and to some extent relevance and trust. This not only contributes to purchase behaviour, but also to product usage behaviour (Wang, 2017).

The challenge for MSMEs as they increase their sales is to increase the number of customers as well. Iblasi, Bader, & Al-Qreini (2016) discuss that, in the consumer purchase decision process, firms that follow up before and after purchase, customers repeat a purchase, which increases brand loyalty.

A relevant strategy prior to the purchase of products and services are dynamics and incentives through rewards towards consumers (Jung, Yang, & Kim, 2020). Meire, Hewett, Ballings, Kumar, & Van den Poel (2019) study digital events that promote emotional dynamics and the relationship they have with consumer engagement. The results show a positive relationship between the aforementioned points. These dynamics increase future customers' engagement with the brand, playfully incentivising them to purchase products and services from the company in the immediate future.

Chang & Dong, (2014), obtained interesting findings on the dynamics between the company and consumers. The results of the study show that the more companies involve consumers in a dynamic interaction, the more they will invest in the purchase of a product. This result is obtained because consumers during dynamic interactions have more information at their fingertips to make a decision to purchase a product from the company.

Gruner, Vomberg, Homburg, & Lukas (2019) recognise the relationship of consumers through SM and new product launches. The researchers show that simple products in conjunction with an adequate relationship increase customers and profits for the firm, compared to complex products.

Foltean, Trif, & Tuleu (2019) mentions that SM tool can be employed as a CRM tool, as in constant interaction with consumers, firms can obtain information about customers to deliver detailed information to them and follow up. Researchers Foltean, Trif, & Tuleu (2019) concur with Cheng & Shiu (2019) on the benefits of using CRM, which fosters trust with customers, promote loyalty, which benefits with increased sales. In fact, these marketing initiatives increase consumer expectations.

Customers' expectations of the product is also a point that needs to be considered. Sedera, Lokuge, Atapattu, & Gretzel (2017) study the process of product consumption satisfaction, where consumers are influenced by their expectations, social influence, information confirmation, and satisfaction. Social influence represents all the consumer experience information that a consumer obtains from his or her community. This information is recommendations or comments about the consumption experience of a product. So, the confirmation information is, in effect, the consumer's own experience compared to the experience information that another consumer has obtained. Satisfaction, on the other hand, is the customer's personal experience of consuming the brand's product or service.

In this sense, Sedera, Lokuge, Atapattu, & Gretzel (2017) identify a point of tolerance between the consumer's own experience and the experience of other members of their digital community, which is presented as balance. In case the consumer has a favourable satisfaction due to their positive consumer experience of the product, they will be more likely to be loyal to the brand.

Wu, (2017), conducts a study where he finds that there is partially a direct relationship between consumer recommendations and brand trust. Wu (2017) shows in his findings that the brand is not just a brand so to speak, but rather a reflection of the quality and commitment of the brand, i.e. the reputation and status that the company represents for consumers, as it has satisfied their needs and expectations. Product quality and consumer satisfaction result in brand recognition of the company. Improved brand visibility is another benefit of SM for companies, which also requires specific strategies.

Ahmada, Musab, & Harun (2016) recognise that brand visibility is an aspect that companies need to constantly work on in order to establish a strong market presence. In the case of DM, a brand presence through SM management is a requirement for the market permanence of firms. To improve brand visibility, Ahmada, Musab, & Harun (2016), discuss and value the quality of information that companies require to provide to the market about their products and services through social media.

This leads to more and better interaction between consumers and the company. The more time consumers spend interacting and the more frequently they share information with their community, the greater the visibility of the brand.

Godey, Manthiou, Pederzoli, et al. (2016), studied consumer behaviour, and statistically demonstrated that the quantity and quality of information that encourages consumer interaction, makes it possible for the brand to be better valued and above all more visible in the market, which impacts consumer preference and loyalty.

In relation to the quality of information, Liu & Lopez (2016) with their study, show that the characteristics of the products that companies share through content on social networks, impact the visibility of the brand. This is a result of the word-of-mouth information that consumers share in their virtual community. At this point of analysis, the information that consumers share with their social circle can either benefit or harm the brand's value and visibility.

Balakrishnan, Dahnil, & Yi (2014) argue that the exchange of word-of-mouth information among consumers on social networks has a greater impact than advertising. Existing positive information about a brand and its respective products and services incentivise consumers in the buying process and even generate consumer loyalty.

Chen & Lin (2019) identify that, through interactivity, information shared by the company on social networks, and word-of-mouth information, contribute to improving consumers' perceived value of the brand. In this sense, consumers perceive a high value on the brand's product or service, in relation to the benefits they can obtain from it, even if the monetary cost is high or even low. In other words, consumers will choose the product because of the benefits and not primarily because of its cost.

Ceyhan (2019) in his theoretical argument, points out three types of values related to the firm's brand. These values are hedonic, functional and social. Functional value is perhaps the best known. This value is related to the benefits provided by the product or service to consumers, which is provided through useful, practical information in social networks. Whereas, hedonic value refers to the value perceived by consumers for the information shared by the company on social networks, which is dynamic and interactive. Finally, social value is that type of value perceived by consumers that concerns the level of interaction that the company has with the virtual community, as an environment of constant information exchange.

Alam & Khan (2019), in their study regarding the hedonic value of the brand, using a statistical model, makes a relevant contribution. The researcher shows that the hedonic information offered by companies on social networks has a significant impact, as long as internet users interact more frequently. In more specific terms, companies obtain more benefits from the information generated by consumers regarding the product and service, such as comments and recommendations, compared to the information that the firm itself shares. This means that companies need to encourage more consumer engagement on social media through a range of creative strategies, not only in terms of the quality of the information, but also in terms of driving interactivity.

Hudson, Huang, Roth, & Madden (2016) with their study showed that one of the most important strategies to improve brand visibility is anthropomorphisation. The authors state that before managing SM strategies, the brand anthropomorphisation initiative should be carried out. The study also states that this strategy generates more trust for consumers, as it is a creative and, above all, dynamic way of interacting in social networks. The anthropomorphisation of the brand is closely related to the quality of the information that firms share on social networks to interact with consumers. In addition to this, the anthropomorphisation strategy enhances brand awareness among consumers.

Ismail (2017) with his research states that, proper management of SM strategies improves brand visibility through awareness. That is, brand awareness, which emphasises the value represented by the company and its products or services to the extent that it relates to the identity of consumers. Companies with high brand awareness are more recognised and preferred by consumers.

Discussion and contributions

Technological progress has changed the way marketing strategies are carried out, as a result of the changing habits of consumers who have adopted mobile devices with internet connection to do their daily tasks, but above all the way they consume products and services. Every year, the number of people connected to the internet increases. The main habits of consumers are the use of social networks. The main social networks are Facebook, YouTube, WhatsApp, Instagram and Twitter. Each of these platforms has millions of users, and the number of users is increasing every year.

In Mexico, the majority of internet users, specifically 82%, use smartphones for online activities. The main activity that consumers carry out is the use of social networks. The main social networks to which Internet users are registered are Facebook with 98%, WhatsApp with 91%, Twitter with 49%, and Instagram represents only 57% (AMIPCI, 2019). For MSMEs in Mexico, it is an opportunity to adopt DM tools such as SM and thus adapt to the digital dynamics.

For many companies, the use of SM is a challenge; in the case of Mexico, in the southeast, the outlook for the use of SM tools is not favourable. In order for companies to remain strong and competitive in the market, they need to adapt through the use of SM. Today's consumer is an informed consumer, sensitive to high prices and dishonest actions by companies. Therefore, companies need to be in contact with consumers through SM tools. However, many companies still do not recognise the importance of SM as such. In the literature review, three main factors are identified as influencing the use of SM in MSMEs, according to the contributions made by a group of scientists in the field of KM study.

Social networks have set the tone for improving communication between businesses and consumers. We are talking about a two-way communication, where the exchange of information between companies and consumers is constant (Liu & Shrum, 2002). According to the literature review, two-way communication makes interactivity possible, which is the first factor influencing the use of SM in firms. For this, firms need to provide content that meets certain characteristics (Yadav & Rahman, 2017). This content needs to be useful, contain quality information, encourage consumer engagement, be frequent and targeted, so that synchronicity is conceived (de Vries, Gensler, & Leeftang, 2012).

Furthermore, companies need to make the right use of consumer data in case it is requested. Businesses strategically need to provide value and solve consumer problems and incentivise consumers to build strong relationships with them (Hajli, 2014). It is necessary for companies to implement these SM initiatives as soon as possible and continue to compete in the market.

