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Original article

Digital transformation models in the management of commercial companies

Los modelos de transformación digital en la gestión de las empresas comerciales

Modelos de transformação digital na gestão de empresas comerciais

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ABSTRACT

The phenomenon of digital transformation is emerging as a result of the Covid-19 crisis, which has accelerated commercial companies, forcing them to modify their processes, improve their competitiveness and develop new digital strategies, taking advantage of the full potential of technology to meet their customers. The objective of the study is to establish whether companies in the commerce sector are prepared for the digital transformation process. The proposed research model exposes the areas of the business in which digital technologies are most affected; it focuses on answering the what? and the which? from the perspective of five domains of the underlying principles of the strategies, changing the rules of the business. The research conducted is of qualitative and non-experimental design. The research method was inductive and its scope descriptive and correlational with the objective of quantifying the relationship between the concepts and their variables. The statistical and field technique was used, the main instrument for collecting information was the questionnaire, followed by the databases, using a statistical analysis program that showed the most significant aspects of the indicators studied.

Keywords: digital transformation; digital transformation models; digitalization; customers; organizational culture.

RESUMEN

El fenómeno de la transformación digital está emergiendo a causa de la crisis de Covid-19, el que ha resultado un acelerante en las empresas comerciales, obligándolas a modificar sus procesos, mejorar su competitividad y desarrollar nuevas estrategias digitales aprovechando todo el potencial de la tecnología para conocer a sus clientes. El objetivo del estudio es establecer sí las empresas del sector de comercio están preparadas para el proceso de transformación digital. El modelo de investigación propuesto expone las áreas del negocio en el que las tecnologías digitales se ven más afectadas; se enfoca en responder el ¿qué? y el ¿cuál? desde la perspectiva de cinco dominios de los principios subyacentes de las estrategias, cambiando las reglas del negocio. La investigación realizada es de diseño cualitativo y no experimental. El método de investigación fue inductivo y su alcance descriptivo y correlacional con el objetivo de cuantificar la relación entre los conceptos y sus variables. Se utilizó la técnica estadística y de campo, el instrumento principal de recolección de información fue el cuestionario, seguido por las bases de datos, utilizando un programa de análisis estadístico que mostró los aspectos más significativos de los indicadores estudiados.

Palabras clave: transformación digital; modelos de transformación digital; digitalización; clientes; cultura organizacional.

RESUMO

O fenômeno da transformação digital está surgindo como resultado da crise da Covid-19, que acelerou o ritmo das mudanças nas empresas comerciais, forçando-as a modificar seus processos, melhorar sua competitividade e desenvolver novas estratégias digitais, aproveitando todo o potencial da tecnologia para atender seus clientes. O objetivo do estudo é estabelecer se as empresas do setor varejista estão prontas para o processo de transformação digital. O modelo de pesquisa proposto expõe as áreas do negócio nas quais as tecnologias digitais são mais afetadas; ele se concentra em responder ao quê? e ao qual? a partir da perspectiva de 5 domínios dos princípios subjacentes das estratégias, mudando as regras do negócio. A pesquisa realizada é qualitativa e não-experimental

no projeto. O método de pesquisa foi indutivo e seu escopo foi descritivo e correlacional com o objetivo de quantificar a relação entre os conceitos e suas variáveis. A técnica estatística e de campo foi utilizada, o principal instrumento de coleta de informações foi o questionário, seguido pelos bancos de dados, utilizando um programa de análise estatística que mostrou os aspectos mais significativos dos indicadores estudados.

Palavras-chave: transformação digital; modelos de transformação digital; digitalização; clientes; cultura organizacional.

INTRODUCTION

The Covid-19 crisis has caused organizational changes that have forced a redefinition of business strategies, acting as a catalyst for digital transformation in many sectors of commerce, health and education that has resulted in an accelerant in commercial companies, forcing them to modify their processes, improve their competitiveness and develop new digital strategies, taking advantage of the full potential of technology to meet their customers (Gabryelczyk, 2020).

The objective of the study is to establish whether companies in the commerce sector are prepared for the digital transformation process, whether the use of new digital technologies can generate opportunities for improvement in all areas of a company's business.

For Bindra (2018), there are four very marked reasons, the first is the need for less dependence on humans, which implies the digitization of processes as a first priority and not as an option the use of RPA tools[1], collaborative tools, internet of things automation and other technologies. The second reason is the search for new business models, such as online companies, which have seen a boom in revenues during periods of confinement, unlike traditional trading companies, which have been disrupted by their supply chains due to limitations in the use of technologies, people and processes.

