第 49 卷 第 6 期
2022 年 6 月

湖南大学学报（自然科学版）
Journal of Hunan University (Natural Sciences)

Vol. 49 No. 6
June 2022

Open Access Article https://doi.org/10.55463/issn.1674-2974.49.6.25

Model of Organizational Management for Manufacturing Companies in Hidalgo, Mexico

María de Lourdes Amador Martínez[1*], Raymundo Lozano Rosales[2], Edgar Iván Roldán Cruz[3]

[1] Ph.D. Student in Administrative Management Sciences, Universidad Politécnica de Tulancingo, Hidalgo, México; Professor-Researcher, Tecnológico Nacional de México, Instituto Tecnológico Superior del Oriente del Estado de Hidalgo, México

[2] Universidad Politécnica de Tulancingo, Investigación y Posgrado, Tulancingo de Bravo, Hidalgo, México

[3] Cátedra CONACYT, El Colegio del Estado de Hidalgo, México

Abstract: Managing companies' integral functioning today is a challenge that should not be isolated since external dynamics require immediate responses to customers' needs. This article aims to generate a proposal for an organizational management model for manufacturing companies in the state of Hidalgo, Mexico. In addition to serving as a tool to achieve competitiveness, it provides integral development and in turn generates a regional development that can be expanded. A methodology with a quantitative, descriptive and explanatory approach was used, by collecting information from 239 economic production units with more than 11 employees in their workforce, to which questionnaires were applied by electronic means. This request was addressed mainly to the managers, supervisors and owners of the organizations, then the information was codified, processed and analyzed. The results evidenced that the organizational management should be composed of twelve of the 20 possible elements: market management, operations, financial, knowledge and human resources, innovation, corporate social responsibility, environmental analysis, strategic management and, finally, trade and sales. It was considered that the above-mentioned elements formed the econometric model that these variables explained organizational management by 92 per cent, according to the value obtained by R-squared adjusted with a value of 0,928210. Therefore, it is presented as a feasible proposal for application in manufacturing companies which can gradually increase their competitiveness influencing development.

Keywords: econometric model, organizational management, manufacturing companies.

墨西哥伊达尔戈制造业公司组织管理模式

摘要：今天管理公司的整体运作是一个不应孤立的挑战，因为外部动态需要立即响应客户的需求。本文旨在为墨西哥伊达尔戈州的制造公司提出组织管理模型的建议。除了作为实现竞争力的工具外，它还提供整体发展，进而产生可扩展的区域发展。采用定量、描述性和解释性方法，从 239 个经济生产单位收集信息，员工人数超过 11 人，并通过电子方式对其进行问卷调查。该请求主要针对组织的经理、主管和所有者，然后对信息进行编码、处理和分析。结果表明，组织管理应由 20 个可能要素中的 12 个组成：市场管理、运营、财务、知识和人力资源、创新、企业社会责任、环境分析、战略管理，最后是贸易和销售。根据经 R 平方调整后的值 0.928210，认为上述要素构成了这些变量对组织管理的解释率为 92%的计量经济学模型。因此，将其作为在制造企业中应用的可行方案，可以逐步提高企业竞争力，影响发展。

关键词：计量经济模型, 组织管理, 制造公司.

Received: March 2, 2022 / Revised: April 1, 2022 / Accepted: May 4, 2022 / Published: June 30, 2022

About the authors: María de Lourdes Amador Martínez, Ph.D. Student in Administrative Management Sciences, Universidad Politécnica de Tulancingo, Hidalgo, México; Professor-Researcher, Tecnológico Nacional de México, Instituto Tecnológico Superior del Oriente del Estado de Hidalgo, México; Raymundo Lozano Rosales, Universidad Politécnica de Tulancingo, Investigación y Posgrado, Tulancingo de Bravo, Hidalgo, México; Edgar Iván Roldán Cruz, Cátedra CONACYT, El Colegio del Estado de Hidalgo, México

Corresponding author Maria de Lourdes Amador Martínez, lamador@itesa.edu.mx

1. Introduction

The companies are going through constant changes worldwide; one of them is a result of the COVID-19 pandemic that began at the end of 2019 in China. The first case was presented in Mexico in February 2020. From this moment on, considering that business responses are immediate and new to survive and compete, processes speed up the organizations' integral management, having the organizational management as a tool that adds to planning the systemic corporate actions that allow the operation [1].

