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Article

# Strengthening operational excellence in Mexican SMEs: a model based on change management and continuous improvement

# Fortalecimiento de la excelencia operacional en PYMES mexicanas: un modelo basado en gestión del cambio y mejora continua

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**Abstract**

This study proposes a strategic perspective aimed at strengthening operational excellence management in any SME company. The proposal is based on organizational culture and corporate values, integrating best practices and key competencies as central pillars. The main objective is to develop an operational excellence proposal that allows measuring its level of maturity and aligning continuous improvement processes with the company's guiding principles and changing management. To this end, a qualitative methodology was applied based on semi-structured interviews with five managers from strategic areas of SME companies located in the state of Colima. This approach facilitated the identification of critical needs and development opportunities aimed at consolidating operational excellence and ensuring robust organizational performance in dynamic environments. The findings show that practices such as effective leadership, cross-functional communication, and ongoing training are crucial for achieving organizational success.

| Objective | Methodologic | Contribution |
|---|---|---|
| Proponer y validar un modelo de excelencia operativa para PYMES mexicanas, basado en gestión del cambio y mejora continua, que permita medir el nivel de madurez organizacional y orientar la toma de decisiones estratégicas. | Este estudio se fundamenta en un enfoque cualitativo-descriptivo, cuyo propósito es comprender en profundidad las percepciones y experiencias de directivos de PYMES respecto a la excelencia operacional y su vinculación con la gestión del cambio y la mejora continua. | Las propuestas que se plantean en este artículo contribuyen a mejorar la comunicación interna, reducir la resistencia al cambio y fomentar una cultura de mejora continua, al tiempo que alinea la estrategia con la operación. |

**Business Administration, Business Strategy, Technological Change, Operational Excellence, Continuous Improvement, SMEs, Change Management**

**Resumen**

Este estudio plantea una perspectiva estratégica orientada a fortalecer la gestión de la excelencia operacional en cualquier empresa PYME. La propuesta se fundamenta en la cultura organizacional y en los valores corporativos, integrando mejores prácticas y competencias clave como ejes centrales. El objetivo principal consiste en desarrollar una propuesta de excelencia operacional que permita medir su nivel de madurez y articular los procesos de mejora continua con los principios rectores de la empresa y con la gestión del cambio. Para ello, se aplicó una metodología cualitativa basada en entrevistas semiestructuradas realizadas a cinco directivos de áreas estratégicas de empresas PYME ubicadas en el Estado de Colima. Este enfoque facilitó la identificación de necesidades críticas y oportunidades de desarrollo, orientadas a consolidar la excelencia operacional y asegurar un desempeño organizacional robusto en entornos dinámicos. Los hallazgos evidencian que prácticas como, el liderazgo efectivo, la comunicación transversal y la capacitación continua resultan determinantes para alcanzar el éxito organizacional. Las propuestas que se plantean en este artículo contribuyen a mejorar la comunicación interna, reducir la resistencia al cambio y fomentar una cultura de mejora continua, al tiempo que alinea la estrategia con la operación.

| Objectivo | Metodologia | Contribucion |
|---|---|---|
| Propose and validate a model of operational excellence for Mexican SMEs, based on change management and continuous improvement, which allows for measuring the level of organizational maturity and guiding strategic decision-making. | This study is based on a qualitative-descriptive approach, whose purpose is to gain an in-depth understanding of the perceptions and experiences of SME managers regarding operational excellence and its link to change management and continuous improvement. | The proposals put forward in this article contribute to improving internal communication, reducing resistance to change, and fostering a culture of continuous improvement, while aligning strategy with operations. |

**Administración de empresas, Estrategia de la empresa, Cambio tecnológico, Excelencia operacional, Mejora continua, PYMES, Gestión del cambio**

**Area**: Development of strategic leading-edge technologies and open innovation for social transformation

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## Introduction

Today's organisations face highly changeable environments that test their strength, maturity and adaptability. In this context, achieving strategic objectives and sustaining continuous improvement processes becomes a determining factor in ensuring long-term competitiveness and sustainability [McKinsey, 2024].

The central problem lies in the fact that many SMEs lack a comprehensive model that allows them to strengthen operational excellence [OE], articulate change management, and develop key competencies in a sustained manner. This situation limits their organisational resilience and hinders the consolidation of innovative processes that prepare them to face dynamic scenarios.

The literature points out that operational excellence is not limited to process optimisation, but requires an organisational culture aligned with strategic values and committed leadership. Authors such as Paris [2004] highlight the Kaizen philosophy as the basis for continuous improvement through the integration of people, processes, technologies, and resources. Complementarily, Rusev and Salonitis [2016] emphasise the need for training plans, disruptive technologies, and self-assessment systems to strengthen operational efficiency.

Despite these advances, there remains a gap in the literature regarding how Mexican SMEs integrate operational excellence with sustainable practices and change management approaches. Recent studies [Sá et al., 2022; Shingo, 2022] show effective models in other contexts, but their application in smaller companies and emerging markets remains limited.