The third reason focuses on the customer, who has had a new behavior forced by the confinement measures, such as not going to restaurants, wearing only casual clothes, reading information online, working from home, not attending public events, which has forced companies to use digital

[1] Robotic Process Automation: software robots that learn to perform digital tasks through the digital actions of humans.

technologies to know and preserve their new and current customers. Finally, changes in the culture and attitude of employees to the new challenges set by the pandemic, such as working from home and being able to establish strategies and organizational changes as in the time before the pandemic (L'Huilllier Troncoso et al., 2020).

The biggest determinant of success for companies in the retail sector is commercial management in order to be able to establish planning designs with the objective of reaching the market, offering a value proposition to their customers. In times of drastic changes due to the pandemic it is even more important, as existing business models will be destroyed and new opportunities will be created (Liguori & Pittz, 2020).

Digital transformation and commercial management worldwide have developed in such a way that many organizations and companies have this initiative as a growth strategy. However, in the retail sector, digital transformation still presents variables that have not been efficiently potentiated to achieve the economic and commercial positioning that this sector is projected, since when moving from traditional sales to digital marketing, customers will experience dramatic changes, for example: customers with more information when deciding, difficulty in loyalty, presence of competitors of all sizes, extreme automation of processes and redefinition of digital competencies of organizational human talent to manage these technologies (Soto Acosta, 2020).

In the year 2017, BenMark, Klapdor, Jullmann and Sundararajan studied autonomous check-out systems, automatic return processes, new forms of payment through mobile or facial recognition as examples of technological solutions based on automation, which from the customer's point of view, as a variable, are also forceful changes that streamline purchasing processes, waiting time, minimize failures, reduce costs, and adjust prices in real time; the latter must consider certain factors such as product mix, elasticity, seasonality of demand and finally the actions of competitors. Another important variable to consider in the digital transformation is interaction, which should include all face-to-face or virtual relationships between the consumer and the retailer in the commercial management and independent of the channel through which they take place (Díaz Martín et al., 2019).

Commercial management and its components in the process

According to Céspedes and Marsh (2017), commercial management is responsible for carrying out the exchange relationship of the company with the market, establishing a relationship of

understanding between the product, customer and market. But its radius of action is much broader, it is not only to understand the product and service, but to understand the final customer with policies of internal character for the implementation of sales strategy such as: 1) Prospecting (also called prospects): it is a set of activities or strategies through which the company selects its potential customers to enter into contact, these activities can be cold calling, emails, social networks, etc. These activities can be cold calls, emails, social networks, etc., in order to target people, they do not know. 2) Qualification: these are initial conversations aimed at filtering the truly interested customer and determining qualified opportunities based on a methodological process. 3) Advanced opportunities: are discussions with qualified opportunities, and finally, 4) Closing: final steps to negotiate and close a deal to convert people interested in buying or using the products or services offered by the company into its customers (Bullemore Campbell & Cristóbal Fransi, 2021). However, for Ponce (2017), commercial management are relative decisions that depend on what markets they want to access, what products they want to sell, what pricing policies to apply and what commercial strategies are effective, understanding that they are decisions that derive from a corporate strategy, but it is also necessary to understand what their relationship with digital transformation is and what the impact that this produces is.

Digitization: from option to obligation in digital transformation

According to Gabryelczyk (2020), Gartner, in that same year, considers in its terminology that digitization is the process of change from analog to digital form, without any structural change in business processes, emphasizing that digitization increases the efficiency of processes and improves data transparency, transforming the world of work, developing new skills in human resources and is made possible by the convergence of technological mega trends such as social networks, cloud computing and Big data. For Caballero (2015), digitization is accelerating and transforming every aspect of society, so he considers six areas in a digitization process: the relationship with the customer, technological resources to improve digitization in its opening in the market, knowledge of customers, digital training of employees, and specialized management and administration programs for proper digitization.

Complementing the previous considerations of Gabryelczyk (2020) and Caballero (2015), digitization is defined as the correct use of technologies to automate the processes of organizations and that causes the destruction of geographical barriers between countries and markets, access to new customers, new competitors and international business presence (Soto Acosta, 2020). These

processes of organizations according to Caballero (2015) are divided into sections that guide companies in their different processes, as shown in table 1.