Therefore, the environment is forced to face challenges in the organizational management process with the incorporation of new ways for managing companies because the only thing is the change as such where the organization of specific data through ongoing digitization should be prevailing [2].

Companies must strategize given the constant changes and living in a pandemic that had not been predicted worldwide. Therefore, it is necessary for companies that act as the processors of raw materials in products for different markets to sustain an administration that does not make them sag and disappear. That is to say, they must have solid management that ensures better conditions to remain in the markets. In this sense, it is necessary to envision several options allowing this type of company to remain competitive.

The failure of companies can be multifactorial; with data from [3] and [4], 75 percent of companies failed in the first two years. Therefore, it is important to identify why these companies are closing their doors, with administration, market, and financial aspects being the main causes [4]-[5]. In addition to problems with inputs and production issues, the lack of financing indicates that it is caused by errors in strategies and the selection of person, resistance to change, and a deficient operation [6]-[7].

This makes Organizational Management an integral tool that seeks to contribute to the activities carried out and thereby raises the levels of competitiveness of organizations, which leads to keeping them in the market. Several authors address and present models that generate better organizational conditions. Therefore, the present paper answers the following question: What factors generate an organizational management model that means an opportunity for manufacturing companies in the state of Hidalgo, Mexico, and add to keep them in the market and thus position themselves as an engine of regional development?

According to [8], the transformation sector, including the manufacturing industry, has become an important factor in achieving the empowerment of economies at the global level in recent times. This situation puts companies belonging to this category with the prevailing need to be able to work continuously on strategies that allow them to continue being an engine of development for the places where they are.

In this sense, it is identified that the manufacturing sector that generates most of the world's investment in research and technological development has the greatest productive chains and indirect employment-generating capacities. Furthermore, based on its own supply needs, it promotes the development of new technologies applied to processes and products that all productive activities can take advantage of ECLAC [8].

Regarding the impact or benefit, the present study seeks to generate an information system with the central elements of organizational management that the manufacturing companies of Hidalgo, Mexico require, as a development proposal in the organizations of the entity, which contributes to generating information for entrepreneurs and the government since at the end a model is presented that indicates the proposal for manufacturing companies generating networks of collaboration between companies, education and government institutions that can contribute to gradually increasing competitiveness, whereas empirically it is known that manufacturing enterprises lack the tools to manage innovation, research, and development, which can be a process that promotes their development and growth.

Therefore, it is important to diagnose and measure organizational management elements, which implies a research process to obtain validated and reliable information for companies' decision-making.

In the same way, this research will contribute to the generation of knowledge in the existing literature on the importance of systemic factors of Organizational Management in business competitiveness. Its novelty is in generating specific information on the manufacturing companies of Hidalgo, Mexico. Such information is current for Organizational Management, its measurement, the strategies used as part of that process, the variables or characteristics that influence their development, to generate information that allows for identification of their current situation and making decisions focused on the strategic development and competitive level of manufacturing companies.

Thus, it is important to stress that the work is important given that the business sectors which require further innovative development and change are: manufacturing, primary, and services [9], so this research focuses on analyzing the type of strategy and organizational management that companies that belong to the manufacturing industry of the state of Hidalgo, to identify what they need in order to generate an

organizational management model that includes the holistic factors from the perception or point of view of those who are embedded every day in the dynamics and business problems (personnel)in order to identify the factors to be considered in management, in order to trigger regional development.

2. Literature Review

2.1. Organizational Management

Organizational Management has several concepts to understand each other better. In the first instance, we take the definition [10], which indicates that organizational management is related to the possibility of achieving objectives, including productivity, working conditions, and the development of the people who lead to generating individual performances and evaluating the organization as a whole to appreciate its effectiveness. On the other hand, management is framed in structure and action measured in the economic development of the sociological and economic environment in which it is circumscribed [11]. However, it depends on the sociological dimension that occurs in the social system, in the same vein [12]. Furthermore, organizational management is defined as activities related to human capital and the company itself [13]. Management must be carried out in a continuous and changing manner to improve the process. Finally, according to [14], management is synonymous with administration and means an institutional, global and inclusive function of all the efforts and sets of an organization. Therefore, the latter definition refers to management integrating holistic elements for the organization's functioning.