Companies can implement various SM strategies at a reduced cost and connect with a large audience. Cost-effectiveness is the second factor influencing the use of SM in firms. According to the literature review, social media platforms make it possible for firms to implement various strategic activities at a low cost (Hanna, Rohm, & Crittenden, 2011). These activities are sharing information in a creative way that incites consumer participation, and getting to know their opinions, in order to know the market segment, understand their behaviour and subsequently establish actions to promote products and services (Wamba & Carter, 2014). To understand and measure the reduced cost of SM initiatives, it is relevant that companies also make use of performance indicators such as ROI (Todor, 2016). The profitability of SM initiatives seems to be a promising issue for companies. However, for such benefits to be realised in companies, the use of digital tools is required to be carried out by digitally savvy staff. In this context, knowledge is an extremely important resource in companies, which they need to manage through organisation (Dinh, Zhang, Nguyen, & Thai, 2013).

This organisation leads to the analysis of the compatibility for the adoption and use of SM as a tool by companies.

In fact, contributions in the field of SM research indicate that the organisation, cultural values, knowledge, skills, and existing technology in the company constitute compatibility (Teo & Pian, 2003). In precise terms, compatibility is the context that arises within the organisation for the use of SM as marketing strategies. This favourable environment within companies makes it possible to adopt and use SM correctly and, above all, to execute it properly. When companies use SM strategies correctly, they will have several results (Beier & Wagner, 2016).

The literature review points out that there are three main benefits that companies can obtain from the use of SM: increased sales, increased number of customers and improved brand visibility.

Nowadays, more and more consumers are using the internet, especially social networks. In order to communicate with the market, companies do not only need to be present where the majority of consumers are concentrated according to the segment they belong to. Rather, firms need to establish solid relationships and above all increase consumer engagement. This is built through quality interactivity and responsiveness with consumers. Also, through CRM, firms are able to reduce consumer distrust by personalising the information consumers require.

The decisions that consumers make when making a product purchase are largely influenced by the recommendations made by other consumers in a virtual community established on social networks. This represents a challenge for firms in terms of customer growth, as this is achieved through strategic SM initiatives. The SM research community argues that the main activities for firms to retain customers are pre-purchase and post-purchase follow-up, customer dynamics and incentives. These strategic activities foster customer loyalty and, more importantly, brand status and engagement with customers. This impacts on the visibility of the company's brand.

Ubiquitous information makes it possible for several companies to participate in the market, and for consumers to have information quickly, overcoming the barrier of time and geographic location. In this sense, there is too much competition in the market, and consumers clearly prefer the products and services of companies with high brand visibility. Several initiatives have been studied in the field of SM. In the literature review, the following initiatives are identified as the main SM activities to increase brand visibility, namely providing the quantity and quality of information on product features and, above all, encouraging consumers to share their experience with their close social circle. It should be noted that the information that firms are required to share should be hedonic and interactive in order to generate more trust in consumers. The strategy of anthropomorphisation of the brand is also pointed out. In addition, it is recognised that consumer participation through prizes with the purpose of the brand obtaining information about the products and services it offers, increases commitment, loyalty and brand visibility in a competitive market.

Conclusion

The objective of this study is to build a theoretical model on the factors that affect the SM for MSMEs, which aims to contribute to the understanding of the difficulties and opportunities that companies have today, for the use of MD tools. Based on the literature analysed, a theoretical model is proposed in which the factors that affect the use of SM in MSMEs and their respective benefits are identified. In the model, the main factors influencing the use of SM are: interactivity, cost-effectiveness and compatibility. While, the main benefits are: increase in sales, increase in number of customers and brand visibility. According to the analysis of the literature review, it can be seen that each of the mentioned factors are closely related. Therefore, it is required that companies work correctly at the same time on the above discussed actions on interactivity, profitability and compatibility (see figure 1). This is in order to obtain the benefits already analysed, the increase in sales, increase in the number of customers, and the improvement of brand visibility.

The models analysed in the literature review for the construction of the model that this paper provides, present qualitative and quantitative characteristics. For this reason, the present study provides a novel, multidisciplinary analysis. The model proposed in this manuscript opens a guideline for future research on MSMEs and the MS, both qualitative, quantitative and mixed-slices studies.

The model proposed in this research shows that MSMEs need to work intensively on the three main factors, interactivity, profitability and compatibility, which are closely interrelated internal elements of the company, in order to obtain the great benefits of SM. To the extent that managers recognise the importance of SM and improve the resources they have to boost the company's interactivity, profitability and compatibility, the benefits they will obtain, which have already been mentioned and analysed, will be an increase in sales, customers and greater brand visibility.

The use of SM in today's times is a necessity, not a luxury that only a few companies can have, as it used to be in the past. Consumer behaviour adapts to the progress of technology almost immediately, through the constant use of mobile devices and an increased investment of time in internet connectivity. In addition, the main activity of consumers connected to the internet is the use of social networks. The main challenge for MSMEs is to identify SM opportunities and mobilise the resources they have at their disposal to work towards adapting to digital dynamics.

MSME managers and decision-makers who are able to assess the use of SM and identify that it presents an opportunity to remain in the market, and who are also able to establish and implement actions for the adoption and use of these digital tools in the internal organisation, will be those companies that will obtain the benefits discussed above, and will remain competitive in the increasingly challenging market.

Annexes

Phases	Marketing 1.0	Marketing 2.0	Marketing 3.0	Marketing 4.0
Characteristics	Product-focused marketing	Customer focused marketing	Value-driven marketing	Marketing focused on the changing nature of consumer paths in the digital economy.
Objective	Selling products	Satisfying and retaining consumers	Making the world a better place	Reaching more customers
Enabling Forces	Industrial revolution	Information technology	New Wave Technology	Digital economy
How companies view the market	Mass buyers with physical needs	Smart consumer with mind and heart	A complete human being with mind, heart and spirit.	Consumers connected to digital platforms
Key marketing concept	Product development	Differentiation	Values	Digital
Company marketing managers	Product specification	Business and product positioning	Business, vision, values	Mix of traditional and digital marketing
Value propositions	Functional	Functional and emotional	Functional, emotional and spiritual	Functional and personalization
Consumer interactions	One-to-many transactions	One-to-one relationships	Many-to-many collaboration	One-to-many interaction

Note: Each marketing phase has different orientations, 1.0 focuses on product, 2.0 on differentiation while 3.0 focuses mainly on values

Table 1 Marketing 1.0, 2.0, 3.0 and 4.0 comparisons
 Source: Prepared based on information from (Kotler et al., 2010, p. 6; Kotler, Kartajaya, & Setiawan, 2017, p. 55)

Classification	Concept
Web Site	<p>Set of electronic files and related web pages including multimedia content, usually including a home page called Home Page (Erragcha & Romdhane, 2014).</p> <p>A website is an information and/or communication structure generated on the Internet, created by the application of information technologies (technologies of creation, maintenance and development of websites), which has two fundamental elements (actions of the subjects and contents) and where a set of services that the users who visit this website can exercise to satisfy one or more needs, they have (Alonso, p. 231 2008).</p>
Social media	<p>Set of digital platforms that allow content sharing among users, are used to communicate and to develop marketing strategies, social networks are the main tools (Bolat, Kooli, & Wright, 2016; Omoyza & Agwu, 2016).</p> <p>A group of Internet-based applications that are based on the ideological and technological foundations of Web 2.0, and enable the creation and sharing of user-generated content (Kaplan & Haenlein, p.61 2010).</p>
SEO Positioning	<p><i>Search Engine Optimization (SEO)</i>, is the search engine optimization or search engine positioning, and its purpose is the visibility of a website, in a specific area, at no cost, that is why it is called organic positioning (Fernandez, 2015).</p>

<p>SEM Positioning</p>	<p><i>Search Engine Optimization (SEO)</i> allows a website to appear in the top result lists of a search engine for some specific keywords (Yalçin & Köse, 2010, p.488).</p> <p><i>Search Engine Marketing (SEM)</i> consists of the manipulation of search engines in order to direct the user to the requested website (Fiorini & Lipsky, 2012).</p> <p><i>Search Engine Marketing (SEM)</i> allows a website to appear in the top result lists to promote sales by increasing the exposure of specific keywords (Yang, Shi, & Wang, 2015, p.1107).</p>
<p>E-Commerce</p>	<p>Commerce conducted through digital electronic media (Kaplan & Haenlein, 2012).</p> <p>Electronic commerce includes any form of economic activity conducted through electronic connections (Wigand, 1997, p. 2).</p>
<p>Mailing</p>	<p>E-mail marketing can be defined as a targeted sending of commercial and non-commercial messages to a detailed list of recipients, respectively, e-mail addresses (Hudák, Kianicková, & Madlenák, 2017, p. 342).</p> <p>The mailing has the main characteristic of being personalized, consisting of the company's brand, a message and a link that guides the customer to the company's website (Schwarzl & Grabowska, 2015, p.193).</p>

Note: Website, social media, SEO and SEM positioning, e-commerce and Mailing are some of the DM tools

