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# **Journal-Microeconomics**

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Support the international scientific community in its written production Science, Technology and Innovation in the Field of Social Sciences, in Subdisciplines of Household behavior: Consumer economics, Consumer economics, Household production and intrahouse allocation, Personal finance, Consumer protection; Production and organizations: Firm behavior, Organizational behavior, Transaction costs, Property rights, Production, Capital and total factor productivity, Capacity; Distribution: General, Personal income and wealth distribution, Factor income distribution; Market structure and pricing, Perfect competition, Monopoly, Oligopoly and other forms of market imperfection, Auctions, Rationing; Licensing, Value theory; General equilibrium and disequilibrium: Exchange and production economies, Incomplete markets, Input-Output analysis, Computable and other applied general equilibrium models; Welfare economics: Allocative efficiency, Cost-Benefit analysis, Externalities, Equity, Justice, Inequality, and other normative criteria and measurement, Altruism; Analysis of collective Decision-Making: Social choice, Clubs, Committees, Economic models of political processes, Bureaucracy, Administrative processes in public organizations, Conflict, Conflict resolution, Alliances, Positive analysis of Policy-Making and implementation; Information and uncertainty, Criteria for Decision-Making under risk and uncertainty, Asymmetric and private information, Search, Learning, and Information, Expectations, Speculations; Intertemporal choice and growth: Intertemporal consumer choice, Life cycle models and saving, Intertemporal firm choice and growth, Investment, or Financing.

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Social choice, Clubs, Committees, Economic models of political processes, Bureaucracy, Administrative processes in public organizations, Conflict, Conflict resolution, Alliances, Positive analysis of Policy-Making and implementation; Information and uncertainty, Criteria for Decision-Making under risk and uncertainty, Asymmetric and private information, Search, Learning, and Information, Expectations, Speculations; Intertemporal choice and growth: Intertemporal consumer choice, Life cycle models and saving, Intertemporal firm choice and growth, Investment, or Financing and other topics related to Social Sciences.

## **Presentation of Content**

In the first article we present, *Strategy for the development of the commercialization of handicrafts in the town of Santa Cruz Pueblo, Calkini*, by BACAB-SANCHEZ, José Rubén, AVILA-ORTEGA Jorge Iván, CASTELLANOS-HERRERA, Annie Vigelmi and SANTOS-VALENCIA, Raúl Alberto, with adscription in the Tecnológico Nacional de México - Instituto Tecnológico Superior de Calkiní and Tecnológico Nacional de México - Instituto Tecnológico de Mérida, as the next article we present, *Strategy to promote the Social and Solidarity Economy in informal microenterprises in Oaxaca: The case of mezcal producers from Santiago Matatlán, Oaxaca. (2020-2023)*, by RÍOS-Y VÁZQUEZ, Othón Cesáreo & FIGUEROA-HERNÁNDEZ, Luis Enrique, with adscription in the Tecnológico Nacional de México/Instituto Tecnológico de Oaxaca, as the next article we present, *Development of management skills for MSMEs, as support for their permanence and regional growth*, by HERNÁNDEZ-HERNÁNDEZ, María Elena, SOTO-RIVAS, Soledad, IRIGOYEN-ARROYO, Luis Ernesto and AGUILAR-PÉREZ, Esmeralda, with adscription in the Tecnológico Nacional de México, Instituto Tecnológico Superior de San Martín Texmelucan, as last article we present, *Organization and Automation in a Food Bank at Mexico*, by DE LA PEÑA-MARTINEZ, Ruth & RUIZ-AYALA José Dolores, with adscription in the Tecnológico Nacional de México, Instituto Tecnológico de la Laguna.

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**Strategy for the development of the commercialization of handicrafts in the town of Santa Cruz Pueblo, Calkini****Estrategia para el desarrollo de la comercialización de las artesanías de la localidad de Santa Cruz Pueblo, Calkini**

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**Abstract**

The purpose of this research is to design a global strategy to improve the conditions of the artisans of Santa Cruz Pueblo. The method is descriptive with a qualitative approach. To obtain the information, interviews were conducted with the artisans of Santa Cruz Pueblo in the municipality of Calkini. There is a strong dependence on the local market for the sale of their products.