2.2. State of the Art

It is important to know organizational management. However, there is still a gap that indicates precisely the steps to be followed, which is why there are authors who have conducted research that sought to obtain a way to measure organizational maturity, that is, the variables that make efficient organizational management, the type of study was qualitative, where articles were searched in databases such as Scoup, Science DIRECT, Google Scholar and Taylor & Francis Group that addressed organizational management from 2000 to 2019, the main findings indicate that the nine variables identified as those that measure organizational management are: culture, risks, organizational climate, improvement, monitoring and control, prevention, training, change, health and safety at work and leadership and commitment [15].

In addition, integrates information on management systems that are indispensable tools for the organizational management resulting from the pandemic generated by COVID-19, with the result that the human capital-related part is the primary element for the achievement of objectives, since it becomes a fickle element by the fact of getting sick, as well as being able to be transmitters, which leads the human to have unfavorable conditions such as demotivation, anxiety among others, on the other hand, it is indicated that the flexibility of work with the use and implementation of information technologies add to generate benefits in the organization, always looking for better conditions based on results, through teamwork, process generation and designs and generate new products, services, with new ways of tracking results, perform management according to productivity, implementation of renewed business models that add to faster delivery of products to customers, Therefore, this research is considered relevant because it gives new areas of opportunity to improve and increase the productivity of organizations considering some elements [16].

In that sense, with the premise that it is no longer enough to work with financial indicators, as they do not form an overall picture of the situation at the enterprises, as a tool to improve efficiency and competitiveness, the authors carried out exploratory and descriptive research with the review of scientific databases. Furthermore, they also compared quantitative and qualitative measures, obtaining a result that the variables most used for this purpose are customer satisfaction, quality, innovation, satisfaction, work climate, interpersonal conflicts, the perception of interest groups, and leadership, as subjective variables. Regarding the objectives, it was obtained that the main variables are sales, market share, financial indicators, cash flows, investment in research, and productivity, among others [17].

In this sense, make an exploratory theoretical review to identify the factors that influence the competitiveness of the integration of companies, considering data from Europe, Asia and Latin America and as a result identified that there are several elements that contribute to both competitiveness and organizational integration or management, first as a factor of competitiveness 23 variables were considered within the most relevant are: structure and cooperation between companies, marketing management, innovative production technology, integrated and systemic management strategies, labor and human capital policies, financial management and availability of costs and raw materials relating to the relationship with suppliers, these variables are more frequent, on the other hand, with regard to the organizational integration that can be understood as organizational management the ones that have the greatest presence are, Management and governance of strategic relations between companies, management and coordination within the company, quality management systems, human capital management, efficiency and re-engineering of processes and knowledge management, situation that manages to broaden the panorama to define an organizational management with a lot of

possibilities that lead as such to business competitiveness [18].

On the other hand, it is imperative that the different conceptions can be identified to understand the models and that in constructing them they add knowledge generation and thus can indicate the processes to be followed for the achievement of organizational objectives. In this sense, the conception [19] is taken up again, where it indicates that they are instruments for the scientific context since they are used for the practical application of some theories. Although they are not to the measure of all the objects that they mention they are source of information on the performances. In the same sense, they indicate that these representations serve precisely to be able to understand and also study the scientific theories represented by the models. In addition, the information indicating that the purpose of the models is to describe, explain and predict phenomena that occur day by day. These descriptions are not unique, since several of them can be made and with it each elaborated model refers to a specific aspect. They also are not static, because they can change over time according to the realities. And finally, the statement of a great writer is taken up which indicates that the models have the function of explaining and predicting or anticipating certain tangible phenomena and it is necessary to review them to take as a reference in the area under study [19]-22].

3. Methods

This research is quantitative, cross-sectional, and explanatory. The total population of manufacturing companies in the state of Hidalgo was considered. According to the Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography (INEGI) [23], entities with more than 11 persons belonging to the company were included. The data obtained was 625, represented by N to collect information on employees' perceptions, including supervisors and managers. Stratified sampling was carried out because several populations (subsectors) are part of the total population (sector). Each of these has different numbers of companies that make up it. As a first step, the general sample was calculated from the formula of finite populations, resulting in *n* equal to 239.

After obtaining the value of the general sample, stratified sampling was carried out through probabilistic sampling. The sample of the total population (239) was divided by the total number of companies established as the target population that make up the subsectors of the manufacturing or industrial sector (625), according to data from the Statistical Directory of Economic Units (DENUE). This resulted in a value of 0,3824 representing the sample for each stratum or subsector to obtain the numerical total of companies taken to collect the information.

