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*Scientific articles*

## **Evaluación de prácticas enfocadas a la administración de proyectos en una muestra de medianas empresas duranguenses**

***Project management practices evaluation in medium-sized companies in Durango***

***Avaliação de práticas focadas em gestão de projetos em uma amostra de empresas de médio porte em Durango***

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## Resumen

Esta investigación tiene el objetivo de responder si las medianas empresas han implementado prácticas enfocadas a la Administración de Proyectos en sus procesos, a la vez que se analizan las razones que explican su nivel de adopción. Para ello, se mencionan las generalidades de las pequeñas y medianas empresas (PYMES) y se identifican las limitaciones que interfieren en su desarrollo. Asimismo, se presenta un breve contexto sobre la presencia de medianas empresas en la ciudad de Durango, las cuales serán el objeto de estudio. También, se hace referencia a la Administración de proyectos y su importancia en estas organizaciones. Derivado de esto, se crearon dos instrumentos enfocados a conocer el nivel de adopción de prácticas de gestión de proyectos y el impacto de las limitantes que comúnmente interfieren en el crecimiento de estas entidades. Dichos instrumentos fueron validados mediante el método Delphi y el piloteo en la muestra seleccionada. Este proceso arrojó un alfa de Cronbach de 0.9, lo cual da paso a la aplicación del instrumento en la muestra. A partir de ello se detectó que el 72% de las empresas analizadas al menos una vez, han implementado prácticas dirigidas a la gestión de proyectos; estos resultados subrayan la necesidad de fortalecer las estrategias de capacitación, innovación y planeación estratégica en las PYMES, a fin de mejorar su capacidad para implementar prácticas efectivas de gestión de proyectos en un entorno desafiante como el del año 2024.

**Palabras claves:** Gestión de proyectos; problemáticas en PYMES

## Abstract

This research aims to evaluate if medium-sized companies have implemented Project Management practices in their processes and the reasons behind their level of adoption. To this end, the generalities and limitations of a sustainable development of small and medium-sized enterprises (SMEs) are mentioned. Likewise, a brief context about the presence of medium-sized companies in Durango city and the importance of Project Management is provided and will be addressed as the object of study. Therefore, two instruments were created to know the level of adoption of project management practices and the impact of the limitations that commonly interfere with the growth of these entities. These instruments were evaluated using the Delphi and piloting in the selected sample method, validating the application of these instrument with a result of a Cronbach's alpha of 0.9. These results allowed to detected that 72% of the companies analyzed have implemented practices aimed

at project management at least once. It is concluded that in 2024 there is still a challenging outlook for small and medium-sized companies in terms of training, innovation and strategic planning.

**Keywords:** Project Management; current SME's challenges.

## Resumo

Esta pesquisa tem como objetivo responder se empresas de médio porte têm implementado práticas focadas em Gestão de Projetos em seus processos, analisando os motivos que explicam seu nível de adoção. Para tanto, são mencionadas as generalidades das pequenas e médias empresas (PMEs) e identificadas as limitações que interferem no seu desenvolvimento. Da mesma forma, é apresentado um breve contexto sobre a presença de empresas de médio porte na cidade de Durango, que será objeto de estudo. Também é feita referência à Gestão de Projetos e sua importância nessas organizações. Como resultado, foram criados dois instrumentos para determinar o nível de adoção de práticas de gerenciamento de projetos e o impacto das limitações que comumente interferem no crescimento dessas entidades. Esses instrumentos foram validados pelo método Delphi e pilotagem na amostra selecionada. Esse processo gerou um alfa de Cronbach de 0,9, o que levou à aplicação do instrumento na amostra. A partir disso, detectou-se que 72% das empresas analisadas pelo menos uma vez implementaram práticas voltadas à gestão de projetos; Esses resultados ressaltam a necessidade de fortalecer estratégias de treinamento, inovação e planejamento estratégico nas PMEs, a fim de melhorar sua capacidade de implementar práticas eficazes de gerenciamento de projetos em um ambiente desafiador como o de 2024.

**Palavras-chave:** Gestão de projetos; Problemas nas PME.

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## Introduction

### Small and medium-sized enterprises

Small and medium-sized enterprises (SMEs) are recognized as sources of job creation (Ángel and Lozano, 2018), positively impacting the employability levels of the population (Enríquez, Adame and Camacho, 2010), industrial development and social entrepreneurship (Montalvo, Eylin and López, 2021); however, it is of great interest to analyze the high dropout rates that these entities present in their first years of life, given that 80% fail to overcome the well-known *valley of death*, that is, two years of presence in the market (Ángel and Lozano, 2018) because the resources to survive are limited, which negatively interferes with the response that the SME provides to customer demands (Mazzei, 2014).