In this regard, the present study aims to propose and validate a model of operational excellence for Mexican SMEs, based on change management and continuous improvement, which allows for measuring the level of organisational maturity and guiding strategic decision-making. The hypothesis guiding this research argues that the integration of effective leadership, organisational culture, cross-functional training, and innovative technologies constitutes a set of determining factors for consolidating operational excellence and improving the resilience of SMEs in dynamic scenarios.

## Theoretical framework

### Strengthening operational excellence in dynamic scenarios

In this real-world environment, it is possible to ask the following question: What are the key factors that drive the maturity of operational excellence [OE] in the industry, ensuring its sustainability over time?

Currently, some organisations do not have a clear and defined map of the capabilities needed to implement and maintain operational excellence over time, in which quality and cost optimisation are prioritised.

This makes it difficult to continuously adopt best practices in the various operations within the organisation, limiting its efficiency, effectiveness and adaptability in the face of new and changing scenarios. Overcoming this challenge requires fostering a key culture, highlighting key competencies and aligning the company's strategies with its operational management.

### What is operational excellence?

It is a comprehensive and systematic approach that seeks continuous improvement of processes within the organisation to offer added value that satisfies the customer, i.e., going beyond customer expectations, as it is essential that the organisation focuses all its processes on the customer.

Process innovation and commitment to customer satisfaction are key components of this strategy, which drives both growth and long-term sustainability. Operational excellence responds effectively to the needs of the market and, therefore, the customer, enabling the organisation to strengthen its culture and focus on success.

### How is operational excellence viewed in other cultural regions?

Each region of the world has its own business tools and strategies for implementing models to create diverse open and collaborative ecosystems, which is quite a challenge given the cultural diversity in each region of the world.

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That is why each country creates different models with different pillars, but these are related to global business dynamics, such as those applied by China: the disintegration of the traditional hierarchical structure, the transformation of employees into a system called micro-entrepreneurs, and the implementation of open platforms for co-creation.

## Methodology

### Methodological proposal

This study is based on a qualitative-descriptive approach, the purpose of which is to gain an in-depth understanding of the perceptions and experiences of SME managers regarding operational excellence and its link to change management and continuous improvement.

As Braikie [2007] and Saunders [2009] point out, this type of methodology allows for the capture of holistic views that integrate both the technical and human dimensions of the phenomenon under study.

### Population and sample

The research was carried out in the state of Colima, Mexico, with an intentional and convenience sample of 20 SME entrepreneurs and managers who hold key positions in areas such as operations, continuous improvement, human resources, and supply chain.

The inclusion criteria were that participants had at least three years of experience in the organisation and a maximum of 30 years of work experience. This delimitation ensures the participation of informants with sufficient knowledge of the internal functioning of their organisations and with the ability to provide information relevant to the study.

### Instrument

The data collection instrument consisted of semi-structured interviews conducted in three stages, with a total of ten open-ended questions. These were designed to explore organisational maturity, change management and the factors that influence the sustainability of operational excellence.

The interview was administered using the Google Forms platform, which allowed for immediate digital recording of the responses.

The questions focused on topics such as: definition of operational excellence, existing organisational capabilities, areas for improvement, change communication processes, strategic alignment, barriers to continuous improvement, required competencies, available resources, and determining factors for adaptation in dynamic scenarios.

The structure and content of this instrument are detailed below.

1. How do you define operational excellence in your organisation?

2. Which of your organisation's existing capabilities contribute to operational excellence?

3. Do you think that your organisation's existing capabilities need to be improved?

4. How are changes implemented and communicated within the organisation?

5. How does the organisation ensure that its operational excellence strategy is aligned with its strategic objectives?

6. What are the possible factors that hinder the sustainability of continuous improvement in the organisation in the long term?

7. What capabilities does the organisation need to develop to improve its operational excellence?

8. What competencies should employees have to contribute to operational excellence?

9. What resources and tools should be implemented or improved in the organisation to facilitate the development of new competencies and thus ensure operational excellence?

10. What could be the determining factors that enable the organisation to adapt to dynamic changes and maintain the new model of operational excellence?

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**Data analysis plan**

The analysis of the information was carried out in several phases. First, following the principles of Grounded Theory [Strauss & Corbin, 1998], an open coding process was carried out to fragment the responses and group them into meaningful conceptual categories. Subsequently, a cross-analysis [Yin, 1994] was performed to compare findings between different cases and categories. Although the main approach was qualitative, SPSS software was used to organise and present the results using tables and frequency graphs, in order to reinforce the systematisation of the information and facilitate interpretation. In this way, qualitative techniques [coding and categorisation] were integrated with basic quantitative resources [frequencies and percentages] to offer a more complete view of the phenomenon.