Next, 239 questionnaires composed of interviewees' sociodemographic data and the organization's structural factors were analyzed. Then, 185 items were assessed by a 1-5-point Likert scale having 20 explanatory dimensions to define the organizational management. These dimensions included innovation, associativity, communication, strategic direction, material resources, climate, and organizational culture, motivation, organizational structure, working day flexibility, human capital management, environment analysis, trade and sales, teamwork, operations management, logistics, leadership, financial management, knowledge management, productivity, and corporate social responsibility. The information was collected and stored in Google Forms by telephone, mail, and in situ. Then the database was downloaded and processed in Excel, and the variables (dimensions) were calculated according to the items identified in SPSS version 25. Later we worked with descriptive statistics by dimensions that were transferred to the EViews-10 program, where we calculated the econometric model using the least-squares method.

4. Results

To characterize manufacturing companies using the information collected through the questionnaire, it was possible to identify primarily that the predominant gender was the masculine one since the men made up more than half with about sixty percent. This situation indicated the prevalence of the participation of this gender. Furthermore, it was identified that the employees aged 36 to 45 predominated in the sample with 43 percent. In addition, regarding their marital status, it was identified that 64 percent were married. This information can describe the profile of the interviewees in general terms.

Concerning the companies' structural information, it was possible to identify that 78 percent are small (it should be noted that micro-companies with fewer than ten persons were not considered for the present investigation), and only three percent are big. Finally, in this section, it was possible to identify that the age of the organizations varies for the most part between the year and the five years, given that only eight percent of the companies that were interviewed turned out to indicate that they have more than sixteen years in operation, as shown in Table 1.

Table 1 Frequency distribution of sociodemographic variables

Variable			**Manufacturing company**
Gender	Male	Frequency	142
		Percentage	59.6%
	Female	Frequency	97
		Percentage	40.4%
Age	18 a 25 years	Frequency	5
		Percentage	2%
	26-35 years	Frequency	54

Variable			Manufacturing company
		Percentage	23%
	36-45 years	Frequency	103
		Percentage	43%
	46-55 years	Frequency	33
		Percentage	14%
	56 or more	Frequency	44
		Percentage	18%%
Marital Status	Single (a)	Frequency	38
		Percentage	16%
	Married (a)	Frequency	154
		Percentage	64%
	Free Union	Frequency	42
		Percentage	18%
	Widower	Frequency	5
		Percentage	2%
Company Size	Small (11-50 people)	Frequency	187
		Percentage	78%
	Medium size (51-250 people)	Frequency	45
		Percentage	19%
	Large (251 or more people)	Frequency	7
		Percentage	3%
Company seniority	Less than a year	Frequency	33
		Percentage	13.8%
	From one to three years	Frequency	62
		Percentage	25.9%
	Four to five years	Frequency	79
		Percentage	33.1%
	Six to ten years	Frequency	29
		Percentage	12.1%
	From eleven to fifteen years	Frequency	16
		Percentage	6.7%
	More than ten years	Frequency	19
		Percentage	8%
Total		Frequency	239
		Percentage	100%

Then with the information generated and considering eighteen variables measured with the data collection instrument where they were asked about: innovation; communication; teamwork and associativity; efficient organization; available material resources; human capital; organizational climate and culture; motivation; financial resources; corporate image; working hours; activities developed or job description; social responsibility, environment, business transactions, management and command structure, considered elements that can generate efficient performance in organizations. Therefore, the interviewees were asked to indicate which ones have greater weight in the company's day-to-day organization. Subsequently, information was integrated, processing the database with the answers to generate an econometric model to identify which of the variables included can better explain the organizational management itself, which is the utopian state of the organization, to remain in the market and generate competitiveness, reaching the explanation through the following equation:

$$GESTORG = \beta1*GESTM + \beta2*INNOV + \beta3*GESTF + \beta4*GESTH + \beta5*ENT + \beta6*GESTC + \beta7*DIREST + \beta8*GESTO + \beta9*RSE + \beta10*ESTORG + \beta11*ASO + \beta12*VTAS + C \quad (1)$$

where:
GESTORG - organizational management;
GESTM - market management;
INNOV – innovation;
GESTF - financial management;
GESTH - human management;
ENT - analysis of the environment;
GESTC - management of knowledge;
DIREST - strategic direction;
GESTO - management of operations;
CSR - corporate social responsibility;
ESTORG - organizational structure;
ASO – associativity;
VTAS - trade and sales.