Although SMEs represent 95% of the companies in the market (Cisneros, Torres, & Flores, 2017) and exert a great influence on the economic development of the Mexican population (García, Adame, & Sánchez, 2017), they face challenges such as the increasingly globalized environment that demands higher levels of productivity and competitiveness in companies that generate goods and services (Cedillo, 2010). For example, in terms of productivity, the Mexican medium-sized company reaches 60% compared to large companies (García, Adame, & Sánchez, 2017) due to the lack of investment in innovation, staff training, and quality improvement, which negatively impacts their performance within the business context (García, Adame, & Sánchez, 2017).

Despite these advantages, such as their flexibility and ease of adaptation (Cisneros, Torres and Flores, 2017), SMEs require solid strategic planning and the active collaboration of their members to face the productivity and competitiveness challenges of the globalized environment. Likewise, if the entrepreneur has a strategic vision, he will easily be able to transmit his knowledge, goals and policies to the members of the company (Ángel and Urbano, 2016). Although it is also important that he identifies the key success factors and makes them an unmatched seal for the competition, supported by stable strategic planning and the active collaboration of its members (García, Adame and Sánchez, 2017).

### Limitations present in SMEs

Nowadays, SMEs face an increasingly saturated environment with new requirements from consumers, which is why it is essential that these entities have techniques that allow them to adapt to the environment in a timely manner (García, Adame and Sánchez, 2017); in

light of this, Cedillo (2010) mentions that, for a company to appear in the market, it is necessary to focus its resources on two variables: 1) the administration of human resource training and 2) innovation in production processes, although he also highlights that few manage to achieve such objectives since macroeconomic conditions interfere with their development and achievement of objectives.

Given the above, various critical areas are highlighted in which SMEs face significant limitations such as access to financing, strategic planning and training; these and other problems that gain relevance in the SME environment are identified in the literature:

A) Access to financing. Guerrero (2009) mentions that access to credit is among the main factors that influence the growth of SMEs, as well as their size and age (Sánchez, Salazar and Soto, 2014); in addition to this, if the company lacks liquidity and sources of financing, its survival will be compromised over time (Ángel and Lozano, 2018). It is also worth noting that the initial capital will determine in a certain way the success that the new company may have; in the case of SME managers, they are the ones who prefer to start operations with their own resources (González, Soto and Muñoz, 2012); at the same time, it is essential that the capital structure is supported by the strategic planning that prevails in the organization; in this case, most SMEs lack business plans, which limits access to bank loans (González, Soto and Muñoz, 2012). Based on the above, Ángel and Lozano (2018) point out that the capital structure, access to financing and management of strategic planning are the main factors that influence the financial problems of SMEs; for example, in terms of financing, SME managers rule out the search for external credits, with high interest rates being the main limitation; in addition to this, managers do not intend to disclose the organization's information to banking institutions, as they tend to experience concern about the direction the company may take; however, if an entity is recognized in the market, its legitimacy and recognition by institutions, clients, banks, etc. will be greater (Ángel and Urbano, 2016).

B) Strategic planning in SMEs. Ángel and Lozano (2018) mention that the absence of strategic planning is one of the main causes of failure in SMEs, since their decision-making is not supported by timely and reliable information and, consequently, the results of the actions do not achieve the desired objectives. Adequate strategic planning will not only have a positive influence in terms of competitiveness, but will also be relevant in the unification of functional areas and in the achievement of goals

(Ángel and Lozano, 2018). Likewise, the behavior of its members will be congruent and directed towards the same objective, reducing at the same time the gaps present in communication and in the performance of teamwork (Carreras, Blanco and Arroyo, 2017). Another problem present in SMEs is the constant change in the assignment of roles and activities to workers, the lack of qualified labor and the absence of an organizational culture, which results in high staff turnover (Montalvo, Eylin and López, 2021). Likewise, the scarce presence of Management Systems slows down the company in matters of optimization and process improvement since its operations are hardly interconnected and the total satisfaction of the interested parties is not achieved (Becerra, Diaz and Silva, 2021).