Table 1 - Main sections in the context of digitization processes

ELEMENTS	DESCRIPTION
Customer relationship	Web solutions, *social business*, payment methods, e-commerce, electronic invoicing.
Infrastructure	Digital security, web positioning, *cloud computing*, internet of things.
Customer knowledge	*Big Data*, knowledge-based actions, measurement and monitoring.
Employees	Information technology training.
Companies	Servers, office automation platform, logical security, communications, Enterprise *Resource Planning* systems, *Customer Relationship Management*.

Source: Research data

Data, innovation and its relation to digital transformation

Today, the limitations of the pre-digital era have disappeared, new business models have been created from the digitization of organizations and the presence of new technologies that change the way we connect, creating new value to customers and generating new products, making this relationship bidirectional. Digital technologies transform the way competitors are seen, not only in the industry of the sector, but also in other industries and that is possible thanks to the data produced from every conversation, interaction or process inside or outside the companies, and that is becoming the lifeblood of all departments and a strategic asset in every business that generates new value (Rogers, 2016), in other words [...] "digital transformation makes the most of data to turn it into knowledge" (Slotnisky, 2016).

For Berghaus and Back (2016), digital transformation is a technology-induced change at many levels of the organization, which includes both the exploitation of digital technologies to improve existing processes and the exploration of innovation that potentially transforms the business model. Traditionally, innovation was focused on a certain product because market testing was difficult, very

costly and for long periods of time, forcing decisions based on analysis and managerial intuition. Today's start-ups[2] have demonstrated that the use of digital technologies allows a very different approach to innovation, with continuous and permanent learning, based on rapid experimentation and the use of prototypes. In the pre-digital era it was very complicated to have feedback from the market from the beginning of the innovation due to costs, geographical scope of the product and research time: today, even at the very launch of the product, it is possible to have information from customers interactively, as a process that saves time, reduces failure costs and improves organizational learning (Rogers, 2016).

For Burkacky et al. (2018), the success of a digital transformation depends on how well it is designed and executed in the areas where it takes place, and it is essential to be clear about its impact on the six stages, as well as to understand the dependency between all of them, as shown in table 2.

The first step in the digital transformation process is to develop a strategy that considers the different new ways in which value can be created with digital technology, and there are a number of disruptions that require thinking about potential new approaches to customer engagement. The second step is at the organizational level, and it will be necessary to incorporate a model with digital initiatives. The third step is to set up projects that use a test and learn approach.

The fourth step for Burkacky et al. (2018), is that digital transformation requires technical capacities that legacy organizations lack, such as cybersecurity and artificial intelligence, among others. The fifth step is to incorporate new digital players into the ecosystem. Finally, organizational culture change is needed to foster understanding and conviction.

[2] The term emerging company or startup was created in 1957 in Silicon Valley and is defined as a recently created company, normally founded by one or several entrepreneurs on a technological base with innovation and a high growth capacity.

Table 2 - Successful digital transformation

ELEMENTS	DESCRIPTION
Digital strategies and segments	How to reach our target customer with digital strategies that give new ways to create value through digital technology.
Organizational structure	Establish archetypes or digital models to follow in the company.
Approach to test-learning	Digital transformation is based on pilot projects and for these to work they must have funding in case of delay in the start of the project, effective work teams, testing protocol and learning based on failures experienced in the past.
Talent and capacities	It refers to the development of motivation strategies for human talent so that they contribute with ideas, creativity or their knowledge in order for the organization to grow.
Digital ecosystem	It is necessary to have technology, providers, cloud servers, platforms as a service.
Cultural change	Encourage change in the culture and mentality of employees and managers by establishing agile ways of working in the organization.

Source: Burkacky et al. (2018)

Digital transformation models

Table 3 presents four models of digital transformation, proposed from the business point of view, with their respective relevant aspects, in order to define a reference framework for the research, which allows analyzing the components of digital transformation.