From the above, it can be identified then that seeking the expression of the elements or factors of Organizational Management is achieved to have an explanation of 92 percent with the following components: market management; innovation; financial management; human; knowledge; operations; environmental analysis; strategic management; corporate social responsibility; organizational structure; associativity and finally trade and sales, since this explanation has the value of R-squared adjusted: 9282 with a probability of 0,00 situation that leads to visualizing that the implementation of organizational strategies in the indicated areas will be able to stimulate efficient organizational management for the manufacturing companies of the state of Hidalgo, Mexico, which leads them to be competitive and remain in the market, as shown in Table 2.

Table 2 Econometric model of organizational management

Dependent Variable: Organizational Management				
Observations: 239				
Variable	**Coefficient**	**Standard Error**	**Valor t**	**Probability**
GESTM - market management	0.079632	0.006104	13.04522	0.0000
INNOV - innovation	0.075449	0.005817	12.96937	0.0000
GESTF - financial management	0.060746	0.005417	11.21403	0.0000
GESTH - human management	0.083883	0.006155	13.62917	0.0000
ENT - analysis of the environment	0.077919	0.005366	14.52082	0.0000
GESTC - management of knowledge	0.086479	0.006044	14.30813	0.0000
DIREST - strategic direction	0.073931	0.005247	14.09004	0.0000
GESTO - management of operations	0.083616	0.005652	14.79374	0.0000
CSR - corporate social responsibility	0.086312	0.005905	14.61761	0.0000
ESTORG - organizational structure	0.063785	0.006055	10.53366	0.0000
ASO - associativity	0.081157	0.005820	13.94544	0.0000
VTAS - trade and sales	0.083725	0.005726	14.62116	0.0000
C	0.206808	0.062083	3.331141	0.0010
R-square	0.931830	R-squared adjusted		0.928210
F-statistical	257.4352	Prob (F-statistical)		0.000000

Subsequently, to present information clearly to

employers, a diagram was worked out to represent the model with the twelve explanatory factors of the Organizational Management for the manufacturing companies in the state of Hidalgo, as a contribution to the knowledge and understanding of the proposal for decision-makers as can be seen in Figure 1.

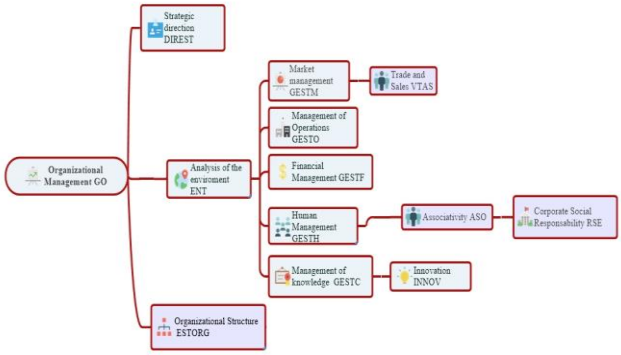

Fig. 1 Organizational management model

5. Discussion

Despite the internal differences in the manufacturing companies of the state of Hidalgo, this study was able to identify with the precision greater participation of males. Therefore, there is an opportunity for this type of organization to increase women's participation gradually. Furthermore, since most people are between 26 and 45 years old, this situation indicates that people of mature age are the main players in the development of management activities. The above is reaffirmed by identifying that most people are married, indicating an element of stability in their lives.

On the other hand, regarding the companies' size, although the study omitted to work with micro-sized companies, even though eighty percent of the interviewed companies are small, that adds to the theory of some authors that indicate that the majority of companies in Mexico is between micro and small. And finally, concerning seniority, organizations have no longevity; rather, their timespan in the market reaches a maximum of five years, so strategies are considered necessary to strengthen their presence in the market and raise their levels of permanence.

Undoubtedly, it is noteworthy that the econometric model generated emphasizes elements of financial management, human, knowledge, market, and operations as a basis for developing efficient organizational management, coupled with other elements that add up as an appropriate direction. Moreover, the analysis of the environment can always impact positively or negatively. Therefore, it must be monitored for effective decision-making, with innovation processes that allow a solid structure to market products manufactured with an image positive image on the outside elements that all the companies of the turn must start looking for the continuous improvement.