Ethical considerations

All participants were explained the purpose of the research before their participation, guaranteeing the confidentiality of the data and the voluntary nature of their collaboration. The interviews were transcribed and reviewed manually to preserve the accuracy of the information [Rodríguez Gómez & Valldeoriola Roquet, 2014]. The data will be used solely for academic purposes, maintaining objectivity and neutrality at all stages of the research process.

Question 1: How do you define operational excellence in your organisation?

When reviewing the results for the first question of the questionnaire presented in Table No. 1, SPSS software shows that 44% associate operational excellence directly with continuous improvement [Kaisen] models and tools, which is evident in opinions such as: "It is a mature, comprehensive model of operational excellence for business organisations to strengthen strategic excellence in dynamic scenarios, offering a holistic and integrated model, mainly focused on eliminating everything that generates waste within the organisation. The operational excellence model is based on four fundamental pillars and uses performance management models, as well as various continuous improvement methodologies [Kaisen], which are integrated into the various processes within the organisation to improve performance and manage deviations."

Thirty-six per cent of companies associate operational excellence with strategic objectives. They implement PDCA cycles, continuous training, and process optimisation in production and customer service, which are included in strategic planning, i.e., the long-term goals that an organisation sets out to achieve in order to realise its vision and mission.

They establish the overall direction of the company and serve as a guide for decision-making and aligning efforts at all levels of the organisation. However, this does not always translate into consistent operational practices.

Finally, 20% of the companies interviewed associate operational excellence with management models and tools, the use of ISO 9001, Lean Manufacturing, and Balanced Scorecard, which are more common in companies with international certifications.

The operational excellence model includes within its management the resources that organisations use to plan, organise, direct and control their operations and resources, i.e. on the one hand, the conceptualisations of how the organisation works, while the tools are the specific instruments that enable it to carry out its management functions. In practice, they are less widely used due to certification costs and a lack of specialised personnel.

Table No. 1 below shows the results of the first question in the questionnaire.

**Box 1**

**Table 1**

Results of question 1

| Definition option | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a) Strategic objective | 36% | They link excellence to their corporate vision and long-term goals, especially in the manufacturing and professional services sectors. |
| b) Continuous improvement [Kaizen] | 44% | They implement PDCA cycles, continuous training, and process optimization in production and customer service. |
| c) Modelo de herramientas de gestión | 20% | Use of ISO 9001, Lean Manufacturing, Balanced Scorecard, more frequent in companies with international certifications |

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**Box 2**


**Figure 1**

Sample results of question 1

**Question 2: Which of your organisation's existing capabilities contribute to operational excellence?**

When analysing the results generated by SPSS for the second question in the questionnaire presented in Table 1, it was found that 34% of managers are involved in improvement projects, clear communication of objectives, and participatory leadership. Respondents highlight the positive influence of strong leadership and commitment from senior management, motivating employees and promoting operational excellence through clear commitment.

Twenty-eight per cent value shared practices, organisational learning, and retention of know-how in key processes related to organisational culture and accumulated knowledge. Senior and middle management agree on the solid organisational culture, technical knowledge accumulated over the years, and the use of practices to manage and share knowledge.

Twenty-five per cent value the existence of a formal structure for continuous improvement, with structured processes that enable sustainable improvements to be implemented, documented procedures, quality committees, and the use of performance indicators.

However, 13% highlight the availability of more investment in resources and technical training, which allows the organisation to train staff [specialisation], acquire technology and tools to optimise processes.

Table No. 2 below shows the results of the second question in the questionnaire.

**Box 3**

**Table 2**

Results of question 2

| Existing capacity in the organization | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Leadership and commitment | 34% | Managers involved in improvement projects, clear communication of objectives, participative leadership. |
| b] Formal structure for continuous improvement | 25% | Documented procedures, quality committees, use of performance indicators. |
| c] Organizational culture and accumulated knowledge | 28% | Shared practices, organizational learning, retention of know-how in key processes. |
| d] Investment in resources and technical training | 13% | Staff training, acquisition of technology and tools to optimize processes. |

**Box 4**

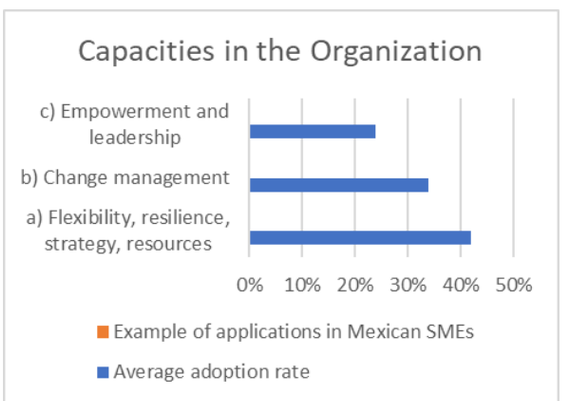


**Figure 2**

Sample results of question 2

**Question 3: Do you think that the capacity that already exists in your organisation needs to be improved?**

When examining the overall results of the third question in the questionnaire presented in Table 1, it can be seen that 46% of the companies interviewed report deficiencies in structured training and education, including a lack of refresher programmes, a lack of specialised technical skills, and insufficient leadership training, limiting the preparation and development of critical skills.