Table 3 - Comparative table of models applicable in the research

Year	2011	2014	2016	2016
Author	MIT Center for digital business & Capgemini Consulting	Genís Roca RocaSalvatella	David L. Rogers	Joana Sanchez INCIPY
Aspects	Model based on interviews with companies migrating to digital transformation.	Model based on years of experience, in multiple sectors and countries	Model based on a more strategic vision at the organizational level	Incipy study based on governance models and work teams.
Source	Digital transformation: A Roadmap For Billion-Dollar Organizations	Digital maturity report for Peruvian executives	The Digital Transformation: Playbook	Digital Transformation and Innovation

Source: Own elaboration

Digital transformation model: MIT Center for Digital Business and Capgemini Consulting study

The digital transformation model proposed by MIT Center for Digital Business[3] and Capgemini Consulting is based on understanding how digital technology and ubiquitous digital data change the business of large companies in three key pillars: customer experience, operational processes and the business model. The proposed model is based on the exploratory study that involved 157 executives and 50 companies in 15 countries where the digital transformation process underway was highlighted. It is important to highlight that in the research none of the companies in the sample has carried out the digital transformation completely (MIT Center for Digital Business & Capgemini Consulting, 2011).

[3] MIT Center for Digital Business is a research center founded in 1999 that focuses on understanding the impact of technology on value and business and is funded by market-leading companies such as Capgemini, Cisco Systems, General Motors, McKinsey, Google, Hp, Oracle and SAS Institute.

Table 4 - Model MIT Center for Digital Business and Capgemini Consulting

PILLARS	BUILDING BLOCKS OF DIGITAL TRANSFORMATION	
Customer experience	Customer compression	Analytics-based segmentation
		Informed knowledge of society
	Incomes Growth	Digitally enhanced sales
		Predictive Marketing
	Customer contact points	Customer Service
		Consistency across multiple channels
		Self-service
Operational Processes	Digitization process	Improved performance
		New features
	Employee availability	Work anywhere at any time
		Broader and faster communication
		Share knowledge to the community
	Performance management	Operational transparency
		Data-driven decision making
Business Model	Digitally modified business	Increased production or service
		From physical to digital transition
		Digital encapsulation
	New Digital Business	Digital products
		Reshaping organizational boundaries
	Digital globalization	Company integration
		Decision-making authority
		Shared digital services

Source: MIT Center for Digital Business & Capgemini Consulting (2011)

Table 4 details the stages that companies go through to achieve a digital transformation, i.e., through success stories, where changes are analyzed as customer experience, to the analysis of the business models that traditional companies are employing to benefit from digital transformation. The model resulting from the study is divided into 3 pillars that make up 9 building blocks for digital transformation.

Digital transformation model: RocaSalvatella

Digital transformation is a process that integrates new technologies and in which more and more people and devices are incorporated into the immense flow of data and interactions that make up the current internet in all areas of the company, to radically change and improve the scope and performance, redefining the points of contact, its processes and business model, so Cueva (2020), considers the significant points that the author of the RocaSalvatella model forces companies wishing to meet the digital challenge in the digital transformation model based on six axis of cross-cutting impact: strategic vision, processes, customer touch point, organizational culture, service design and business model, as shown in table 5.

Table 5 - The six pillars of a digital transformation

FIELDS	PROCESS CONSIDERATIONS
Vision	It is a transversal axis that accompanies throughout the process, impacting all phases of the process.
The processes	Process mechanization is uneven across all functional areas and digitization is advancing as the benefits of its implementation outweigh the investment costs.
Customer contact points	The population has massive access to the network and the use of mobile devices has favored the levels of interaction.
Organizational culture	Transform people's mindset and organizational culture, promoting the adoption of digital competencies and skills.

Service design	New opportunities that will soon be demanded by the market and the service must be able to improve the proposals that are transferred to the market, for example personalization and geolocation.
Business Model	Reconsider innovation as a business driver to change the value proposition being offered.

Source: Roca (2014)

The strategic vision is to understand the value that digital can bring to the administration and not to continue promoting obsolete structures. Processes are the first path in the transformation, normally the automation phase should be completed and start with a cost-benefit analysis for the digitization of the process. The point of contact with customers is getting closer and closer to digital, so customers must be served at any time, from anywhere and with any device, but a change in organizational culture is required and is surely the main challenge. New realities such as the cloud, predictive processing, the internet of things and Big Data allow to improve the service design and to have as a final goal the business model in the digital transformation process (Cueva Gaibor, 2020).

Digital transformation model: a study by David L. Rogers

Rogers (2016), in his book The Digital Transformation Playbook, argues that rethinking the business for the digital age is based on guidelines for transforming a traditional economy into a digital economy. He argues that [...] "Digital transformation is not about upgrading the technology but about improving the strategic thinking" being necessary to understand that customers are part of the network, competition comes from digital platforms rather than products, data should be considered a strategic asset, innovation should be driven by small experiments and new steps to underpin value, framing these considerations in five strategy domains shown in table 6.