Table 2 Digital Marketing Tools

Source: Researcher's elaboration

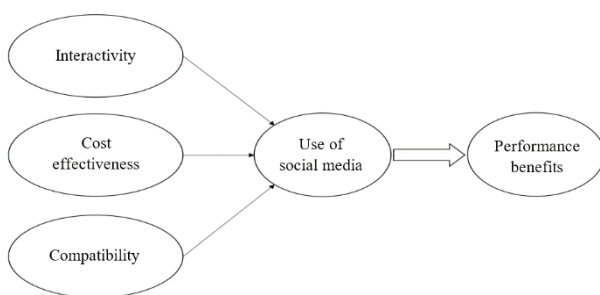


Figure 1 Theoretical model on the factors that affect the use of social media in SMEs

Source: Own elaboration based on literature review

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Quality management system in the supply chain of the metal mechanical manufacturing industry

Sistema de gestión de la calidad en la cadena de suministro de la industria de fabricación metalmeccánica

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Abstract

Successful supply chains manage product flows, information and funds to provide a high level of product availability to the customer. The fundamental challenge today is for supply chains to achieve coordination despite multiple ownership and increasing product variety. The objective then is to coordinate business processes from manufacturers, suppliers, transportation, warehouses, distributors, and partners to the customer in such a way that lower costs, shorter production times and product and service quality adapted to customer requirements are achieved. In the present work, a system is created that evaluates the behavior of the supply chain based on quality. To carry it out, focus groups and exploratory factor analysis with varimax rotation are used to compile the main components of quality management in the SCQM supply chain and the set of dependent variables associated with the determining factors. The results show the most valuable key factors and this is an instrument that allows their evaluation. In the development of the research, the review of impact literature is carried out, methods, techniques and tools such as interviews, document review, work with experts, brainstorming, descriptive analysis and exploratory factor analysis, diagrams or control graphs are used.

Quality, Supply chain, Determining factors

Resumen

Las cadenas de suministro exitosas administran flujos de productos, información y los fondos para brindar un alto nivel de disponibilidad de productos al cliente. El desafío fundamental hoy en día es que las cadenas de suministro logren la coordinación a pesar de la propiedad múltiple y la creciente variedad de productos. El objetivo es coordinar los procesos comerciales desde fabricantes, proveedores, transporte, almacenes, distribuidores y socios hasta el cliente para lograr disminuir costos y tiempos de producción, lograr calidad de producto y servicio adaptada a los requerimientos del cliente. En el presente trabajo se crea un sistema que evalúa el comportamiento de la cadena con base en la calidad. Para realizarlo, se utilizan grupos focales y análisis factorial exploratorio con rotación Varimax para recopilar los factores determinantes de la Gestión de calidad en la cadena de suministro y el conjunto de variables dependientes asociadas a dichos factores. Los resultados muestran los factores clave más valiosos y un instrumento que permite su evaluación. En el desarrollo de la investigación se realiza la revisión de literatura de impacto, utilizan métodos, técnicas y herramientas como entrevistas, trabajo con expertos, lluvia de ideas, análisis descriptivo y análisis factorial exploratorio, diagramas y gráficos de control.

Calidad, Cadena de suministro, Factores determinantes

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Introduction

The Quality Management approach has changed from the traditional scenario enterprise-focused to complete supply chain systems. This change in focus has caused a change in the competitive priorities of many companies, from only the quality of the product to the overall quality of the supply chain (Kuei & Madu, 2001, pp. 409,423). On the other hand, research in Supply Chain Management has been transformed from an operational and tactical level focused on cost, delivery, and risks, to a more complex and demanding strategic level (Melnyk, 2009, pp. 4629, 4653).

There is research in Asia and the United States of America that addresses quality in the supply chain but these studies call for practical implementation since they lack them. Not yet there are many investigations on the application of ISO 9001:2015 to the Quality Management of the Supply Chain but in the studies already described the advantage of this application is observed on the competitiveness of the organization; based on administrative management tools, throwing excellent results.

The Deming management method is currently adopted by many companies in the United States and worldwide (Hodgson, 1987); Its widespread popularity appears to stem from numerous studies of cases that attribute the organizational change to the influence of Deming's management method (Hodgson, 1987). The Management Model Deming bases his approach on statistical control, problem-solving, and refinement or continuous improvement.

Problem statement

Studying the theory and practices of quality in companies as individual entities is common, but there is little research on the integration of quality requirements in the design and planning of supply chains supply (Carmignani, 2009) and how to link these practices and management systems with all partners in the chain (Gylling, 2015).

Companies seek greater integration between the partners in the chain in order to strengthen the operational efficiencies and more flexibly meet market demand (KPMG, 2014). It's necessary then to study the critical factors of the quality, so that the problem of research on which the presentation is made is that: The metalworking manufacturing industry lacks a system that allows for adequate quality management in its supply chain.

Social impact

Proper management of the supply chain undoubtedly guarantees customer satisfaction and the success of the company, since it involves activities from the supply of raw materials, manufacturing, distribution, and delivery to the end-user. Failure to treat the supply chain as it is due causes the bankruptcy of the company to which it belongs. The lagoon region (Gómez Palacio, Torreón, Lerdo, Matamoros) has as its strength manufacturing as an industrial pillar with hundreds of workers who depend economically on this type of employment. Poor chain quality management of supply brings with it the loss of profitability of the company, which would greatly affect a hundred families in that region, to the companies to which it provides services, both health and transport which is fundamental in the development of any region.

Research Questions

1. What are the most important factors influencing quality management in the supply chain?
2. How are supply chain quality management (SCQM) practices in companies' metalworking companies in the region?

Supply Chain

For Lee and Billington (1993) a supply chain represents a network for the functions search for material, its transformation into intermediate and finished products, and the distribution of those finished products to end customers.

Schroeder (2005) defines the supply chain as a sequence of business processes and information that delivers a product or service from suppliers to production and distribution to the customer, ultimately.

Correa & Gómez (2009) suggest that the supply chain proposes the integration and coordination of the company's internal activities and processes with external processes, to achieve a better use of resources and minimize operating costs.

Mentzer (2011) defines a supply chain as the set of three entities that are directly involved in the flows of products, services, finances, and information from the main source of production to the final customer.

The supply chain is defined as a succession that links elements such as customers and suppliers, through manufacturing and services so that the flows of materials, financing, and information effectively meet the purpose of the business (Morales, Rojas, Hernandez, & Rodriguez, 2013).

The supply chain in the health sector integrates manufacturers, distributors, suppliers' third-party logistics, transport companies, hospitals, and finally customers (Moreno, Mendoza, & Rojas, 2015).

A supply chain seeks to meet customer requirements, involves direct and indirectly their functions, they are involved in receiving and fulfilling a request from the client, the transport, warehouse from wholesale to retail, manufacturing, distribution, finance, and customer service. Decisions about the design, planning, and operation of the supply chain play an important role important in the success or failure of a company (Chopra & Meindl, 2017).

Successful supply chain management requires making many decisions related to with the flow of information, products, and funds. Each of these should be taken to increase the DC surplus" (Chopra & Meindl, 2017).

Currently, customers evaluate the quality of the product, or its added value and its availability in a timely manner, hence the need to streamline the processes that help to improve products (Olivos, Orue, Martinez, Mayett, & López, 2015).

Supply chains in an environment driven by globalization develop an analysis known as Global Value Chains (GVC), which come to generate a greater understanding of how companies face globalization

The goal of a supply chain should be to maximize its total profitability. This is the difference between the income generated by the client and the sum of the costs incurred in all the stages of the supply chain. Decisions about it have a great impact on the success or failure of each firm since they significantly influence the income generated as in the cost incurred. Successful supply chains manage flows of products, information, and funds to provide a high level of product availability to the customer while keeping costs low (Chopra & Meindl, 2017).

The introduction of new products with first-class processes, implies cooperation between suppliers and the company to improve the position of existence of products in the market, at the minimum cost of operation.

Each supply chain has its own identity, according to the product it offers to the consumer, the main condition in how it is distributed, the goal is to look for more common problems that occur frequently throughout the supply chain.

Managing the supply chain seeks to generate impact value by promoting both efficiency and customer service, which implies the best coordination and operation of components object that is sought to be constantly improved (García & Wilmer, 2016).

The term supply chain evokes the image of a product or supply moving along across it, from suppliers to manufacturers to distributors to retailers. In effect, this is part of the supply chain, but it is also important to visualize the information flows, funds, and products in both directions from it. The term supply chain can also imply that only one participant intervenes in each stage. The manufacturer can receive material from various suppliers and then supply it to various distributors.

Quality control and its management in organizations

It has become practically impossible to create a sustainable competitive advantage utilizing tangible product. Therefore, to be successful in a business, you need to install barriers to entry. incorporating a "service" as a complete package to the client, composed of processes, practices, and varied features and tangible and intangible results difficult to overcome by a competitor.

The client wants value for the money they pay. In most cases, it gives more importance to the quality of the service received than to the quality of the products purchased. The service, therefore, represents a formidable strategic weapon, thanks to which a company can obtain a differential advantage in the market.

The term quality is defined in ISO 9001:2015 as “the degree to which a set of inherent characteristics of an object meets the requirements”. This covers all activities of the society and is not limited to the areas of production and services; for this reason, people can define it from their professional and individual experiences, their expectations and their education.