C) Human resource training Training, considered as the set of techniques, tools and knowledge that provide workers with the necessary skills to perform their duties, comes to be seen as a strategic process within organizations (Aguilar, Howlet and Díez, 2014). The formality of the training process depends on the level of management that predominates in the company; unfortunately, the way in which SMEs train their staff is *on the fly* and as the process demands it, which is detrimental to the development of employees' work skills; in light of this, Montalvo et al. (2021) highlight that the SME entrepreneur sees training as an unnecessary investment and underestimates its benefits.

According to the Mexican Constitution, both the employee has the obligation to be trained and the company to train, however, national SMEs are still weak in terms of its application since their leaders do not consider training as an investment and, in addition to this, they are unaware of the advantages present in training: Trained personnel will show greater commitment to the company and will dominate their area of performance, which will be reflected in low staff turnover rates (Montalvo, Eylin and López, 2021) resulting in an increase in productivity, quality (Aguilar, Howlet and Díez, 2014) and the ability to respond to organizational changes (Montalvo, Eylin and López, 2021). Regarding this, Montalvo et al. (2021) suggest that every training process should be oriented towards scientific models structured in 4 stages: planning, organization, execution and evaluation. To optimize the use of human resources, it is necessary to start with training; timely identify the needs of the staff and, derived from this, design a planned program that, when applied, considers the resources necessary for the development of the employees, without forgetting, of course, the

evaluation and control of these (Aguilar, Howlet and Díez, 2014); Likewise, Ariza et al. (2020), point out that to enrich human capital it is essential to modernize positions, roles and organizational practices based on a stable organizational structure that will result in an increase in the competitive performance of workers while trying to match personal interests with business interests (Montalvo, Eyllin and López, 2021).

D) Innovation. In previous years, the competitiveness of companies was based on their size; however, over time this perception has turned towards the level of technology and the agile adaptation to change that an organization can present (González, Leal and León, 2009). Without leaving aside the importance of having an organizational culture in the company, which will set the tone for an interaction based on values, beliefs and norms between its members and the business environment (Rodríguez, 2010). Likewise, the level of knowledge that the company has becomes important, since by giving it adequate management it will be possible to deliver a product or service with added value (Rejas, Ponce and Ponce, 2009). Innovation is defined as the insertion of an idea, method, technology or tool that aims to streamline the processes that interfere with the creation of a product or service or, it refers to a new way of doing things (Loyola and Mendoza, 2017). Previously, investing in innovative methods was seen as a source of differentiation, however, today this has become a requirement marked by the globalized market and consumers (Loyola and Mendoza, 2017). Innovation, intellectual capital and investment in technologies are competitive advantages that SMEs can develop to stand out in the environment (Sánchez, Salazar and Soto, 2014). If a company decides to invest in innovation, it will be acquiring the ability to adapt to the environment through reinvention and even diversification (Loyola and Mendoza, 2017). Rodríguez (2010) suggests that SME leaders must take risks in terms of searching for and investing in innovative methods for their processes as well as having the notion that over time technological tools will be discarded and replaced by others that have better characteristics (Fierro, Ramos and Alcaraz, 2021), taking into account that the balance that must prevail in terms of investment is that financing must be below the costs of the product or service offered, considering that the desired levels of productivity have been reached (González, Leal and León, 2009).

E) Quality. Various authors highlight that quality has potentially influenced the competitiveness of SMEs, since now, they must focus resources on providing

products and services that exceed customer expectations and ensure a place among their preferences (García, Adame and Sánchez, 2017). It has also been proven that every SME that invests in Quality Management systems manages to achieve favorable levels in terms of competitiveness and process improvement; however, it is necessary to emphasize that one of the obstacles present in this regard is resistance to change, lack of vision and the implementation costs that these systems entail (García, Adame and Sánchez, 2017). Although the adoption of improvement methodologies in SMEs is important, it is necessary to mention that both the lack of financial resources and the scarce availability of specialized knowledge can be detrimental to their implementation and development (García, Adame and Sánchez, 2017). Ultimately, quality not only ensures customer satisfaction, but is also a key tool for differentiation in highly competitive global markets.