Table 6 - Digital transformation domains

DOMAINS	TRANSFORMATION STRATEGIES
Customers	• Channeling marketing by reinventing it • Path to purchase • Basic behaviors of customer networks
Competition	• Business model platform • Path-to-purchase • Basic customer network behaviors and path-to-purchase • Channel marketing by reinventing it
Data	• Data Value Template • Handling Big Data • Data-driven decision making
Innovation	• Divergent and convergent experimentation • Minimally viable prototype • Expanding routes
Value	• Market value concepts • Pathways out of a declining market • Steps to underpin value development

Source: David L. Rogers (2016)

Digital transformation model: INCIPY

It defines digital transformation as: "[...] The reorientation of the entire organization towards an effective digital relationship model at every touch point of the customer experience", which requires strong leadership to drive change in people, processes and business models; in general, transformation starts with a different way of thinking (Sánchez, 2016). Table 7 shows the four key axis that are defined by the digital transformation model, which implies a more modern and humanized vision.

Table 7 - Key axis of the INCIPY model

AXIS	CONSIDERATIONS	AXIS	CONSIDERATIONS
Vision and leadership	• Culture and digital government • Digital training • Big data and KPIs	**Customer experience**	• Customer knowledge • New sources of income • Customer points of contact
People and processes	• Focused on people • Digital talent attraction • Digitization of processes	**Business Model**	• New digital businesses • Digital globalization • Digital innovation

Source: Own elaboration

The key axis of the INCIPY model represent the main triggers that companies should consider in each of them as a digital strategy. Vision and leadership determine who and how to drive their digital transformation initiatives. Customer experience seeks to redraw the contact with each customer, creating a new experience, being more tangible with the processes that have the greatest impact on the results; finally, companies are changing the way they operate, as much as they create and deliver value to the customer (Calle Herencia, 2022).

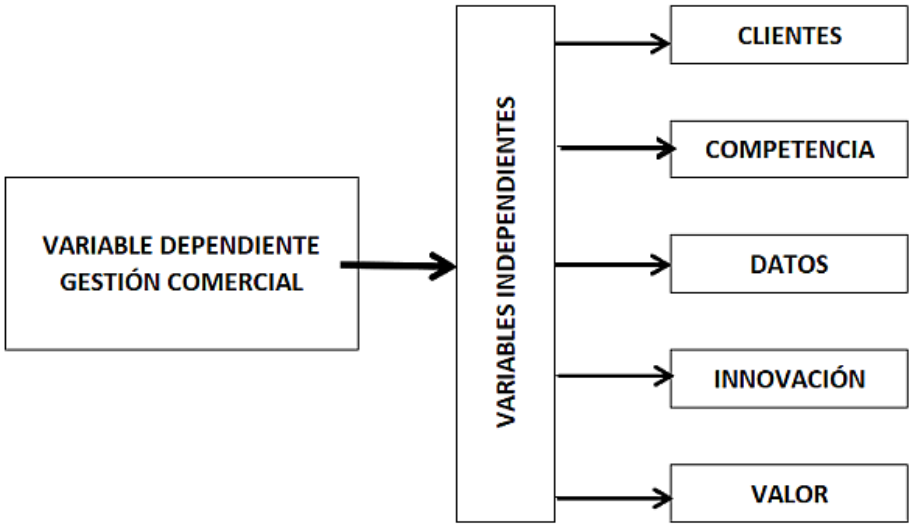
MATERIALS AND METHODS

The methodological approach of this research is based on a qualitative process of structured and predictable patterns, with the aim of describing the relationship of the variables in a non-experimental and cross-sectional study. The methods applied were synthetic analytical and deductive with the objective of explaining, understanding and implementing the transformation domains. The type of study is descriptive because it selects the fundamental characteristics of the internal and external situation of retail sales companies as the object of study, and it is correlational because it associates the empirical variables with the objective of quantifying the relationship between the concepts and the independent variables.

The companies selected for the study of the phenomenon have complied with the indispensable and necessary documentation required by the Superintendence of Companies, Securities and Insurance[4] in the retail sales sector, being its population the city of Babahoyo. The sample is made up of companies that represent 75% of the net sales of the sector belonging to group G4711[5]. The statistical and field technique was applied for data collection, and the main instrument for data collection was the questionnaire with 25 questions, applied with the Likert scale. The IBM SPSS tool was used for the statistical analysis, which showed the most significant aspects of the indicators studied.