**Strategy, Marketing, Handicrafts, Global dependence**

**Resumen**

En esta investigación se establece como finalidad el diseño de una estrategia global que permita mejorar las condiciones de los artesanos de Santa Cruz Pueblo. El método es descriptivo con un enfoque cualitativo. Para la obtención de la información se llevó a cabo entrevistas a los artesanos de la localidad de Santa Cruz Pueblo del municipio de Calkini. Existe una fuerte dependencia del mercado local para la venta de sus productos.

**Estrategia, Comercialización, Artesanía, Dependencia global**

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**Introduction**

The Yucatan Peninsula holds mystical places, with a Mayan history and legacy that are little known, even by the inhabitants of the region themselves; (Bote 2019). One of the three states of the Yucatan Peninsula is Campeche, where a large number of handicrafts are made from different materials. Some of them are made from: natural palm, bull horns, wood, clay. This state is full of customs and traditions that stand out in the whole country, which is why it is visited by people from other states and foreigners. Each municipality and locality that make up the state has something in particular that differentiates them from the others.

The locality of Santa Cruz Pueblo, is a Commissariat with a distance of 10 km from Calkiní. It is populated by 1,908 people (949 men and 959 women). Santa Cruz Pueblo, as it is also called to differentiate it from Santa Cruz Ex Hacienda (Ex Hacienda Santa Cruz), is a Commissariat 10 km from Calkiní. It is populated by 1,908 people (949 men and 959 women).

For the year 2021, the economic activity generated by handicrafts amounted to 153,437 million pesos, which represented 0.6 % of the National Gross Domestic Product (GDP). It generated 479 655 jobs (Instituto Nacional de Estadística, Geografía e Informática [INEGI], 2023).

Despite the fact that the economic activity generated by handicrafts is 0.6% of GDP, there are still challenges to overcome. One of the challenges artisans face is low prices for their products, how to make their creations known, how to sell better. This brings with it a major problem when artisans do not have the necessary knowledge to market, are not organised to do so and there is no interest in their training and preparation. In terms of applying for financial support, it is very risky to get involved because of the low volumes produced and the lack of liquidity faced by the artisans in these localities. In addition to this, another problem is the lack of interest of the younger generations in learning these craft activities, thus affecting the continuity of the family legacy they have.

**Justification**

Handicrafts represent part of the tradition and identity of a people. Their elaboration and sale, which is sometimes difficult for them, makes many artisans abandon their continuity, which is why in this research it is of great importance to analyse the strategy that allows them to improve their commercialisation and sales so that they do not become discouraged and can continue to sell.

**General objective**

To describe the marketing strategy through a review of the sales processes in order to improve the income of the artisans.

**Theoretical framework****Marketing**

The marketing of handicrafts refers to handicraft products to satisfy specific demands for them to internal or external consumers.

Marketing is the set of actions aimed at commercialising products, goods or services. These actions or activities are carried out by organisations, companies and even social groups.

The term has been transformed as expressed by Kotler (1974):

Commodity focus. Characteristic of the initial stage, until 1930, based on the study of how to distribute products.

Institutional approach. The focus of attention is the study of commercial institutions: producer, consumer, wholesaler, retailer, etc. This approach was characteristic of the period 1930-1940.

Functional approach. Developed in the 1950s with the "systems approach" and which focuses on the functions or parts of the system (purchasing, logistics, storage, transport, promotion, pricing, sales, etc.).

Decision approach. This approach is typical of the 1960s and has a strong influence on the decisional research programme of business economics, based on managerial behaviour and decision-making.

Exchange approach. Perspective initiated in the 1970s, which considers that it is the exchange relationship between market agents that represents the object of study.

### **Crafts**

Angelotti (2004) tells us that finding a definition for the concept of crafts is not a simple task, as a brief bibliographic review can warn us about the unequal, contradictory or ambiguous characteristics of some definitions (Reyes, 2006).