As in the manufacture of products, the key to quality in the provision of the service is customer satisfaction, which translates into meeting their expectations, and being well managed as a fundamental element of the service., quality becomes the concern of all employees of the organization. Service quality is a subjective notion that depends entirely on the opinions that customers can give about the perception of the service. (Morales C, 2016).

Quality has become a problem in organizations because its sustainability is based on buyback and consumer recommendations. Every organization strives to make money. The speed of change in today's world has forced them to create a competitive advantage by increasing customers satisfaction. It requires them to focus not only on the process but on how to carry it out because each person perceives quality differently, not everyone appreciates it in the same way and does not have the same experiences. (Berdugo, R. Barbosa, & L. Prada, 2016).

González and Arciniegas (2016) state that quality is excellence that is manifested through a organizational culture in which all members of the company must be integrated, emphasizes that two people may receive a similar service, but each may have a different perception of its quality, taking into account that each client evaluates the attitude of the staff and the service, that is, the client will be the one who assesses the quality of the product or service provided.

For its part, ISO 9001:2015 establishes that quality management is defined as part of a system of quality management that includes the activities through which the organization identifies its objectives and determines the processes and resources necessary to achieve the desired results. Control the interactive processes and resources needed to create value and deliver results for the parties' relevant stakeholders, and allows management to optimize the use of resources, taking into account the long-term and short-term consequences of your decisions.

One of the basic principles of quality management established in the ISO 9001:2015 standard is the customer focus which establishes that quality management must be oriented to comply with the customer requirements and try to exceed their expectations. It is achieved when an organization attracts and maintains the trust of customers and other stakeholders. This can be achieved in the interaction with the client, creating more value and understanding their current and future needs. Contact with customers or between them responds to the described principle and is achieved in moments of service. Quality management is a living discipline of study in constant evolution and construction. Its concept and importance have been enhanced over time by considering many environments. Its application has been found in all types of businesses and for various types of products or services (Morales C., 2016).

Quality control and management based on the DEMING management method

The Deming managerial model bases its approach on statistical control, problem-solving and continuous improvement. The concept of continuous improvement receives more attention in part due to the character inherent in global competition that thrives on product progress, service and the process quality. The continuous improvement defines the purpose of Deming's management method. Point 5, for example, encourages organizations to constantly and forever improve the production and service system" (Deming, 1986: 49).

Supply chain management (SCQM) is defined as a system-based approach to supply chain performance improvement that takes advantage of opportunities created by uplinks and descendants with suppliers and clients (Jr T. F., 2008)

Quality must be treated seriously by organizations because, whether tangible or not, the customer demand to satisfy a need, for this reason, companies must achieve correct management of the same (Barbosa, 2012).

Research methodology

The proposed procedure is based on the DEMING cycle methodology for the continuous improvement of processes, for its elaboration, the referred antecedents have been considered and analyzed.

Planning

STEP 1.1: The creation of a diagnostic instrument allows verifying the degree of compliance with certain rules established a priori with an end. The first stage includes a documentary review of the variables identified in the literature, in addition, structured interviews are conducted with staff or direct employees of manufacturing companies (LEAR CORPORATION, PEÑOLES, LALA) and the National Chamber of the Transformation Industry (CANACINTRA). Looking for those factors is considered key to the success of organizations. Based on previous studies that bring together variables linked to the quality of the supply chain, making them converge in a that integrate the stages of the chain. The study "Description of SCQM practices" by Truong, 2016; "Key variables of a study" by Bastas, 2018; Kim, 2016; Soares, 2017; Wang, 2014; ISO 9001:2015, defined on eight key factors.

STEP 1.2. The second stage uses a focus group method (FG) with 12 people; 3 master's degrees, 5 doctors, and 4 businessmen. Participants are asked to analyze and validate the conceptual definitions and scales, the level of relevance and the clarity and precision of the formulation presented, as well as the option of proposing other items or factors. The FG exercise eliminated and/or reformulated a group of variables, obtaining finally a list of 24 variables that refer to quality practices in companies of the manufactory.

With the problem identified and the solution alternatives analyzed, an Analysis is carried out Exploratory Factorial (AFE) that allows data reduction to obtain the least amount of factors that explain the maximum number of variables necessary for the study.

This phase includes the selection of the sample, considering the requirements of the statistical method used. They indicate that it should not perform the analysis with a sample of less than 50 observations.

De Winter et al. (2009) indicate that a sample of $N = 50$ observations is a reasonable minimum. The consultation is carried out with 75 strategically selected experts as "non-probabilistic representative samples based on the insertion in them of groups considered as typical by the researcher" (Hernández-Sampieri, 2006) with 15% engineers, 25% masters, 30% doctors, and 30% businessmen. It takes place over a two-week period in July 2020, using a questionnaire application on the Internet, developed with 24 practices carried out by the author using the Likert format and five responses in two successive rounds (See Table 1).

Supply chain	
FCRP	Specified due attention to the form and content of how the relationship is managed with suppliers
SC	Measure customer satisfaction
MCP	Established collaborative quality improvement activities with suppliers, partners, and other interested parties
PPNC	Aligned processes, products, and services with the needs of customers, and markets
II	Exchanged information, comments, experience, and resources with the parties that participate in the supply chain
SCPP	Consideration of the expectations of internal, and external customers in the planning of the processes
IPC	Considering the supplier as important as the customer
SNC	Tracked customer perceptions, and the degree to which they were meet your needs, and expectations
DMC	Implemented reliable, and secure data to make organizational and management decisions quality improvement
IC	Determined key indicators to measure quality objectives
PE	Meeting delivery deadlines to customers
AD	Exercised by senior management its responsibility so that the processes are in line with quality objectives
PCPP	Related (associated) quality practices with supplier participation
FLC	Trained the workforce with initiatives, and contributed to quality as requires
ASTM	Tests and quality tests ASTM (and other standards) carried out on the materials acquired
CMPP	Evaluated the quality of the raw material that enters the production process

RFL	Provided the workforce with the necessary resources, capabilities, and authority to drive quality improvement activities
OMC	Quality improvement objectives implemented at all levels of the organization
NCSC	Identified and prioritized the current, and future quality needs of all involved in receiving and fulfilling a customer request
EDP	Determined the stages and controls for the design and development of products
MVPO	Committed the leaders of the organization through a mission, vision, policies, and clear goals
TC	Verified the traceability, and calibration of the corresponding equipment.
NCC	Aware at all levels of the organization of the quality needs that customers demand
ID	Determined and controlled the documented information required by the Quality management

Table 1 Final structure of the research instrument based on the responses of the participants in this exercise
Source: Truong, 2016; Bastas, 2018; Kim 2016; Soares, 2017; Wang, 2014; ISO 9001:2015

At the end of the answers, they are analyzed through the SPSS software. Are used acronyms to reduce the space of practices.

Exploratory factor analysis method

Step 1.3: Based on the answers of the FG, the research instrument is created that will be validated by experts.

Step 1.4. It is based on a population of 75 experts with the capacity to answer the instrument for their relationship with this sector both from the company and from the academy and its well-known willingness to reply. According to Santos, 2000, empirically, when the concordance coefficient expressed in servings (C_c) $\geq 60\%$ agreement is considered acceptable. In this case, the survey was answered by 63 experts who are 84% of the population with the capacity and willingness to respond, so what remains the sample taken is accepted.

Step 1.5.- The instrument is sent to the experts' emails and their responses are obtained.

Step 1.6.- The results are processed using SPSS and EFA.

Exploratory Factor Analysis (EFA) allows variables to be grouped into homogeneous groups.

All these elements can be correlated and grouped in a single factor Kahn, 2006, but also are relatively independent of the other elements that will be grouped into other factors. to evaluate if the application of the EFA is possible, we calculate the measure of the adequacy of sampling, Kaiser-Meyer-Olkin (KMO), which consists of comparing the observed correlation coefficients with the magnitude of partial correlation coefficients. If the calculated KMO value is less than 0.6, EFA should not be applied.

Another measure is Bartlett's sphericity test, which tests the null hypothesis (H_0) to evaluate if the observed correlation matrix is an identity matrix. If the level of significance calculated is greater than 0.05, there is not enough evidence to reject H_0 . Next, it is validated if the application of AFE is possible or not is the value of the anti-image matrix. This test requires that values of the diagonal of the anti-image correlation matrix are high. The other necessary condition is that there must be high correlations between the variables.

Step 1.7.- the determining factors and their corresponding dependent variables are identified.

Data processing

The AFE processing is presented based on the applied instrument and the determining factors obtained. It is shown that all the requirements to apply the AFE are met. The measure of sampling adequacy (KMO) has a value of 0.913 and the value of the Bartlett test is 0.00 so that it is obtained that the correlations between the variables are small enough so that the factor analysis can be a good idea since there are significant correlations in the data. Too it is specified that the value of Cronbach's alpha coefficient is 0.93, which indicates the reliability of the results.