Study variables

After the theoretical review, it was identified that David L. Rogers' model simplifies the research because it includes the relevant aspects of the research problem, such as the lack of innovation, the presence of promotions carried out by competitors with better costs, and the need for cultural change in the organization, which are represented by the variables shown in graph 1.



Graph 1 - Research causal variables
Source: Own elaboration

[4] Technical body with administrative, economic and financial autonomy, which oversees and controls the organization, activities, operation, dissolution and liquidation of companies and other entities, under the circumstances and conditions established by law.

[5] G4711: Retail sale of a wide variety of products in stores.

Description of the independent variables applied to the study

- **Customers:** Identifies the strategies used for customer loyalty
- **Competence:** Measures the degree of knowledge with respect to competence involving skills, knowledge, pricing, etc.
- **Data:** Identifies how decisions are made based on data generated by daily transactions
- **Innovation:** Identifies the exhibition of new ideas, new processes and knowledge
- **Value:** Measures the capacity to generate profit under the current strategy

RESULTS AND DISCUSSION

SWOT analysis

The internal and external situation of the supermarkets that are the object of study was analyzed, based on the indicators that are related to the domains of digital transformation presented by David Rogers:

Strengths: Established positioning, qualified personnel, promotion and competitive prices, variety of brands and market experience.

Opportunities: New technologies in the market, ability to analyze data and presence of new markets in which digital transformation strategies can be developed.

Weaknesses: Lack of follow-up in customer service, lack of motivation of customer service personnel, and lack of strengthening of the organizational culture.

Threats: Economic situation of the country, aggressive discounts and promotions by competitors, increased informal competition due to lack of employment.

Level of association of the study variables

To establish the level of association between two variables, the scale of values proposed by Ratner (2009) was used for r values between +1 and 0, which measures the reliability of the instrument based on Pearson's coefficient. Ratner (2009) establishes that a weak positive correlation should be between +0.01 and 0.10, a medium positive correlation should be between +0.11 and +0.50, a

considerable correlation between +0.51 and +0.75, a very strong positive correlation between +0.76 and +0.90 and finally, the perfect positive correlation should be between +0.91 and 1.

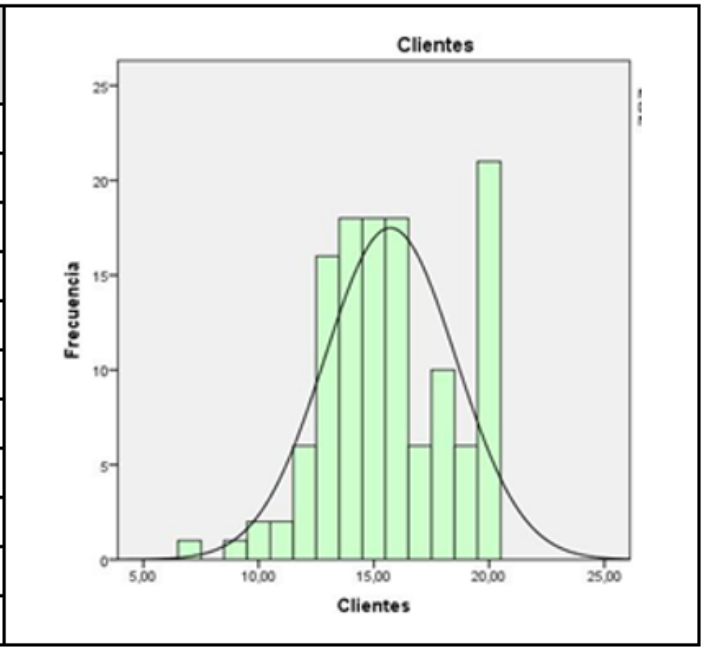
Correlation of client and data variables

The Pearson statistic, after the execution of the program, shows a significance value of 0.836, which establishes that there is a high positive correlation between the variables analyzed, that is, that supermarkets offer their customers the shopping experience, which generates a greater perception of value to the customer, allowing them to make better choices in their purchases, thus increasing satisfaction.