F) Knowledge management. Another significant variable within organizations of any size is knowledge, defined as the set of information that covers specific topics of processes, products, services, systems, among others. Knowledge can be of two types; explicit or tacit; the first is that which is embodied in manuals, procedures, databases, etc. while tacit refers to the experience acquired in the cultural and systematic environment where individuals operate. In this sense, it is important to emphasize that the usefulness of knowledge arises from the fact that it is shared and applied, therefore, it is necessary that a culture of management of this resource prevails that manages to encourage creativity and innovation among its members (Rejas, Ponce and Ponce, 2009); In this case, SMEs face a barrier to their management: their leaders generally want to have control over decision-making based on their own criteria, which limits access to sources of opinion or information that may be relevant (Rejas, Ponce and Ponce, 2009). Given this, Carreras, Arroyo and Blanco (2017) emphasize that the entrepreneur must focus efforts on promoting communication and acceptance of critical information from their employees and, based on this, give way to strategic thinking that feeds the sense of innovation and improvement in operational and administrative processes. If a company has knowledge of interest, it will have the ability to solve problems of various kinds, through a systematic and organized process that will provide the necessary results to support efficient decision-making (Rejas, Ponce and Ponce, 2009).



## **SMEs present in the city of Durango**

The state of Durango is made up of 39 municipalities and a distributed population of 1,832,650 people, with an average schooling of 9.7 years among its inhabitants over 15 years of age. The capital, Victoria de Durango, has 654,876 inhabitants (Cheverría and Nevárez, 2023).

At the national level, the state of Durango contributes 1.2% to the Gross Domestic Product (GDP). This places it in 26th place in terms of state participation. The main economic activities that prevail in the State are commerce, manufacturing, mining and agricultural activities, presenting an employability of 768,946 inhabitants (Cheverría and Nevárez, 2023) and an unemployment rate of 2.8% (INEGI, Encuesta Nacional de Ocupación y Empleo (ENOE), 2024). Of the employment level, 71% are employees dependent on an organization while 20.1% are self-employed, 5.5% are employers and the rest do not receive any remuneration (Cheverría and Nevárez, 2023).

According to figures from INEGI, the Economic Census carried out in 2019 registered 88,535 establishments in the state of Durango, presenting the following distribution: 45.7 % belong to the commerce sector, 42.4% to services, 9.7 to the manufacturing sector and 2.2% are directed to other economic activities; Of these companies, 99.8% are SMEs. Furthermore, 56% of businesses are operated informally (INEGI, Censos económicos 2019, 2020). In the context of the state economy, the city of Durango stands out for concentrating a significant part of these entities, registering 29,890 micro, small and medium-sized enterprises (MSMEs) according to the National Statistical Directory of Economic Units (DENUE) (DENUE, 2024).

These data highlight the importance of MSMEs in the local economy, highlighting their predominance in key sectors such as trade and services, despite the challenges they face, such as informality and limited formalization of their operations.

## **Project Management**

Project management has become a fundamental tool for modern companies, allowing them to achieve strategic objectives through efficient resource management. Nowadays, it is common for companies to develop internal or external projects that promote the achievement of strategic objectives, which must be subject to standards that guarantee their correct planning, execution, performance and closure (López et al., 2018). Having said that, the project is conceptualized as the necessary basis to strategically manage resources and solve

the problems present in organizations (López et al., 2018). The degree of acceptance and development of projects by those involved and the effective management of the leader will be key factors for their successful closure (López et al., 2018). Based on this, the organizational capacity present in the company to carry out projects of interest and the level of formality that they decide to give it become relevant (López et al., 2018).

Within this framework, project management methodology becomes important; a methodology is a reference for structuring, planning and controlling the development process of a product (Molina, 2012). On the other hand, the concept of project management refers to the planning and monitoring of a job that is intended to be executed efficiently and in a given time (Fuentes, 2012), through the use of numerical techniques that allow the allocation, management and adequate consumption of the resources destined for the realization of the project (Ajenjo, 2004).

The essence of project management lies in planning the activities that will give rise to a good or service and, after carrying out said plan in the expected way, fulfilling its objective, scope, quality, time and budget, the result will be a totally satisfied client, which *can generate new contracts* or recommendations for the company providing the project (Gido, 1999); on the contrary, an absent or scarce project management will result in a deficient use of resources, where the applied efforts, labor, materials and economic resources will be wasted and the achievement of objectives will simply be stuck in purposes that were never achieved (Rodríguez, 2002).

According to Rodríguez (2002), the first phase of the *project management process* consists of *initiation*, where the aim is to formally define the new project or the continuation of a new stage of a project that is under development and results in the authorization of activities for its realization, as well as the approval of resources that will be necessary for it. It is in the initiation stage where the specifications of the project that is about to begin are detailed, for this, it is essential to have the client's requirements clearly defined and documented (Martinez and Chavez, 2010).