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Thirty-two per cent stated that there is organisational disconnection and limited alignment between areas, a lack of cohesion between them, unshared objectives, and poor interdepartmental communication, which affects the integration of efforts and generates disparities in performance and low operational maturity, leading to the development of dysfunctional silos. The main weakness lies in the fact that some programmes, although well started, are lost over time, especially when there are changes in leadership.

Only 22% highlight limitations in change management and communication, which hinders the adoption of new processes, changes in priorities, high staff turnover, and abandonment of initiatives before they are consolidated.

Table No. 3 below shows the results of the third question in the questionnaire.

**Box 5**

**Table 3**

Results of question 3

| Area that needs improvement | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Deficiencies in training and education | 46% | Lack of refresher programs, lack of specialized technical skills, and insufficient leadership training. |
| b] Limited alignment, organizational link | 32% | Lack of cohesion between areas, unshared objectives, poor interdepartmental communication. |
| **c]** Conflict in the continuation of the projects | **22%** | Changes in priorities, high staff turnover, abandonment of initiatives before they are consolidated. |

**Box 6**

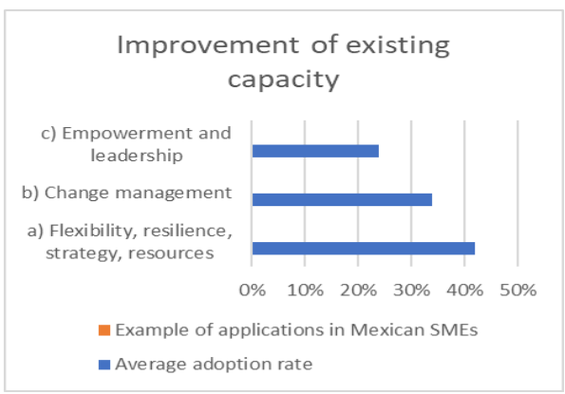


**Figure 3**

Sample results of question 3

Question 4: How are changes in the organization implemented and communicated? An analysis of the overall results of the fourth question in the questionnaire in Table 1 shows that 39% of respondents say there are significant challenges in communication and employee involvement in change management and that horizontal communication must be strengthened and front-line employees must be integrated to foster a culture of adoption and commitment at all levels, enabling the organization's objectives to be met and complied with. Changes within the organization do not follow a pattern of order, i.e. in a structured manner; they tend to be isolated without being properly integrated throughout the organization.

On the other hand, 34% of those involved in adaptive change management show an advanced understanding of the need for adaptive change management that is tailored to the culture and particularities of each team, with prior training and direct consultation before and during the change process.

However, 27% of those interviewed highlight a structured approach and cascading participation and emphasize well-structured, cascading change communication, which ensures that planned downward communication channels and organisational strategies, defined roles, and formal implementation plans reach all employees from senior management.

Table No. 4 below shows the results of the fourth question in the questionnaire.

**Box 7**

**Table 4**

Results of question 4

| Method of implementing and communicating the change | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Inadequate communication channels and limited staff involvement | 39% | Fragmented information, delayed communication, resistance to change due to lack of knowledge. |
| b] Cascading participation and structured vision | 27% | Planned downward communication, defined roles, formal implementation plans. |
| c] Active involvement of staff in change management | 34% | Working groups, prior training, direct consultation before and during the change process. |

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## Box 8

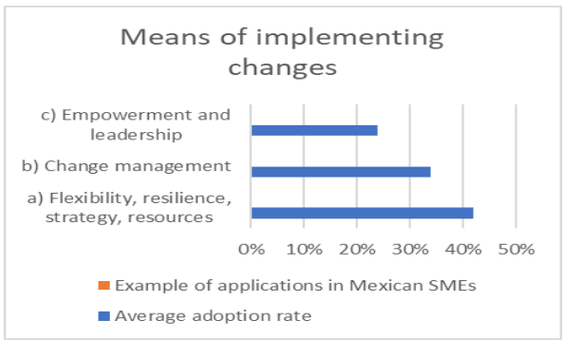


**Figure 4**

Sample results of question 4

**Question 5: How does the organization ensure that its operational excellence strategy is aligned with its strategic objectives?**

Considering the aggregate results of the fifth question in the questionnaire presented in question 1, it can be seen that 41% of respondents affirm that continuous measurement and evaluation is the most frequent practice, as it allows for agile adjustments in dynamic scenarios with limited resources.

The literature indicates that this approach responds to the volatility of the Mexican competitive environment. The identification of employees with values and organizational culture, from senior management to the lowest-ranking worker, is part of the performance evaluation of senior managers, who are responsible for continuously improving indicators related to the adoption of organizational values. Action plans are developed and evaluated after each measurement to ensure that values are integrated into the behavior of all hierarchical levels within the organization.