In this sense, the research is related to some publications [10] integrating the material resource elements, human, financial, and other information as central elements of effective management in achieving customer satisfaction. It also agrees with the findings indicating that management is linked to human and intellectual capital as an important structure of the organization proposing not to have an isolated human capital since it is a preponderant piece [24]. In the same sense, organizational management generally integrates the administrative process for achieving objectives accompanied by external audit processes. This statement adds to the understanding that they are multivariate elements that make effective organizational management [25].

6. Conclusion

The objective of the research was to determine the factors that could explain the organizational management of manufacturing companies in the state of Hidalgo to become competitive entities, a situation that was achieved by identifying 12 independent variables: Market Management, Innovation, Financial Management, Human Management, Environment Analysis, Knowledge Management, Strategic Management, Operations Management, Corporate Social Responsibility, Organizational Structure, Associativity, and Commerce and sales that can lead organizations to direct their steps towards competitiveness, so they are considered explanatory elements of Organizational Management.

The elements to be considered are those with greater weight for the people in managerial positions currently inserted in the organizations. In contrast, they, therefore, have the practical elements to support the construction of the model. As a proposal for manufacturing companies, it is important to mention that the model is a benchmark to work integrally in organizations since the processes must align with the client's requirements. Therefore, they can be dynamic and with it will evolve in the proposals.

The model presented is a tool company can consider for daily management. With it, they can identify that the daily operation is not only the result of a single department or area. This supports the theory of systems or integral operation that helps organizations remain in the market.

On the contrary, these findings can be contrasted with the results of companies from a sector other than manufacturing. For this reason, it is proposed that as a line of future research in the first instance, the information be supplemented with the quantitative approach research and then make the study in other organizations.

The proposed model adds knowledge generation. It is novel in a scientific way as it supports entrepreneurs and decision-makers in the various areas of the organization since it aims to search for being competitive and remain in the market. Furthermore, the

model is useful as it integrates holistic and integral aspects from the perspective of entrepreneurs who participate in daily activities and, therefore, consider that they are the most relevant to generating efficient organizational management in organizations. Therefore, being a differentiated and integral model concerning those in the market can generate the guideline to develop and implement internal and external strategies that join efforts to make companies competitive and remain in the market. Moreover, the model should not be static since it can subsequently integrate additional elements that can be added gradually to strengthen itself following internal and external dynamism. With this, it can be granted real utility in manufacturing enterprises for its immediate applicability.

Finally, it is considered that the integration of information is an approach to reality. Although it is limited to being the result of a specific sample and not to all companies, the bias that may have been generated in respondents' responses is also included as another limitation.

References

[1] PRIETO PULIDO R. Organizational management. Towards a true transformation, survival and competitiveness. *SUMMA. Disciplinary Journal in Economic and Social Sciences*, 2021, 3(2): 1-3. https://doi.org/10.47666/summa.3.2.21

[2] MARTÍ-NOGUERA JJ. Digital society: organizational management after COVID-19. *Revista Venezolana de Gerencia (RVG)*, 2020, 25(90): 394-401 https://www.redalyc.org/articulo.oa?id=29063559021

[3] ASPIRIA. *8 out of 10 Mexican companies fail in the first two years. What group are you in?* 2021, Obtained from Aspiria: https://blog.aspiria.mx/2020/03/24/8-de-cada-10-business-failure in-mexico/

[4] FAILUREINSTITUTE. *Why do businesses fail?* 2021, Obtained from Failure Institute: https://www.fuckupnights.com/blog/where-businessfailure/

[5]. ARELLANO GRAJALES, B, & BOCANEGRA GASTELUM C. Mexican artisanal textile export e-SMEs, in times of virtual integration and digital economies. *Indiciales*, 2021, 1(1): 77-93. https://doi.org/10.52906/ind.v1i1.12

[6] CHOI E K. The real reason why most businesses fail (and what to do about it*). Entrepreneur*, 14.05.2021. https://www.entrepreneur.com/article/365633

[7] PERILLA R B, & GONZÁLEZ M B. Organizational innovation examined from the theories of organizational design, change, cognition and learning. *ESPACIOS*, 2021, 42(02): 84-100. DOI:10.48082/espacios-a21v42n02p08

[8] ECLAC. The manufacturing industry continues to be decisive in the development processes of the region. 2017: https://www.cepal.org/es/noticias/la-industria-manufacturera-sigue-siendo-decisiva-procesos-desarrollo-la-region-dice-cepal