*planning* stage begins, which allows the resources to be distributed appropriately (Rodríguez, 2002) and based on this, a series of sequenced activities are established to transform the inputs into a tangible good (González, Solís and Alcudia, 2010). A requirement to create a plan is to define the type of methodology to be applied during the development of the project, which will define the work strategy to follow; for this, it is essential to know and take advantage of the main factors that are presented under the context in which one is

working; on the other hand, exercising control at each stage of the project will depend on adequate planning (González, Solís and Alcudia, 2010). It is also suggested to standardize activities and implement progress measurement indicators (Martínez and Chávez, 2010) to detect non-compliance or deviations in a timely manner (González, Solís and Alcudia, 2010). Planning produces instruments that facilitate the visualization of the progress of activities and the achievement of objectives, called programs, which must have a detailed chronology. In this section, a task will not be judged individually, but it will be possible to detect the contribution that it represents in the integrative project and, consequently, evaluate whether the performance has been appropriate (Rodríguez, 2002).

Subsequently, there is the *execution stage*, leading to the implementation of the plan proposed above (Gido, 1999). The main activities that stand out in it are leadership and the effective exchange of communication. In this aspect, it is important that the leading company establishes techniques that guarantee the correct flow of information and exchange of ideas between its participants (Fuentes, 2012).

Finally, *the project is closed*, during which the project and all its implications are expected to be formally concluded, for example, the documentation generated during the process, the product or service generated, the settlements, certain provisions in the contract and, above all, the client's acceptance (Martínez and Chávez, 2010); Likewise, the total closure of the integrating activities of the project must be contemplated and, based on this, a final report must be generated, indicating the audits or reviews that were presented during the course, as well as the results obtained (Fuentes, 2012) and the objectives not met, the deviations that occurred and the respective analysis of why they occurred to avoid them in future projects (Ajenjo, 2004).

In conclusion, proper project management not only ensures the fulfillment of strategic objectives, but also maximizes the use of resources and ensures customer satisfaction, thus strengthening the company's competitive position.

Given the above context, we proceed to investigate the level of adoption of practices aimed at project management in medium-sized companies in Durango, while evaluating the presence of problems that afflict these entities in order to determine whether these variables have been mitigated over time, or whether they still cause havoc in them.

## Materials and methods

This exploratory research aims to expose the situation that prevails in a particular object of study, identify the current causes and, based on the results, define new lines of research that in the future may complement the subject in question. To this end, primary data was collected and analyzed through the application of previously validated instruments, which has allowed obtaining reliable and precise results that provide feedback to the inference of the topics discussed.

To achieve the above, a literature review was conducted on project management, SMEs and their problems; from this, instruments were constructed to collect information and these were subjected to validation and application; then the results are analyzed and the findings obtained are described.

In Mexico, SMEs are classified according to the number of employees (Ángel and Lozano, 2018). This research is focused on the analysis of a sample of medium-sized manufacturing companies present in the city of Durango that have a range of 51 to 250 workers (Cisneros, Torres and Flores, 2017). For their identification, the DENUE was entered where, by applying the filters corresponding to the characteristics of the sample, 28 active companies were obtained (DENE, 2024), therefore, this will be the sample size to be analyzed, considered in this case by the convenience method.

To collect data on the adoption of project management practices, two validated instruments were designed: one focused on the stages of project management and another on the causes that affect its implementation.

To investigate whether the organizations in question apply or have applied the project management methodology in a formal or standardized manner, the instrument called *Adoption of formal practices and methods for project management was applied*, which is composed of 5 dimensions derived from each stage that makes up said methodology: generalities of project management, implementation of the planning stage, implementation of the execution stage, implementation of the performance stage and implementation of the closing stage. This questionnaire consists of 24 items which were answered on the Likert scale under the following classification: 1: totally disagree; 2: disagree; 3: neither agree nor disagree; 4: agree; 5: totally agree. To build the instrument, representative aspects of each stage that makes up project management were selected with the objective that the results obtained provide a percentage of adherence to the requirements indicated in the methodology.

On the other hand, it is important to know the causes that generate good or deficient formality in the practice of project management in SMEs. To do so, respondents were asked to answer the questionnaire called *Causes that originate the scarce or high implementation of administrative practices in SMEs in Durango*; where 4 dimensions are considered that, according to the literature, are part of the main limitations that interfere with the growth and success of SMEs: financial resources, innovation, planning and training, presenting a total of 19 items.

The instruments are then validated using the Delphi method and Cronbach's alpha analysis to ensure the reliability and accuracy of the data obtained, allowing for a solid interpretation of the findings.