Thirty-six per cent of respondents argue that there are variations in the degree of integration of organizational values and areas where values have not yet been fully integrated. Some employees identify with the company's values, but many only see them as part of their daily activities and do not adopt the culture as part of their identity. However, only 23% highlight the strategic and cross-cutting integration of values at all hierarchical levels, with a structured and methodical approach. Employees are evaluated not only on achieving the organization's objectives but also on how they apply the company's values in their daily work.

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The objective of the performance evaluation includes both the achievement of goals and alignment with corporate values, which are constantly reinforced through a series of development, training, and leadership plans.

Table No. 5 below shows the results of the fifth question in the questionnaire.

## Box 9

**Table 5**

Results of question 5

| Alignment mechanism | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Long-term goals and measurable plans | 36% | Use of 3–5-year strategic plans, defined key performance indicators [KPIs], although they often lack continuity in their execution. |
| b] Continuous monitoring and evaluation | 41% | Internal audits, quarterly reviews, management control systems, and periodic reports. |
| c] Alignment with the strategic pillars | 23% | They focus on values, mission and vision, although in practice it usually remains at a more declarative than operational level. |

## Box 10

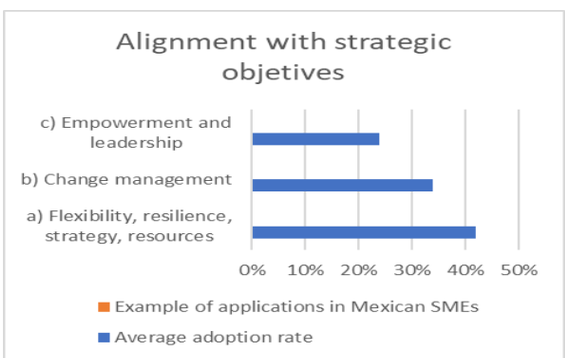


**Figure 5**

Sample results of question 5

**Question 6: What are the possible factors that make it difficult to sustain continuous improvement in the organization in the long term?**

44% of respondents highlight the clearly defined use of master plans and long-term objectives as a key mechanism for aligning the operational excellence strategy with the organization's strategic objectives, i.e. that the operational excellence strategy is aligned with its long-term strategic objectives through long-term strategic plans that establish specific goals and actions to maintain alignment.

With 29% agreement, respondents attribute high value to training, evaluation and continuous monitoring programmes as essential methods for ensuring that the operational excellence strategy remains in line with strategic objectives, through periodic reviews and adjustments based on results.

On the other hand, only 27% of respondents highlight the relevance of alignment through the organization's strategic pillars, such as cost control, safety and staff development, as well as communication of these pillars through meetings.

Table 6 below shows the results of the sixth question in the questionnaire.

**Box 11**

**Table 6**

Results of question 6

| Factor that hinders the sustainability of continuous improvement | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Commitment and leadership throughout the organization | 44% | High managerial turnover, lack of transformational leadership, and poor coherence between discourse and action. |
| b] Training programs | 29% | Limited investment in training, reactive and unplanned training, lack of performance impact metrics. |
| c] Efficiency in management with a strategic approach | 27% | Disjointed processes, low technological integration, absence of clear strategic indicators. |

**Box 12**

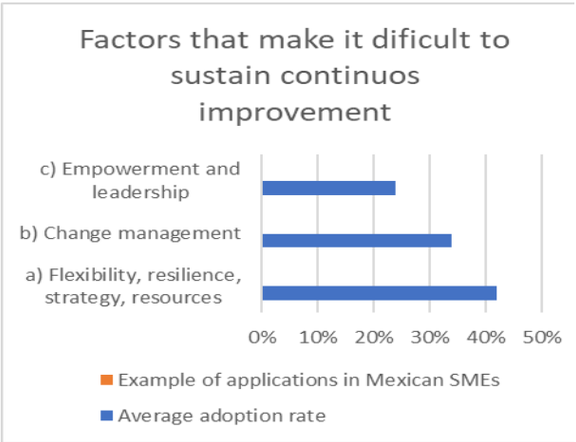


**Figure 6**

Sample results of question 6

**Question 7: What are the capacities of the organization that need to be developed to improve its operational excellence?**

Examining the results obtained for this seventh question in the questionnaire presented in Table 1, it can be seen that 42% highlight a high level of commitment and leadership at all levels, especially senior management and middle management. The involvement of all hierarchical levels within the organizational structure is important for continued success and compliance with the objectives defined in the strategic plans. This can be achieved through continuous training plans and leadership training, which should be included in the strategic plan.

Thirty per cent of respondents highlighted support structures and training programmes dedicated to continuous improvement, with a focus on training and capacity building and infrastructure improvement to strengthen innovation through skills development. Establish recognition for innovative collaborators in the implementation of continuous improvement, in initiatives and formal training programmes. These elements motivate the team and encourage staff development. However, 28% of respondents highlight the focus on efficient management and strategic planning with clear and achievable objectives, managing the use of strategic planning tools that enable informed and sustainable decision-making.