The diagonal values of the anti-image matrix are greater than 0.75 with an average value of the anti-image matrix shows a diagonal with values very close to 1 and the rest below, the sedimentation shows that most of the residuals are below 0.05. The results shown by the AFE highlight the acceptance of 21 of the 24 variables analyzed. The three factors not included have a factor loading of less than 0.6. This analysis reduces the 21 variables into two main components, which explain 68.361% of variance.

Varimax rotation is applied to achieve a better interpretation of the results. It is a method of orthogonal rotation of factors that seeks the best interpretation of the components or constructors. The factorial rotation aims to select the most interpretable solution. It consists of turning the four coordinate axes representing the factors/components. Continue the procedure until manage to approach the saturation of the components.

The two principal components (PCs) are identified as determining factors for success. I know assign names to these determining factors as follows: No. 1, Supply Chain; No. 2, Quality. The names assigned have to do with the nature of the variables that they identify each component. They are chosen according to the bibliographical analysis described.

Products obtained

The first results of this study correspond to two of the expected products:

1.- Research instrument that helps to detect, validate and prevent failures that may arise in the chain, improving the operation of the company's SGC and reducing the negative effects in the quality of the product and allows its application in metalworking companies; The instrument of research that allows its application in metalworking companies is shown in table 2 then of the conclusion of the AFE where it can be seen, 12 variables are associated or belong to the factor supply chain and nine variables associated with the quality factor and table 1 in which it remains structured the final result of this study.

2. -Determining factors of quality management in the supply chain; It is concluded that the two determining factors are quality and supply chain.

Chain Supply	Quality
FCRP	ID
SC	ASTM
MCP	CMPP
PPNC	RFL
II	OMC
SCPP	NCSC
IPC	MVPO
SNC	TC
DMC	NCC
IC	
PE	
AD	

Table 2 Organized rotated matrix
Source: Own elaboration

Conclusions

In Latin America it is necessary to develop this type of quality proces in the supply chain since the studies that the web highlights are mostly carried out in Korea and the US; it makes us consider the need to know this type of work in our area (Mexico). Example of this we have Kim, 2016 who presents the objects of this study classified in a 2×2 matrix according to the efficiency of buyers and suppliers, proposing that these be carried out in less measure as this classification may raise concerns about dichotomizing variables of scale by giving less consideration to the values in them (Kim, 2016).

On the other hand, we have Truong, 2016 which shows the need to guarantee the reliability and validity of these models, making it necessary to consolidate their rationality through studies empirical studies in different contexts and the empirical analysis, then, provide evidence to strengthen the relationship between SCQM practices and firm performance.

Soares, 2017 is limited to UK manufacturing companies proposing future studies of SCQM could test modeling research longitudinally. It is argued that the data Longitudinal 324 have the potential to identify improvement or quality throughout the supply chain over time and locate associated causes and effects of sleep that may not be apparent until later in the course of long-term supply chain relationships.

With the study carried out, the determining variables of success in the supply chain have been identified supply, being more influential in terms of its quality, divided into two factors determiners. As a result of them, a guide is made that allows registering and transmitting in orderly and systematic information obtained from the research instrument created, which allows its application in metalworking manufacturing companies; showing after factor analysis 12 variables that are associated or belong to the supply chain factor and nine variables associated with factor quality, being structured the final result of this study. The study has produced an evaluation of previous research regarding the management of the quality of the supply chain in the metalworking manufacturing industry. It shows little implementation of a study like this, allowing the use of new opportunities to FURTHER RESEARCH.

Which highlights the possibility of implementation; being a different challenge for each organization but not impossible to apply. In general, there is a paucity of studies related to the implementation of a supply chain quality management system in metalworking manufacturing industries. Therefore, further research is required to allow carry out a practical situation of supply chain quality control (SCQM) in a metal-mechanical company, taking advantage of the possible proposals for improvement actions that are thrown from the same for future research.

For all the foregoing, it is also necessary to consider the reason for the lack of applicability of this type of supply chain management systems in metalworking manufacturing companies; which would allow to know the key factors that positively and negatively influence the management of the chain.

It is proposed the development of research related to the subject that demonstrates the feasibility of itself and its influence on the profitability of the organization. Furthermore, due to the complexity of the study in metalworking companies, it would be very good to simulate it that allows verifying how profitable the application of the quality management system can be in it.

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Study of Integral Logistics in areas of a supermarket, in the city of Villahermosa, Tabasco, Mexico, for a comprehensive improvement proposal

Estudio de la Logística Integral en áreas de un supermercado, en la ciudad de Villahermosa, Tabasco, México, para una propuesta integral de mejora

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Abstract

The central purpose of the project is the study of Integral Logistics in which it is analyzed in two specific areas: Human Resources and Warehouse. Both areas belong to an internationally renowned supermarket located in the city of Villahermosa, Tabasco, Mexico. The objective of the study is to collect information on the "Before, During, and After" of the development of the activities of the aforementioned departments, in order to collect the necessary information and prepare a Measurement Instrument structured to suit the organization under study. Said Instrument contains specific questions according to the activities carried out in each area, to subsequently measure them through the Likert scale. This Instrument allows data to be collected in a quantitative way, highlighting the areas of opportunity of the different departments in question, granting items as a reference to achieve an interpretation of the percentage of responses obtained. Said data collection instrument was completed with the support of the General Manager of the branch under study, which was carried out through the Microsoft Teams platform, where the necessary information was obtained in order to later be interpreted according to the elements obtained. These helped to capture the results obtained in pie charts and develop a proposal for improvement.

Measuring instrument, Logistics, Likert

Resumen

El propósito central del proyecto es el estudio de la Logística Integral en el cual se analiza en dos áreas específicas: Recursos Humanos y Almacén. Ambas áreas pertenecen a un supermercado de renombre internacional ubicado en la ciudad de Villahermosa, Tabasco, México. El estudio tiene como objetivo recabar información del "Antes, Durante y Después" del desarrollo de las actividades de los departamentos anteriormente nombrados, para así recabar la información necesaria y elaborar un Instrumento de Medición estructurado a la medida de la organización en estudio. Dicho Instrumento contiene preguntas específicas de acuerdo a las actividades que se llevan a cabo en cada área, para posteriormente medirlas a través de la escala de Likert. Este Instrumento permite recolectar los datos de una forma cuantitativa, resaltando las áreas de oportunidad de los distintos departamentos en cuestión, otorgando ítems como referencia para lograr tener una interpretación con el porcentaje de respuestas obtenidas. Dicho instrumento de recolección de datos fue completado con el apoyo del Gerente General de la sucursal en estudio, la cual se llevó a cabo a través de la plataforma Microsoft Teams, donde se obtuvo la información necesaria para así posteriormente ser interpretada de acuerdo con los ítems obtenidos. Éstos ayudaron para plasmar los resultados obtenidos en graficas de pastel y desarrollar una propuesta de mejora.

Instrumento de medición, Logística, Likert

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Introduction

For today's organizations, Integral Logistics is a concept that seeks to improve the quality of the services and products they offer. With the characteristics of the globalized and changing market, the management of products has become a challenge to consider, which is why Integral Logistics seeks to efficiently integrate all areas and processes, with the aim of delivering quality to consumers.

The dynamism of the markets requires faster service from all players, with a fast supply chain adapted to the product to face the difficulties posed by omnichannel. In addition, the life cycle of products is shrinking more and more, which has a drastic impact on logistics processes and activities.

For a better understanding and organization, it is possible to divide the logistics of an organization into three phases, and call them: "Before, During and After". It is for this reason that this research seeks to develop a proposal for improvement based on a detailed study of the areas and processes of a system such as a supermarket, in order to propose an integral scenario that allows visualizing internal and external factors.

Methodology

The emergence of the idea

The figure graphically represents the methodological follow-up of the research.

Starting from phase 1, the thematic framework includes "Integral Logistics in Organizations".

Phase 2 is made up of the General Theme of the investigation and is called "Integral Logistics in the areas of a supermarket", delimiting the investigation.

Phase 3 specifies and expands the subject of study, consolidating the research and calling it "Study of Integral Logistics in areas of a supermarket, in the city of Villahermosa, Tabasco, Mexico, for a comprehensive proposal for improvement".