The Delphi method, based on providing a consensus issued by a group of specialists on a particular topic of study, serves as a support for the decision-making of those interested (Valdés and Marín, 2013). To carry out this analysis, 3 professionals with a PhD degree who are experts in the field and 3 businessmen with extensive work experience participated, where each of them carefully analyzed the structure of the instruments and provided their approval and/or feedback, as the case may be. As a result, the following adjustments were made: change in dimensions of 2 items, correction in wording and formulation of questions.

After applying the relevant corrections, the pilot of both instruments was carried out, considering 3 companies for their application. The results are analyzed in the SPSS software, obtaining a Cronbach's alpha above 0.9 for both instruments, without the need to omit any question, thus yielding a high level of reliability.

In conclusion, the methods used provide a solid basis for evaluating the implementation of project management in SMEs in Durango and the causes that influence its success or deficiency.

## Results

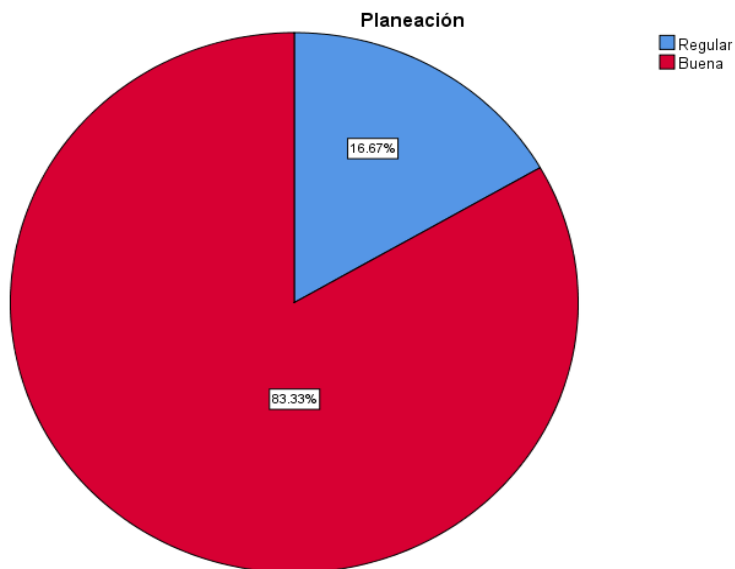
### **Adoption of formal practices and methods for project management in medium-sized companies in Durango**

From the initial sample size, 64% of medium-sized companies established in the city of Durango participated, from which the following was obtained:

72% of companies reported having applied the Project Management methodology in their processes; as a result, 67% of companies perceived a high level of commitment from

employees during its implementation; in addition to the above, 83% of companies consider carrying out good detailed planning, although this is done informally, as shown in Figure 1. Regarding the application of tools that allow the sequence and progress of activities to be visualized, only 72% made use of them.

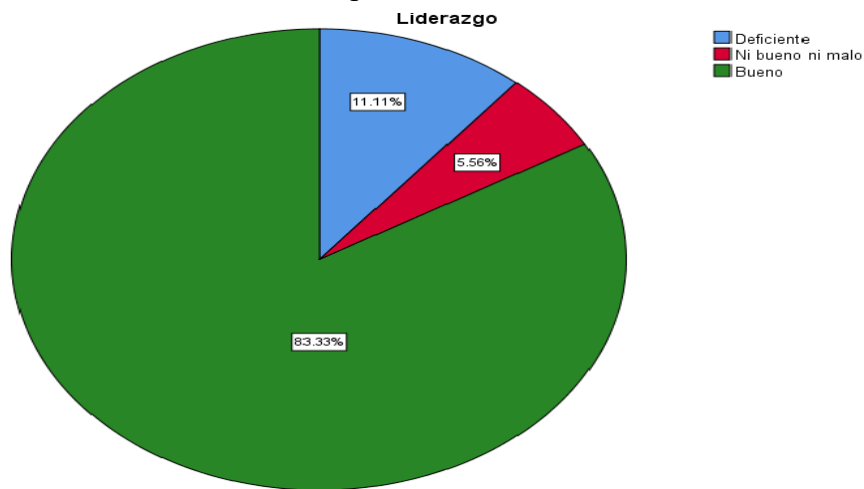
**Figura 1.** Porcentaje de empresas que consideran llevar a cabo una adecuada planeación



Source: Own elaboration

In relation to execution, the data show that, although 94% have defined procedures, only 78% consider that supervision during project development has been adequate; on the other hand, 84% have knowledge of applicable methodologies for the improvement and development of operations, although their application is not managed. In relation to worker performance, 78% say they carry out constant evaluations. Likewise, 83% rate the level of leadership as good, 11% as poor, and the rest show indifference, as shown in Figure 2.