Table No. 7 below shows the results of the seventh question in the questionnaire.

**Box 13**

**Table 7**

Results of question 7

| Ability to develop | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Staff development | 42% | Continuous training, leadership, digital and technical education. |
| b] Infrastructure investment | 28% | Acquisition of machinery, technological improvement, digitization of processes. |
| c] Innovation | 30% | New business models, product diversification, innovation in processes and services. |

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## Box 14


**Figure 7**

Sample results of question 7

**Question 8: What competencies should employees have to contribute to operational excellence?**

When analyzing the overall results of the eighth question in the questionnaire presented in Table No. 1, 36% of respondents refer to technical skills, inconsistency and lack of discipline in project monitoring, especially when the expected results are not achieved in the short term, affecting the sustainability of continuous improvement projects. Training is fundamental to achieving operational excellence in specialized knowledge tools, use of technologies, and quality process management.

This result of 34%, referring to organizational disconnection and lack of operational alignment warns of the lack of integration of operational staff in continuous improvement processes, as well as the lack of coordination in the assignment of responsibilities, which hinders effective implementation at all levels of the organization.

Lack of project coordination and lack of conflict resolution skills are reasons for poor leadership within the company. The lack of continuous improvement and training in work skills to foster effective, efficient relationships throughout the organization's structure hinders the achievement of the company's objectives.

Likewise, the remaining 30% of respondents recognize deficiencies in the education and training of new leaders and technology, reflecting the lack of structured training programs and limited access to modern technology, especially for new leaders and supervisors.

This limits the preparation of future leaders and technological training to sustain continuous improvement.

Table No. 8 below shows the results of the first question in the questionnaire.

## Box 15

**Table 8**

Results of question 8

| Priority competence | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Technical skills | 36% | Specialized knowledge, use of technologies, management of quality processes. |
| b] Teamwork and leadership skills | 34% | Project coordination, conflict resolution, participative leadership. |
| c] Training | 30% | Refresher programs, continuing education, development of new skills. |

## Box 16

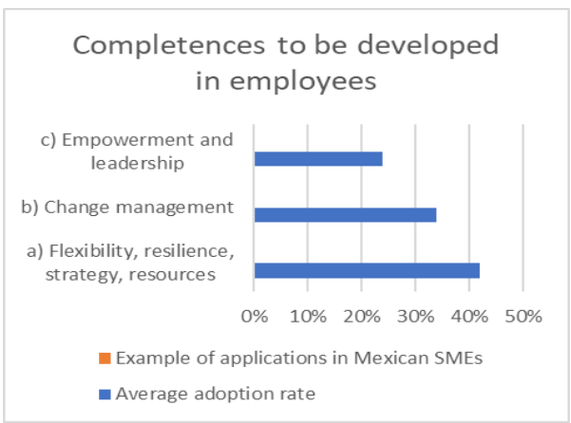


**Figure 8**

Sample results of question 8

Question 9: What resources and tools should be implemented or improved in the organization to facilitate the development of new competencies to ensure operational excellence?

When evaluating the overall results of the ninth question in the questionnaire presented in Table No. 1, we find that 38% of respondents emphasise competence, staff development, strengthening leadership and fostering employee autonomy to improve and maintain operational excellence.

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Thirty-four per cent of respondents noted the need to strengthen work skills, reinforce technological capabilities, and establish more integrated data systems to increase efficiency, which will facilitate continuous improvement and foster the development of people, leadership, autonomy, and empowerment.

On the other hand, with 30% of respondents referring to technical training and methodologies that enable continuous training to strengthen the development of new skills, which allows the organization to meet new demands to improve and maintain operational excellence, the organization must develop technical and leadership skills in continuous improvement, as well as formalize employee training.

Table No. 9 below shows the results of the first question in the questionnaire.

**Box 17**

**Table 9**

Results of question 9

Table No. 10. Results of question 9.

| Priority resources and tools | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Competencies, staff development, management | 38% | Leadership programs, digital upskilling, change management methodologies. |
| b] Use of technology and data systems | 35% | ERP, CRM, data analytics, process automation. |
| c] Strengthen current technological capabilities + training | 27% | Gradual digitization, adoption of new software versions, training in existing tools. |

Source: Own elaboration.

**Box 18**


**Figure 9**

Shows the results of question 9

Question 10: What could be the determining factors that allow the organization to adapt to dynamic changes and maintain the new model of operational excellence?

Evaluating the general data corresponding to the tenth question of the questionnaire presented in Table No. 1, it is identified that 42% of the companies interviewed consider that employees must establish technical skills and the use of advanced data, in addition to analytical skills and the ability to accurately interpret and analyze data in order to adjust business models, strategies and resources, which is key in volatile environments.

This contributes to dealing with any situation within the environment, and the continuous training of staff is an important factor in strengthening effective decision-making and the need to strengthen empathy at work.