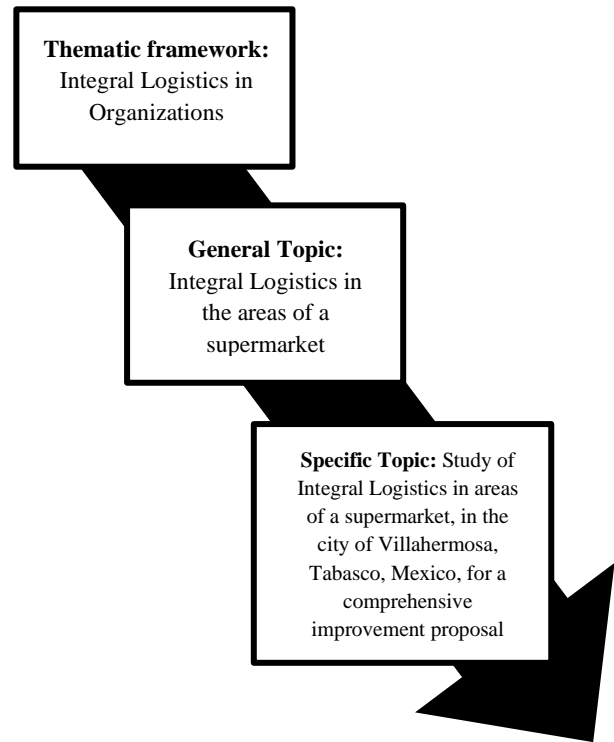


Figure 1 Methodological follow-up of the research
 Source: Author's Perception

Identification of experts

The areas to be studied for this study are those of Human Resources and Warehouse, for which the leaders or managers of these areas were identified, it is worth mentioning that at all times the General Director of the organization was advised. At this stage of the process, the identified leaders will be called authors.

Once the authors have been identified, rounds of interviews are scheduled in which questions are asked about the domain of the study topic.

Subjectively, the researcher determines if the selected actors have knowledge of the topics covered, if they have the knowledge to continue with the investigation, this staff is called an expert.

Measurement instrument design

To achieve an integrated scenario and according to the current situation of the organization, it is necessary to design a measurement instrument integrating factors relevant to the subject of study. The instrument was designed with the information provided by the experts and by the General Manager of the company.

The instrument considered dividing the logistics process into three stages, which are the following: Before logistics, During logistics, and After logistics.

The instrument counts a Likert scale where:

- 1 = Strongly Disagree.
- 2 = Disagree.
- 3 = Undecided.
- 4 = Agree.
- 5 = Totally Agree.

BEFORE	1	2	3	4	5
How much do you agree with the way in which the activities to be carried out during the workday are scheduled?					
How much do you agree with the use of local resources, such as planning software, among others?					
Do you consider the timing of distribution services to be correct or effective?					
Do you agree with the way the efficiency of suppliers is evaluated?					
Do you agree with how often suppliers are evaluated?					
Do you agree with the employee evaluation system or method?					
Does the organization carry out ergonomic studies for better employee productivity?					
Does the organization conduct market research?					
Does the organization have a good interrelation within the system?					
Do you think the organization has a good work environment scheme?					
Does the organization provide feedback on the processes to find possible points for improvement?					
Do you agree with the strategies that have been implemented to increase the reduction of unnecessary efforts?					

Table 1 Measuring instrument (Stage before logistics)
Source: Author's Perception

DURING	1	2	3	4	5
Have you had mishaps when carrying out your activities?					
Do you consider that the area has a correct Emergency Response Plan?					
Do you agree with the time periods that should be expected to maintain the facilities in your area?					
Do you think training is important?					
How much do you agree with the way the staff is trained to act in an emergency?					
Do you have effective communication between workgroups in your area?					
With respect to your area, do you consider that there is good management of the activities that are carried out?					
Is there coordination in the management of activities by the work team?					
Does your department correctly apply the QMS (Quality Management System)?					
Are plans or programs developed to improve staff performance?					
Is there an evaluation of the activities carried out in the area?					
Do you consider that developing a security plan and evaluating activities is of great importance for continuous improvement?					

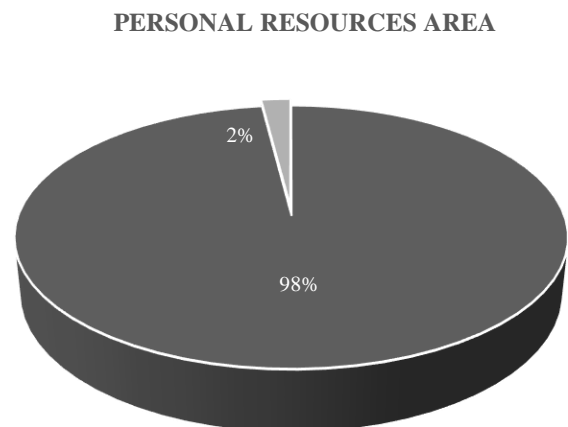
Table 2 Measuring instrument (Stage during logistics)
Source: Author's Perception

AFTER	1	2	3	4	5
Is internal communication promoted in the department?					
Is it important for the company to promote human talent?					
Does the department implement methodologies so that a team is competent and aligned with the strategies?					
Is there frequent training for the worker?					
Do they optimize logistics processes to obtain new tools?					
Does the company have information management systems (software or programs)?					
Does the company make evaluations once the processes are finished?					
Are effective delivery times observed and analyzed?					
Are proposals made for measures to reduce accidents or mishaps?					
Are the results of the customer satisfaction study analyzed?					
Does the organization monitor the results of applied innovations?					
Does the organization analyze the results of using the 5s?					

Table 3 Measuring instrument (Stage after logistics)
Source: Author's Perception

Results

The results of the Human Resources area are as follows:

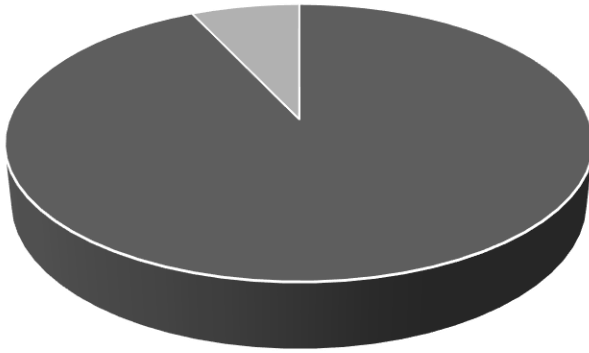


Graphic 1 Global result of the measurement of the level of comprehensive logistics at the three levels in the Human Resources area
Source: Own elaboration

According to the information collected in the three stages of Logistics, in the area of human resources, it is represented in the graph that 98% of the activities that are developed in this department are carried out efficiently; however, there is a 2% in which we are shown the answer obtained from question 1 about the existence of mishaps when carrying out the activities, therefore, this means that there is no good management of the activities, because there is a probability that some of the workers are not properly trained, or that some worker does not carry out their activities correctly and makes the work team inefficient.

The results of the Warehouse area are as follows

WAREHOUSE AREA



Graphic 2 Global result of the measurement of the level of comprehensive logistics at the three levels in the Warehouse area

Source: Own elaboration

When applying the measurement instrument in the Warehouse area, a result of 93% efficiency was obtained in most of the tasks carried out, in such a way that 7% is obtained as an aspect of improvement. It is interpreted that the warehouse department has as a negativity the lack of technological equipment, because these resources do not depend on them, since being a point of sale, they need an approval from the headquarters, in the same way the lack of supply of suppliers represents a deficiency, since sometimes they fail to satisfy the total need for the products.

Improvement proposal

Through the study in the departments of Human Resources and Warehouse of the supermarket, it has been possible to identify certain factors that are points of improvement to establish good planning of activities, for which a proposal has been proposed based on the efficiency of the processes. that are carried out in each area; therefore, it is sought that it be reliable and adjust to the needs of the same.

This proposal seeks to establish a positive impact within the areas studied, using the necessary tools to strengthen and improve service processes and other factors that represent deficiencies.

In such a way, a better performance of the workers can be obtained and at the same time reduce the mishaps that are generated during the development of the activities.

Key points of the improvement proposal

- The 9S methodology will be implemented, to obtain better performance by the workers who work in the Human Resources and Warehouse areas.
- A virtual training and education program will be established using software that is easily accessible on computers, tablets, smartphones, etc. This to prepare workers so that they adapt to the new guidelines and generate continuous improvement.
- Create a software development department in the Walmart company, which provides those computer systems necessary for use in the areas of human resources and warehouse, to avoid delays during the development of activities.
- Develop an emergency plan which includes your suppliers, to establish a set of strategies and actions to be carried out in an emergency.
- Create a data collection tool, which allows the worker to be aware of the conditions in which these areas of both human resources and the warehouse are found, establishing a software that allows the management and good control of the activities that are developed in the handling of the products.

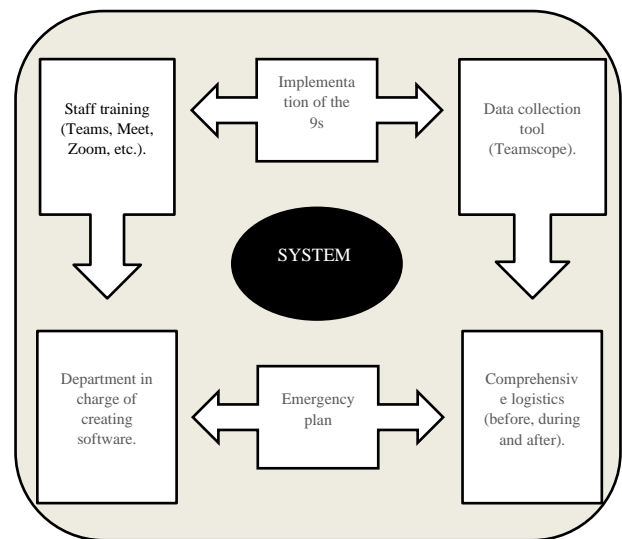


Figure 1 Improvement Proposal, Model

Source: Author's Perception

Conclusions

In the preparation of this analysis, it can be seen that despite the fact that the supermarket is internationally recognized, it presents a minimum percentage of inefficiency in these areas.