**Figura 2.** Porcentaje de empresas que consideran tener un buen liderazgo en sus procesos



Source: Own elaboration

At the closing stage, 89% of companies document the completion of the project, which guarantees the formality of their processes; however, 50% lack a formal record of deviations and problems present in the projects, which limits their learning capacity for future developments. On the other hand, 89% of companies report knowing the level of customer satisfaction once the requested project is delivered.

In summary, the results show that, although most medium-sized companies in Durango implement project management practices, critical areas persist, such as the lack of formality in planning and the lack of detailed records on deviations, which limits their capacity for continuous improvement.

### **Causes that lead to the low or high implementation of administrative practices in medium-sized companies in Durango**

In addition to the above, it is determined that:

Ninety-four percent of companies claim to have the capacity to acquire bank loans; however, these operations are subject to the guarantees and requirements demanded by the institutions, which is why 100% of them opt for investing their own resources. In addition, 72% indicate that they invest in economic resources for the application of process improvement methodologies.

In terms of innovation, of the 67% of companies that have identified which equipment and/or techniques can make their production more efficient, only 44% have invested financial

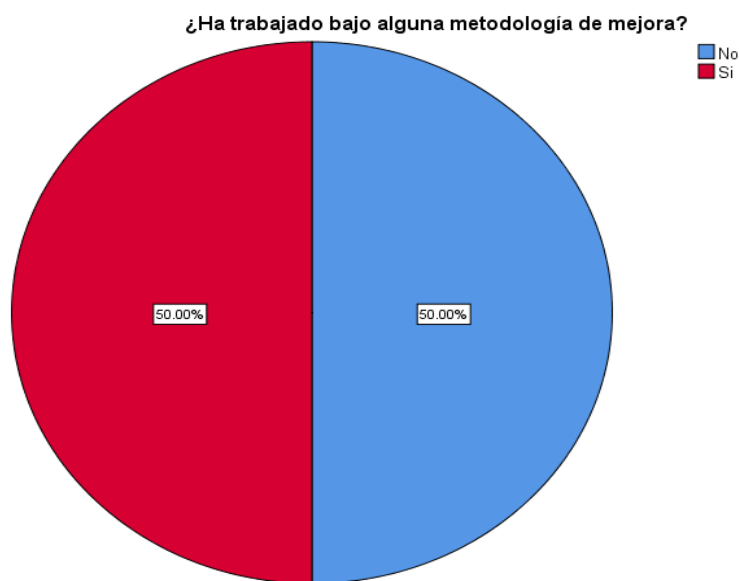
resources in the acquisition of new technologies. In addition, 61% say they do not have any communication network with the entity's technological centers.

Regarding strategic planning, 83% of the SMEs surveyed say they carry out practices focused on this topic, while 78% claim to have a standardized work model, and 83% consider that they have a defined organizational structure.

In terms of training, only 44% of the entities analyzed allocate financial resources for specialized training of staff; however, at least 66% say they have a formal initial training plan for new staff.

Finally, 77% of companies claim that the quality level of their products meets customer expectations. Despite the fact that there is knowledge of the tools that can encourage this aspect, Figure 4 shows that only 50% of the entities claim to have applied some methodology aimed at improving quality.

**Figura 4.** Porcentaje de empresas que ha aplicado metodologías de mejora



Source: Own elaboration

These results reflect various factors that impact the implementation of administrative practices, highlighting financial capacity, technological innovation and quality in processes. In summary, although medium-sized companies in Durango show progress in areas such as strategic planning and quality, important limitations persist in terms of technological investment, training and formal improvement methodologies, which suggests opportunities to strengthen their competitiveness.



## Discussion

In accordance with the above, it is interesting that 72% of companies have devoted efforts to the formal application of the project management methodology, since, although this indicator is above 50%, it is still not satisfactory. In addition, it is evident that only 64% of companies were satisfied with staff participation.