Thirty-four per cent of those interviewed also agree on the importance of enhancing skills in the adoption of change management methodologies, which report greater adaptation in the face of crises, and promoting the continuous development of employees to align their skills with organisational objectives and operational excellence.

To this end, it is necessary for the company to have experts and employees willing to undergo training. Everyone, from senior management to areas such as human resources and marketing, needs to share a minimum common knowledge base in order to move to the next level.

Meanwhile, the remaining 24% of respondents focus on the importance of

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empowerment and leadership, creating environments in which employees can develop their skills to align their competencies with organizational objectives and operational excellence, and having a workforce that is willing to take training courses.

Table No. 11 below shows the results of the tenth question in the questionnaire.

**Box 19**

**Table 10**

Results of question 10

| Determining factors | Average adoption rate | Example of applications in Mexican SMEs |
|---|---|---|
| a] Flexibility, resilience, strategy, resources | 42% | Manufacturing and service SMEs emphasize that their survival depends on their ability to reorganize processes and quickly reallocate resources. |
| b] Change management | 34% | Companies that have adopted change management methodologies [Kotter, ADKAR, Kaizen] report greater adaptation to crises and digitalization. |
| c] Empowerment and leadership | 24% | It is observed that transformational leadership and employee participation are relevant, but less prioritized compared to structural pressures. |

**Box 20**

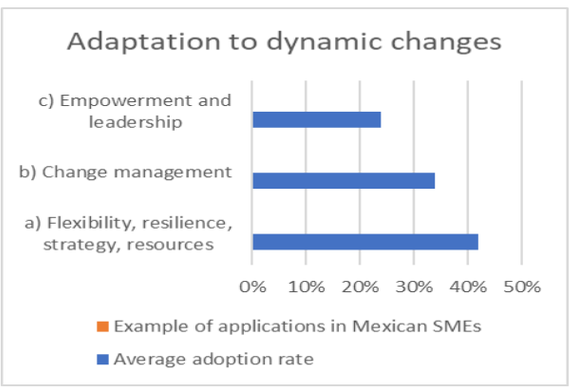


**Figure 10**

Shows the results of question 10

**Results**

Below, we present the results for each of the 10 questions, including only data that provides relevant information for this article.

The categories associated with each question are summarised in Table 1.

**Analysis of qualitative data**

The overall results show that the lack of cross-cutting standardisation in operational excellence [OE] practices leads to distortions in the adoption of key methodologies, which reduces consistency and limits the strategic impact of improvement initiatives.

This finding coincides with that of Carvalho et al. [2023], who highlight that the absence of comprehensive evaluation mechanisms compromises organisational maturity.

Although continuous improvement is recognised as an essential factor in reducing waste and improving operational efficiency, its application is limited in administrative and supply chain management areas. According to the evidence gathered, 35% of respondents link EO with models and tools [e.g., Kaizen, Lean, ISO 9001]; however, in many cases, its implementation is restricted to the production sphere, confirming Shingo's [2022] assertion about the difficulty of expanding excellence practices beyond operations.

For their part, 24% of respondents consider continuous improvement to be essential, although they face difficulties in terms of scope and sustainability. Only 36% highlighted the integration of long-term strategic objectives, reflecting a lag in strategic alignment, a situation also reported by McKinsey [2024] in highly volatile environments.

In terms of organisational capabilities, two determining factors were identified: support structures—such as areas for continuous improvement and strategic meetings [34%]—and committed leadership [27%], both of which promote alignment between strategy and operations. However, the results reveal deficiencies in internal communication and change management, which leads to partial integration of employees in strategic processes.

This finding coincides with Hiatt [2024], who emphasises that the sustainability of change depends on a balanced combination of technical and human dimensions.

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Likewise, limited assimilation of organisational values is detected, which affects cultural cohesion and reduces collective commitment. The inconsistency in project sustainability is linked to a lack of discipline in monitoring, the absence of continuous evaluation mechanisms, and weak interdepartmental coordination. These elements reflect the problem of 'organisational silos,' widely described in the literature on operational excellence [Rusev & Salonitis, 2016].

Finally, it is observed that the current technological infrastructure is insufficient to support predictive monitoring and agile decision-making, which underscores the need to invest in modern technologies and advanced analytical capabilities. This coincides with the approaches of , who highlight that the integration of digital tools and sustainability principles strengthens both the resilience and efficiency of organisations.

Figure 1 summarises the critical aspects identified in the ten dimensions analysed, highlighting the gaps between installed capacities, implemented practices and future needs of SMEs.