Level of kurtosis in the customer variable

By means of the Kurtosis coefficient it is possible to identify whether there is a high concentration of values (Leptokurtic), a normal concentration (Mesokurtic) or, alternatively, a low concentration (Platykurtic), which present the values of a variable around the central zone of the frequency distribution, where the independent variables with greater relevance to the study are important for the research.

Estadísticos		
N	Válido	125
	Perdidos	0
Media		15,7120
Mediana		15,0000
Moda		20,00
Desviación estándar		2,85063
Varianza		8,126
Asimetría		-,094
Error estándar de asimetría		,217
Curtosis		-,362
Error estándar de curtosis		,430



Graph 2 - Customer variable

Source: Own elaboration

Graph 2 shows the amount of data analyzed from the sample, the value of the asymmetry is -0.964 and indicates that the Client variable has a negative asymmetry because it is above the arithmetic mean and its kurtosis value -0.362 indicates a platykurtic curve because there is a lower percentage of data concentration around the mean, with a variance of 8.126, which indicates a high dispersion of the data analyzed.

Result of the application of the model on the sample

Table 8 presents the result of the research once the transformation model has been applied to all the variables of the object of study, being necessary to weight each indicator and establish a Likert scale for the interpretation of the results and thus obtain a ceiling of 100 %.

Table 8 - Disaggregation of study variables

VD	VI	DIMENSION	WEIGHT	INDICATOR	Total
COMMERCIAL MANAGEMENT	CUSTOMERS	Satisfaction	20	Satisfaction scale	12 %
		Loyalty	10	Percentage of customer growth	6 %
	COMPETENCY	New markets	10	Tastes, preferences, product properties	10 %
		Prices	10	Competent prices	6 %
	DATA	Security	10	Confidentiality and security	6 %
		Decision making	10	Data management	8 %
	INNOVATION	Business models	10	Improved processes	8 %
		Digital technology	10	Level of technological progress	10 %
	VALUE	Value added	10	Customer experience, value generation	6 %
				TOTAL	72 %

Source: Research data

It can be observed that not all indicators are at an acceptable level of efficiency, with only 20% of the indicators standing out with a level of excellence, which are: new markets and the use of digital technology. The indicators that require immediate attention because they are within the "Regular" range are: customer satisfaction and loyalty, prices, security and added value, due to the data collected from users and supervisors, they show that these are aspects that need to be strengthened in order to increase the percentage of loyal customers.

Digital transformation before the pandemic was a parallel option to increase competitiveness, many of its managers went into negativity when facing changes in the processes of their organization. Today, business management and digital technology have become important strategies for companies because it is a way to expand and reach their customers more effectively.

The study was able to answer the research question, which asks how digital transformation models affect the commercial management of the retail sector in times of pandemic, and was answered by identifying a model or framework that allowed establishing the appropriate variables and thus being able to measure each of its indicators. The descriptive, correlational and quantitative study established values for each dimension, identifying the level of maturity in their processes that will allow them to move towards digital transformation.

Focusing on the results obtained, the customer variable was identified as a key element of digital transformation, establishing a direct association with the variables competition, data and value; but an adequate level of association with the innovation variable was not found.

The study was able to establish how competition influences the processes and resources used by users to adapt to new markets. From the results obtained from the surveys, it was determined that supermarket users and supervisors give a high score, according to the Likert scale, to the variable Customer, which contains the dimensions of satisfaction and loyalty, assigning it a value of 18 % out of 30 %, which shows that the customer is a key element for the transformation. The Competency variable obtained a weighting of 16 % out of 20 % due to the fact that the indicators analyzed established similarity of acceptance in what was emphasized at the time of competing.

With respect to the variable Data, a value of 14 % out of 20 % was obtained, considering data management as a necessary factor for decision making, obtaining 100 % in the surveys to supervisors and 100 % to the use of technological tools for data analysis and management. And this is evidenced in the table of results. The Innovation variable obtained a weighting of 18 % out of 20

%, given that the improvement of processes is based on the business models established by the supermarkets, and these are invisible to the perception of customers. The Value variable obtained a value of 6 % out of 10 % due to the fact that innovation is considered as a value generator.

Finally, the elements of digital transformation supported by David Rogers contribute to enhance the commercialization of products in the retail sector, but its implementation must be based on an organizational strategic plan, which will provide greater competitiveness, corporate image and innovation in the market, according to the needs that arise in the market.

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All the authors reviewed the writing of the manuscript and approve the version finally submitted.