Regarding the stages that make up this methodology, the following is detected:

**Planning:** Although 78% of companies work with formal planning, the lack of tools such as schedules or other models that encourage time and resource management limits control and decision-making in project development. The above is related to previous research, such as that of Meraz et al. (2020), where they highlight the lack of planning in Mexican SMEs in the dairy sector, attributed to a limited capacity for managerial leadership, the absence of objectives and work models, as well as the weak organizational structure; on the other hand, Laitón and López (2020) report that in Durango, Mexico, SME planning is presented informally since its representatives lack knowledge that encourages the growth and consolidation of the company in the market, while Solís and González (2010) state that only 39% of SMEs belonging to the construction sector invest resources in project planning and management.

**Execution:** One aspect that is valued is that 94% of the surveyed companies have formal procedures for the execution of their tasks, although only 78% of them feel satisfied with the supervision provided by those responsible and they are the same ones that develop practices focused on the evaluation of the performance of their staff; in addition to this, only 55% of the sample is given the task of providing feedback to their employees; along the same lines, although 84% of SMEs claim to have knowledge on process improvement, only 50% have implemented some improvement model, which is a reflection of the weak knowledge management that still prevails in small and medium-sized companies.

It is common for these organizations to have work routines that do not consider the total needs of the process, since, regarding project management practices, medium-sized companies present a low level of application either due to the lack of vision of the owner, the work team or, due to resistance to change (Mazzei, 2014).

**Closing:** 89% of the sample claims to have the necessary documentation formalizing the end of the project; however, only half of the SMEs analyzed generate databases on which they keep control and record of deviations, indicators or other sources of information that in the near future may serve as feedback for decision-making.

In terms of innovation, there is still a marked gap between medium-sized companies and their connection with technological centers in the city, as stated by Buenrostro (2022), where he points out that the interest in the use of technologies by Mexican SMEs is scarce compared to SMEs in developed countries; in view of this, 64% of these organizations have a notion about some innovative tools that can make their processes more efficient, however, only 44% of these have acquired any technology; another aspect that is linked to the above is the poor investment in specialized training, which limits the development and use of employee skills; in this scenario, in previous research Rosales and Llanos (2020) detected that only 41% of SMEs allocate resources to training issues.

In summary, the results indicate that medium-sized companies in Durango have made significant progress in the formalization of processes, but important challenges persist in innovation, training and knowledge management, critical aspects for their competitiveness.

## Conclusion

This research showed that the surveyed companies have developed projects at least once in their existence. However, these were not subject to formal management to optimize their development and achievement of objectives, although it is recognized that efforts have been made to apply one or several stages that make up *project management* informally by more than 50% of medium-sized companies established in the capital of Durango. Although these companies have shown progress in the adoption of strategic practices, they still face significant challenges in areas such as innovation and training, key aspects for their sustainability.

As a result, those involved must be clear about the benefits they can obtain by applying management or improvement systems; because if a company works under a standard or methodology, it will have results that can be aimed at reducing the environmental impact, increasing the use of human resources, increasing quality, productivity or standardizing operations, as the case may be.

That said, it is necessary to recognize that for medium-sized companies, due to their characteristics, it may be more challenging to apply a methodology than for a large company; in light of this, various authors have taken on the task of designing management systems that can be adjusted to their needs, yielding favorable results in terms of financial performance and achievement of objectives.

Finally, it is worth noting that most of the surveyed companies claim to work under a standardized work model supported by a formal organizational structure, which reflects a panorama of improvement in the adoption of strategic practices in companies of this size, since, as indicated at the beginning of the research, SMEs have presented a scarce strategic planning that limits their survival; in this case, the participating companies have acquired maturity over time, since they have been in the market for more than five years; in view of this, it can be affirmed that these entities have become aware that, if a company, regardless of its size, dedicates efforts to a stable *strategic planning* and implements innovation methods to optimize its operational activities, trains and promotes the development of its staff, its social recognition will be greater by being considered as a centralized organization that promotes formality in each of its processes; however, it is necessary to keep in mind that the internal and external environment is still challenging for these entities.

In conclusion, this research highlights the importance of formalizing project management in medium-sized companies in Durango as a key tool for their consolidation and competitiveness in the market. Despite the progress observed, there remains a need to promote innovation, training and formality in all processes to ensure their sustainability in a challenging environment."

### **Future lines of research**

Based on the problems identified in this research, it is proposed to analyze in future research the role of government institutions and the programs they offer to support SMEs , since in 2024 *these* entities still face various factors that interfere with their development, which can be addressed through government programs that promote training and provide tools to microentrepreneurs. These lines of research will contribute to better understanding government strategies and the willingness of microentrepreneurs to adopt solutions that promote the development of SMEs.

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