[9] OECD/EUROSTAT. *Oslo Manual 2018: Guidelines for collecting, reporting and using data on innovation*, fourth edition. Measurement of scientific, technological and innovation activities. OECD publications, Paris/Eurostat, Luxembourg, 2018 https://www.oecd-ilibrary.org/science-and-technology/oslo-manual-2018_9789264304604-en

[10] SERRANO-TAMAYO M A, PÉREZ-RAMÍREZ, W A, MORENO-PINO, M R, et al. Organizational management model from a constructivist perspective in the Cuban context. *Industrial Engineering*, 2021, 42(2): 175-204. https://rii.cujae.edu.cu/index.php/revistaind/article/view/1078

[11] DE CAMARGO FIORINI P, SELES B M R P, et al. Management theory and big data literature: From a review to a research agenda. *International Journal of Information Management*, 2018, 43: 112-129.

[12] RAMREZ C Y, & RAMIREZ P. *Fundamentals of Administration.* Bogotá: University Texts, 2016

[13] SEGREDO PÉREZ A M. Organisational development. A view from the academic field. *Educacion Medica*, 2016, 17: 3-8. https://doi.org/10.1016/j.edumed.2015.09.002

[14] MÜNCH, L. *Administration. Organizational management, approaches and administrative process.* Pearson Education, Mexico. 2014.

[15] GUTIÉRREZ J A. *Theoretical variables for measuring the maturity of organizational management* (Specialization thesis). Santo Tomás University. Bogotá, Colombia, 2020.

[16] RODRÍGUEZ-ROJAS Y L. Standardized management systems and their contribution to the control of the organizational effects generated by COVID-19. *Signs, Management Systems Research*, 2021, 13(2): 12-20. https://doi.org/10.15332/24631140.6661

[17] BARRADAS M, RODRÍGUEZ J, and MAYA I. Organizational performance. A theoretical review of its dimensions and form of measurement. *Revista De Estudios En Contaduría, Administración E Informática*, 2021, 10(28): 21-40. https://recai.uaemex.mx/article/view/15678

[18] ROMERO D, PERTUZ V Y, & OROZCO E. Determinants of competitiveness and organizational integration: exploratory systematic *review. Technology Information*, 2020, 31(5): 21-32. https://dx.doi.org/10.4067/S0718-07642020000500021

[19] GIERE R. *Science without laws*. Chicago: University of Chicago Press, 1999

[20] ADÚRIZ-BRAVO A, and ARIZA Y. A weekly characterization of scientific models for school science. *Biography*, 2014, 7(13): 25-34. https://doi.org/10.14483/23448350.12288

[21] OH P S. and OH S J. What Teachers of Science Need to Know about Models: An overview. *International Journal of Science Education*, 2011, 33(8): 1109-1130. https://doi.org/10.1080/09500693.2010.502191

[22] BUNGE M. *Method, Model and Matter*. Dordrecht: Springer, 1973, 91-113 https://doi.org/10.1007/978-94-010-2519-5

[23] National Institute of Statistics and Geography (INEGI). Statistical Directory of Economic Units

[24] JIMÉNEZ RODRÍGUEZ L, & GAMBOA-SUÁREZ R. Human and intellectual capital as a catalyst for organizational management. *FESC World*, 2018, 8(15): 83-89. Available from https://www.fesc.edu.co/OJS/index.php/mundofesc/article/viewww/255

[25] MONTES SALAZAR C A, PORRAS CUELLAR C, MUÑOZ VALLE R, & DEXTRE FLORES J C. Internal Audit and Organizational Management. *Proyecciones*, 2017, (12). Available from https://revistas.unlp.edu.ar/proyecciones/article/view/6535

参考文:

[1] PRIETO PULIDO R. 组织管理。迈向真正的转型、生存和竞争。总结。经济社会科学学科学报, 2021, 3(2): 1-3. https://doi.org/10.47666/summa.3.2.21

[2] MARTÍ-NOGUERA JJ。数字社会：新冠肺炎之后的组织管理。 委内瑞拉管理杂志(房车), 2020, 25(90): 394-401 https://www.redalyc.org/articulo.oa?id=29063559021

[3] 阿斯皮里亚。10 家墨西哥公司中有 8 家在头两年倒闭。你在哪个组？2021，从阿斯皮里亚获得：https://blog.aspiria.mx/2020/03/24/8-de-cada-10-business-failure in-mexico/

[4] 失败研究所.。企业为什么会失败？2021，从失败研究所获得：https://www.fuckupnights.com/blog/where-businessfailure/