When interpreting the graphs that were elaborated with the items obtained when applying the survey, it shows us that it is a company that has a great scope, but sometimes it has mishaps that influence the organization of all areas and in particular, Human Resources and Warehouse, since which are departments that promote the information flow activities of payroll employees, product reception and stock quality verification.

Through the general graphs of each department in which the human resources area shows us a certain degree of stability, however, in the warehouse area, certain instability is denoted.

Through the established studies, multiple factors can be seen that highlight some of the problems that the company acquires at a certain moment, in this way, the tools, and interpretations that were obtained from the results of the interview, indicate that there is a deficiency in the said departments, therefore, proposals for improvement are designed in the same way as their implementation model, in order to eliminate insufficiency in those areas and be able to achieve efficiency, in this way these mishaps are eliminated in said sites so that they are competitive they must be transformed, invest in technology and develop new methods, which help improve activities.

With the analysis obtained, it is concluded that a company is characterized as competitive, they must be updated to new methods, invest in technology, be more flexible and respond quickly to the market.

Therefore, the path towards an increasingly innovative future is part of the implementation of strategic tools that have been studied and optimized today, achieving great progress in the development of information, technology, and intellectual capital.

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Application of the integral technique of productivity evaluation in the bovine industry in the city of Villahermosa Tabasco

Aplicación de la técnica integral de evaluación de la productividad en la industria bovina de la ciudad de Villahermosa Tabasco

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Abstract

Productivity is one of the key factors in any organization, and one that is often not given the necessary attention, regardless of its size or structure. Striving to achieve maximum efficiency and effectiveness in each of the processes carried out within the company should be an absolute priority. Productivity is a crucial indicator, but it is often overlooked. It should be measured objectively and rigorously, and all companies should be able to know exactly what their productivity is like, what it is based on and what is failing. Tabasco is one of the main cattle-producing states in the country, it has an inventory of 1.6 million heads, according to data from the National System for Individual Identification of Livestock (SINIIGA 2019), concentrating more than 55% in small production units with range from 6 to 50 heads. The objective of this study is to present the results of the evaluation that was carried out through the instrument "comprehensive productivity evaluation technique" on the cattle industry in the city of Villahermosa, Tabasco, for further analysis and reflection.

Resumen

La productividad es uno de los factores clave de cualquier organización, y al que muchas veces no se le presta la atención necesaria, no importando su tamaño o su estructura. Esforzarse por lograr la máxima eficiencia y eficacia en cada uno de los procesos llevados a cabo dentro de la empresa debería ser una prioridad absoluta. La productividad es un indicador crucial, pero muchas veces se pasa por alto. Debería medirse de forma objetiva y rigurosa, y todas las empresas deberían ser capaces de saber exactamente cómo es su productividad, en qué se basa esta y en qué fallan. Tabasco es uno de los principales estados productores de ganado bovino del país, cuenta con un inventario de 1.6 millones de cabezas, según datos del Sistema Nacional de Identificación Individual de Ganado (SINIIGA 2019), concentrando más del 55% en pequeñas unidades de producción con rango de 6 a 50 cabezas. El objetivo del presente estudio es dar a conocer los resultados de la evaluación que se realizó por medio del instrumento "técnica integral de evaluación de la productividad", sobre la industria bovina en la ciudad de Villahermosa, Tabasco, para su posterior análisis y reflexión.

Productivity, Measurement, Evaluation, Competitiveness, Cattle industry

Productividad, Medición, Evaluación, Competitividad, Industria bovina

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Introduction

Productivity allows us to measure what is produced in any organization, based on the resources that we are using for it, so its objective is to optimize that amount of resources used to obtain better results. This serves to find out if we are efficient in what we do or if we need to adjust the processes we carry out, if we need to improve or adapt them in order to grow. The ideal result is to obtain the greatest amount of results using the least possible amount of resources, that would imply maximum efficiency.

Productivity measurement is the only process capable of telling us how well or how poorly we are using our resources, in this way we can identify all those weak points in our management, which translate into points of unproductivity and make it impossible for us to reach be more profitable.

Through continuous improvement, it is possible to be more productive and competitive in the market to which the organization belongs, on the other hand, organizations must analyze the processes used, so that if there is any problem it can be improved or corrected; As a result of the application of this technique, organizations may grow within the market and even become leaders.

Therefore, through the application of the TIEP instrument and the analysis of results, the benefits of carrying out a productivity evaluation process are exposed.

Background

The definition of productivity is complex and does not reflect only a technical and managerial problem.

The concept of productivity is closely related to that of production. They are parallel concepts between which similarities and differences can be established.

In this sense, production, whether gross or net, is, as Miguel (1959) points out, an absolute concept. From a quantitative point of view, the concept of productivity is relative, since the idea of quantity is associated with that of quality (Estiballo and Zamora, 2002).

Productivity, understood as the relationship that exists between the resources that a company invests in its operations and the benefits that it obtains from it, is a fundamental indicator in the analysis of the state of a company and the quality of its management. The concept of productivity implies the interaction between the different factors in the workplace (Belenguer and Guiarro 2018).

Output (or results achieved) is related to many different resources such as output per hour worked, per unit of material, or per cost; Instead, productivity is affected by a combined set of many determining factors such as the quality and availability of materials, the availability and production capacity of machinery, the attitude and skill level of the workforce, the managers' motivation and effectiveness; output or performance, costs, and results are non-equivalent components of productivity effort.

Most associate the concept of productivity with that of production, because productivity is something more visible, tangible and measurable.

The more the goals and objectives of different organizations, institutions or companies vary, the more different their definitions of productivity will be.

The International Labor Organization has been promoting for many years a progressive approach to productivity based on the effective and efficient use of all resources: capital, land, materials, energy, information and time, as well as from work. To push that idea forward, you need to combat some common misconceptions about productivity.

Productivity is not just labor efficiency or 'labour productivity', even though labor productivity statistics are still useful data for policy making.

In general, productivity could be viewed as a global measure of how well organizations meet the following criteria:

- Objectives: extent to which they are achieved.
- Efficiency: how effectively resources are used to create a useful product.

- Effectiveness: result achieved compared to possible result.
- Comparability: way of recording productivity performance over time.

Although there are many different definitions of productivity, the most common criterion (and not one definition) for designing a productivity model is to identify the correct output and input components according to long, medium-, and short-term development goals. of the company, the sector or the country.

There are different methodologies to measure productivity, which have specific purposes that are useful in various cases. However, for the purposes of effective comparisons between companies, regions, chains or sectors, an approved methodology is required (CPC and OITE, 2002).

It is noteworthy that productivity is a concept that has been present in the analysis of many economists and has been developed historically. In the last century, two stages were defined, broadly speaking: one in which the authors were mainly concerned with developing the concept theoretically, analyzing what the determining factors are (incorporating or breaking them down); and the second, in which the research focused, fundamentally, on refining the measurement methods.

According to Botero (2006), there are two main aspects: one is related to efficiency measures, which go back to Farrell (1957); the other, those that address the variation in total factor productivity (TFP), which refer mainly to Solow (1957).

The importance of the bovine industry.

Today, the livestock sector represents one of the fastest growing components of the agricultural sector worldwide, with beef being the second most consumed livestock product, surpassed only by poultry, mainly chicken. Meat production is the most widespread in rural areas, since it is carried out, without exception, in all areas of the country and even in adverse environmental conditions that do not allow the practice of other productive activities. There are four types of TIF establishments Slaughter, Cutting and deboning, Refrigeration and Transformation.

Tabasco is one of the main cattle producing states in the country, it has an inventory of 1.6 million heads, according to data from the National System for Individual Identification of Livestock (SINIIGA 2019), concentrating more than 55% in small production units with range from 6 to 50 heads.

The state of Tabasco has a tropical climate with 10 months of rain per year and an average annual rainfall of 2,250 mm (Inegi 2019), which allows for a supply of green fodder most of the year, which is a business opportunity. in the stages of development at mid-fattening and finishing steers.

It is important to mention that in the area there is a presence of companies in the meat industry, which demand supplies of half-fattened and finished animals.

The cattle industry cattle ranching is the main economic activity in rural areas, it is important to highlight the regional cattle culture, represented to a large extent by the Regional Livestock Union of Tabasco, which brings together around 14 thousand ranchers of the almost 33 thousand livestock producers, this organization is shown as an example at the national level, with 70 years of existence it has shown a solid union strength.