**Box 21**

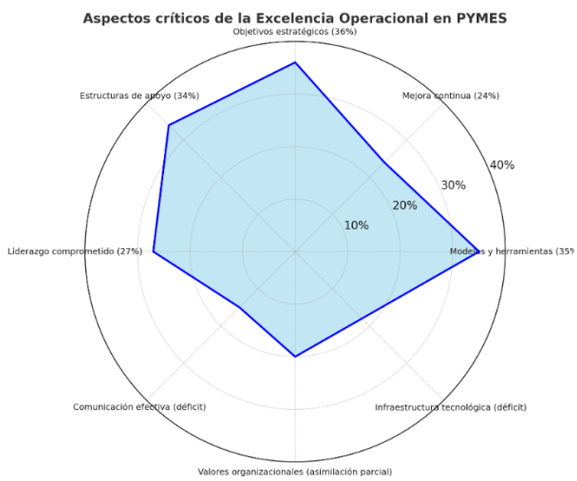


**Figure 11**

Breakdown of critical aspects for operational excellence

As mentioned, operational excellence [OE] must be strategic, sustainable, and cross-cutting. Although significant progress has been made in leadership and tools, challenges remain, such as a lack of standardisation, culturally limited leadership, a restricted operational focus, insufficient communication, and weak or, in some cases, absent project sustainability.

## Conclusion

The results of this study show that the determining factors of maturity in operational excellence [OE] are effective leadership, continuous improvement, alignment with strategic objectives, and the strengthening of technical and analytical skills.

These elements form the basis for consolidating a resilient and adaptable organisational culture capable of articulating operations, corporate values, and change management oriented towards sustainability.

It is confirmed that practices such as systematic evaluation, transformational leadership, and structured training enhance the capacity of SMEs to sustain continuous improvement processes, overcome resistance to change, and achieve optimal performance in critical areas.

The main contribution of this study lies in offering a holistic approach, where the integration of leadership, advanced competencies, and strategic management allows for maintaining high performance standards in dynamic contexts.

## Practical implications

This study provides empirical evidence applicable to Mexican SMEs, highlighting the need to:

**Standardise processes** of operational excellence in all areas, not just operations, to ensure consistency and sustainability.

**Strengthen internal communication and change management** in order to actively integrate all employees.

**Invest in digital technologies and analytical capabilities** that enable predictive monitoring and agile decision-making.

**Consolidate cross-cutting competencies** through continuous training programmes and transformational leadership development focused on consolidating motivation, commitment and organisational cohesion around the principles of operational excellence.

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These programmes should be applied at all hierarchical levels and areas of the organisation, promoting a shared sense of purpose and collective responsibility.

**Design and implement a comprehensive model of operational excellence** that allows for the standardisation of processes throughout the organisation, establishing a regulatory framework applicable to all areas, including human resources, administration and other strategic departments.

This model should ensure that staff understand and apply organisational standards uniformly, through clear procedures, ongoing training programmes, internal audits, technological integration and continuous improvement practices. This approach not only promotes sustainability and consistency in management, but also stimulates innovation aimed at responding quickly to changing market demands.

**Develop a strategic plan to ensure the sustainability of continuous improvement projects**, supported by solid organisational structures and effective strategies based on international best practices.

This plan should minimise dependence on individuals by standardising processes, implementing continuous training programmes and developing digital platforms that centralise information, thus promoting operational continuity and the sustained success of projects in the long term.

**Promote interdepartmental improvement teams**, focused on identifying, analysing, and prioritising opportunities for process optimisation. These teams should foster effective collaboration between areas and ensure consistency with the organisation's strategic objectives. It is also essential to establish regular meetings to evaluate progress, define action plans, and adjust strategies based on the results achieved.

**Define institutional policies** that consolidate change management as a central focus of the organisation. These policies should ensure that all employees clearly understand their role in transformation initiatives, linking their individual objectives to the corporate strategic vision.

To achieve this, it is essential to design an internal communication system that transcends hierarchical barriers, promotes interdepartmental collaboration, and strengthens an organisational culture based on transparency and trust.

These practices promote more sustainable and competitive management that is aligned with the demands of the dynamic markets in which Mexican SMEs operate.

## Limitations and future lines of research

This study has some limitations that should be acknowledged. First, the sample focused on SMEs in a specific state of Mexico [Colima], which limits the generalisation of the findings. Second, the research relied mainly on qualitative interviews, which limits the quantitative scope of the conclusions.

Therefore, it is suggested that future research:

Expand the sample to the national level and to different industrial sectors.

Integrate mixed methods [qualitative and quantitative] to validate the results and generate predictive models of operational excellence.

Explore in greater depth the role of digital transformation and sustainability as cross-cutting factors in the maturity of operational excellence.

## Declarations

## Conflict of interest

The authors declare that they have no conflict of interest. They have no conflicting financial interests or personal relationships that could have influenced the article presented in this paper.

## Contribution of the authors

*Torres-Gutiérrez, Arturo*: Contributed to the project idea and the development of the research.

*Lino-Gamiño, Juan Alfredo*: Contributed to the development of research, data analysis, review and editing.

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**Availability of data and materials**

The data sets used or analysed during the current study are available upon request from the corresponding author.

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**Abbreviations**

**EO** – Operational excellence.
**PYME** – Small and medium-sized enterprises.
**SMEs**– Small and medium-sized enterprises.

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