[5] ARELLANO GRAJALES, B 和 BOCANEGRA GASTELUM C. 在虚拟一体化和数字经济时代，墨西哥手工纺织品出口电子中小企业。索引，2021, 1（1）：77-93。https://doi.org/10.52906/ind.v1i1.12

[6] CHOI E K. 大多数企业失败的真正原因（以及如何应对）。企业家，2021, 5 月 14 日。https://www.entrepreneur.com/article/365633

[7] PERILLA R B, 和 GONZÁLEZ M B. 从组织设计、变革、认知和学习的理论检验组织创新。空间，2021，42（02）：84-100。DOI:10.48082/espacios-a21v42n02p08

[8] 拉加经委会。制造业继续在该地区的发展进程中发挥决定性作用。2017：https://www.cepal.org/es/noticias/la-industria-manufacturera-sigue-siendo-decisiva-procesos-desarrollo-la-region-dice-cepal

[9] 经合组织/欧盟统计局。奥斯陆手册 2018：收集、报告和使用创新数据的指南，第四版。科学、技术和创新活动的衡量。经合组织出版物，巴黎/欧盟统计局，卢森堡，2018, https://www.oecd-ilibrary.org/science-and-technology/oslo-manual-2018_9789264304604-en

[10] SERRANO-TAMAYO M A、PÉREZ-RAMÍREZ、WA、MORENO-PINO、MR 等。古巴背景下建构主义视角下的组织管理模式。工业工程, 2021, 42(2): 175-204。https://rii.cujae.edu.cu/index.php/revistaind/article/view/1078

[11] DE CAMARGO FIORINI P，SELES B M R P，等。管理理论和大数据文献：从回顾到研究议程。国际信息管理杂志，2018，43：112-129。

[12] RAMREZ C Y 和 RAMIREZ P. 管理基础。波哥大：大学课本，2016

[13] SEGREDO PÉREZ A M. 组织发展。学术领域的观点。医学教育，2016，17：3-8。https://doi.org/10.1016/j.edumed.2015.09.002

[14] MÜNCH, L. 行政管理。组织管理、方法和行政流程。皮尔逊教育，墨西哥。2014。

[15] GUTIÉRREZ J A. 衡量组织管理成熟度的理论变量（专业论文）。圣托马斯大学。哥伦比亚波哥大，2020.

[16] RODRÍGUEZ-ROJAS Y L. 标准化管理系统及其对控制 新冠肺炎产生的组织影响的贡献。标志，管理系统研究，2021，13（2）：12-20。https://doi.org/10.15332/24631140.6661

[17] BARRADAS M、RODRÍGUEZ J 和 MAYA I. 组织绩效。对其尺寸和测量形式的理论回顾。会计、管理和信息学研究杂志，2021, 10(28): 21-40。https://recai.uaemex.mx/article/view/15678

[18] ROMERO D、PERTUZ V Y 和 OROZCO E. 竞争力和组织整合的决定因素：探索性系统评价。技术信息，2020, 31(5): 21-32。https://dx.doi.org/10.4067/S0718-07642020000500021

[19] GIERE R. 没有法律的科学。芝加哥：芝加哥大学出版社，1999.

[20] ADÚRIZ-BRAVO A 和 ARIZA Y. 每周对学校科学科学模型的表征。传记，2014，7（13）：25-34。https://doi.org/10.14483/23448350.12288

[21] OH P S. 和 OH S J. 科学教师需要了解的关于模型的知识：概述。国际科学教育杂志, 2011, 33(8): 1109-1130. https://doi.org/10.1080/09500693.2010.502191

[22] BUNGE M. 方法、模型和物质。多德雷赫特：施普林格，1973，91-113 https://doi.org/10.1007/978-94-010-2519-5

[23] 国家统计和地理研究所（稻木）。经济单位统计名录

[24] JIMÉNEZ RODRÍGUEZ L 和 GAMBOA-SUÁREZ R. 人力和智力资本作为组织管理的催化剂。FESC 世界，2018，8（15）：83-89。可从 https://www.fesc.edu.co/OJS/index.php/mundofesc/article/viewww/255 获得

[25] MONTES SALAZAR C A、PORRAS CUELLAR C、MUÑOZ VALLE R 和 DEXTRE FLORES J C。内部审计和组织管理。预测，2017，（12）。可从 https://revistas.unlp.edu.ar/proyecciones/article/view/6535 获得