Comprehensive productivity evaluation technique (CPET)

The Comprehensive Productivity Measurement Technique is based on 10 priority elements in any organization, whether from the intangible or tangible point of view, since both aspects are necessary to consider when productivity measurement is required; The first step that we must fulfill as evaluators is to have a systemic and comprehensive approach, if this aspect does not really exist, it should be considered that there will be biases.

On the other hand, the knowledge that the evaluator has of both internal and external contexts is also important, in order to be able to carry out his work and focus the parties questioned on the content of each of the basic elements of productivity.

The Comprehensive Productivity Measurement Technique is based on 10 elements:

1. Conceptual approach of the company.
2. Process knowledge.
3. Social scope of the organization.
4. Planning administration.
5. Management involvement.
6. Creativity and organizational innovation.
7. Knowledge of the client(s).
8. Technological development.
9. Macroeconomic knowledge.
10. Comprehensive development of human resources.

To consider handling the Comprehensive Productivity Evaluation Technique, it is necessary to have extensive knowledge of the context variables, and when carrying out the practical work, consider the participation of each of them in the organization.

Also, as each company is different, the weight of the item can change. Then all this will influence the results of the study scenario.

The evaluator must consider the result of all these elements integrated into the technique used, and from there carry out the corresponding analysis, which will determine which variables are impacting the company, as well as the level of productivity.

Previous measuring instruments

A measurement instrument is a technique or set of techniques that will allow a numerical assignment that quantifies the manifestations of a construct that is measurable only indirectly (Herrera, 1998).

Research instruments are operational tools that allow data collection; however, it must be taken into account that research practices without a defined epistemology become an instrumentalization of techniques (Sandín, 2003) so that every instrument must be the product of an articulation between paradigm, epistemology, theoretical perspective, methodology and techniques for data collection and analysis.

The main properties of a measurement are reliability and validity (Carmines and Zeller, 1987).

Instead of classifying the types of validity, Messick (1989) proposes collecting different types of evidence based on the use and objectives of the instrument, including content evidence, construct evidence, and its predictive value.

In addition, it must be taken into account that validity is not an intrinsic property of the instruments, but will depend on the objective of the measurement, the population and the context of application, so that an instrument may be valid for a particular group, but not for others.

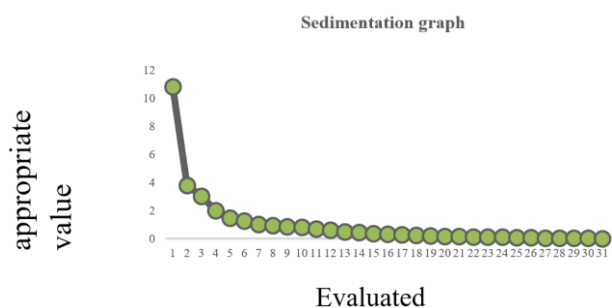
Validity is not a dichotomous trait, but one of degree, that is, it cannot be stated conclusively that a test is valid, but rather it can be stated whether it has certain degrees of validity for certain specific uses and certain populations (Alfaro and Montero, 2013).

Taking these referents into account, the logical sequence to design a research instrument for measurement purposes is divided into four phases (Table 1), first the theoretical considerations and objectives of the research, second the validation of expert judges, third the selection of the sample for the pilot test and the administration of the instrument and fourth, the process for the psychometric validation.

Logical sequence for the process of design, drafting and validation of an instrument.	
First phase	Objectives, theory and construct
Second stage	Expert judgment validation
Third phase	Pilot test
Fourth phase	Psychometric (unidimensionality) Validation

Table 1 Logical sequence for the process of design, drafting and validation of an instrument
Source: Own contribution (2021)

The first analysis to which the instrument must be submitted is the one-dimensionality test of the construct. For this, the analysis of the sedimentation graph is proposed (Graphic 1).



Graphic 1 Sedimentation chart
Source: Own contribution (2021)

Methodology

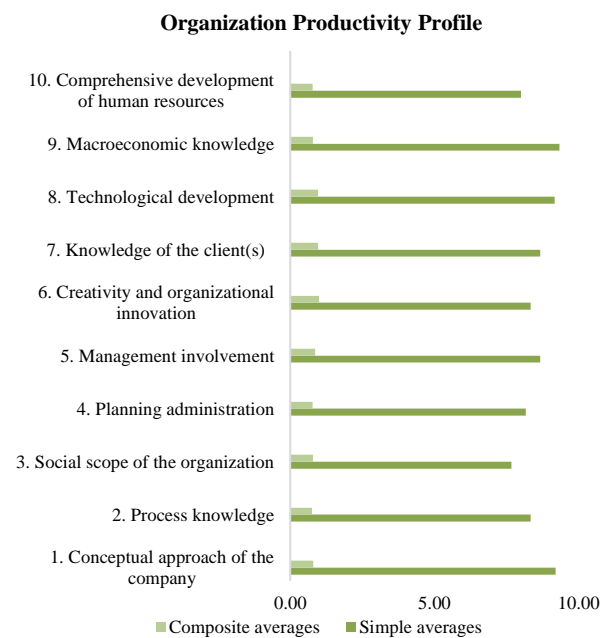
The main objective of the study is to know the integral technique of productivity evaluation that facilitates the measurement from the intangible or tangible point of view, which was applied the TIEP instrument (Table 2), which consists of two questions or more for each element., it is emphasized that prior knowledge of the meaning of each element must be had, considering the participation of each of them in the organization.

Element	TIEP (Integral Productivity Evaluation Technique)												P	T	C		
	Economic Variable		Political Variable		Environmental Variable		Cultural Variable		Technological Variable		Social variable					P/S	
	p	E	P	E	P	E	P	E	P	E	P	E					
1. Conceptual approach of the company																	
2. Process knowledge																	
3. Social scope of the organization																	
4. Planning administration																	
5. Management involvement																	
6. Creativity and organizational innovation																	
7. Knowledge of the client(s)																	
8. Technological development																	
9. Macroeconomic knowledge																	
10. Comprehensive development of human resources																	

Table 2 TIEP
Source: Own contribution 2021

Analysis of results

Based on the instrument that was applied to the organization's collaborators, the results shown in graph 2 were obtained, which gives us a scenario of the internal and external situation of the context variables that affect it.



Graphic 2 Organization productivity profile
Source: Own contribution 2021

It is observed that the data obtained reflect that the sector has experienced an increase in productivity, according to the indicators of the elements that are observed in (graphic 2) above.

Recognizing that the ten elements have the same degree of importance, macroeconomic knowledge, technological development and the conceptual approach of the company are highlighted, since they are the ones that obtained weighting.

It is important for the cattle industry to have a broad knowledge and certainty about the macroeconomic environment, since it is always in constant change.

Regarding technological development, any industry in any field can improve its processes, make them more efficient, so the capacity for innovation and technological development is key to achieving this.

This refers to the reaction that the organization will have to the need for technological change to overcome the traditional patterns of processing, production, sales process, as well as adding value to products and services.

Lastly, it is of great interest to mention the importance that the conception of the conceptual approach has for organizations, since it provides the company with greater flexibility and capacity for adaptation and, therefore, with a greater capacity for anticipation and action. in a dynamic environment.

Conclusions

Assessing productivity in the cattle industry through the aforementioned instrument allows us to expand our panorama and have a real scenario of the state in which it is found.

It also encourages the participation, involvement, interest and commitment of the various collaborators in the industry, both managers and operating personnel.

These results create a precedent for the contribution of new elements and approaches to achieve more efficient results in the use of all resources and fulfillment of goals and objectives in order to improve productivity.

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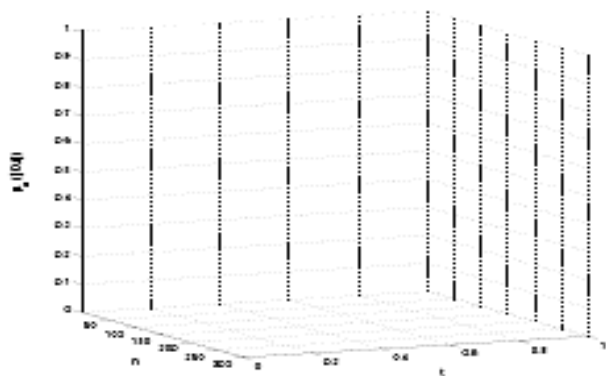
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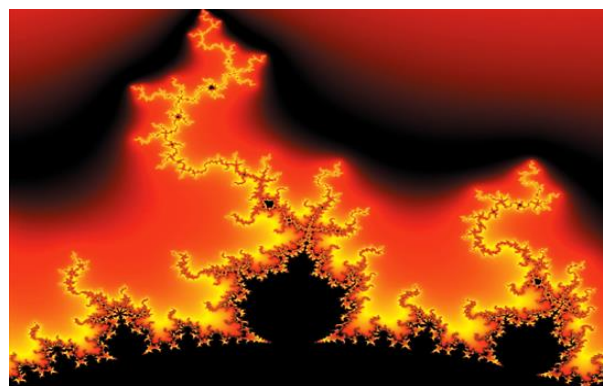


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