Crafts are objects of art made by hand and with little help from machinery; they are generally made in small communities where the entire population is dedicated to handicrafts, as knowledge has been passed down from generation to generation and this is the form of income for many artisan families (Secretaria de Agricultura, Ganadería, Desarrollo Rural y Pesca [SAGARPA], 2012).

To think of the natural wealth used to make handicrafts is to think of a variety of woods, fibres, skins, resins, etc., an enormous diversity of materials used in the manufacture of folk art (Biodiversidad mexicana 2022).

This highlights the large number of forms and objects from these different materials from which they are made.

Crafts are created as a product, durable or ephemeral, whose original function is determined by the social aspect and culture. It is framed in different uses and approaches, such as ceremonial, artistic, domestic, religious, etc.

Craft is defined as an object of community cultural identity, made by continuous manual processes, aided by rudimentary implements and some of mechanical function that lighten the tasks (Fondo Nacional para el Fomento de las Artesanías de México [FONART], 2015).

Crafts can also be defined as a product created from manual work or with the help of simple tools or machines (Feria de artesanos, 2022).

### **Method**

#### **Type of research**

We have a descriptive type of research, where reference is made to the artisans of the locality of Santa Cruz Pueblo in the municipality of Calkini.

#### **Research design**

It is of non-experimental type since in this work an experiment was not done, and also transversal since the collection of information is done through a survey in a single moment (Hernández *et al* 2014).

#### **Population**

The selected population is constituted by the artisans of the locality of Santa Cruz Pueblo in the municipality of Calkini.

#### **Sample**

In this study a sample of 30 artisans from the town of Santa Cruz Pueblo was taken.

#### **Instrument**

The instrument used in the research consisted of a questionnaire containing open-ended questions.

#### **Characteristics of the instrument**

The instrument consists of 5 open questions on marketing aspects. However, there are questions on other topics that are being applied.

### **Results**

Interviews with artisans in the village of Santa Cruz Pueblo were carried out in a general way in order to get a preliminary idea of the marketing process.

When asked what they thought about their sales, 100% mentioned that they had dropped and were only just recovering. In other words, some commented that they are still suffering from the post-pandemic effects. Another comment was that they also have difficulty moving their goods and this is causing a drop in their income.

On the question of where they sell their products, 100% mentioned the local market.

On the question of whether they have ever sold to an intermediary, 40% said yes, but they say that they sell to whoever buys from them, so it is difficult for them to know whether they are intermediaries.

In relation to the question of whether they would like to improve their sales, 100% said yes, i.e. there is a lack of schemes that allow artisan products to be better known and increase the income of artisans.

In reference to the question of what they propose to improve trade, 15% said that they should be given courses on how to sell better, 35% said that they should receive economic support to continue with their activities, 50% mentioned that the dissemination of their products in the municipality and the state should be improved so that more people come to buy their products.

### Strategic proposal

Given that the market for handicrafts is very neglected and there are few places to sell them, the following sales and marketing channels are proposed for the artisans of the town of Santa Cruz Pueblo.

1. A development centre where training courses on the elaboration, creation and forms of sale are held, which will give structure to the artisans and provide them with better training.
2. Points of sale: In the locality so that the visitor to the town can easily find the handicrafts;
3. Point of sale in the municipality of Calkini that allows interaction with other artisans from neighbouring localities and that is a general sales centre for the municipality.
4. At the State level, a point of sale in the capital of the State of Campeche so that a greater number of people know about the handicrafts that are made in the region.

### Discussion

It is important that handicrafts continue to be produced in the localities of the State of Campeche, as there are people who depend on this economic activity, but for this to happen, there is a need to improve the organisational processes for their incursion into the market, which is why it is important to detect how they are selling their products. In this work it was found that 100% sell in the local market, that is, artisans have a high dependence on the local market, as concluded by Bacab *et al* (2018). But it is also important to note that the process should be expanded and the artisans should be made to build a social identity through an interaction of cultural, social and economic capital (Jiang, Y., Xie, CY and Mao, J., 2023).

### Conclusion

In the state of Campeche many families depend on handicraft activities. The municipality of Calkini presents a great tradition in the elaboration of different handicraft products, which come from several generations but with a decrease in their manufacture in many artisan families, derived from an uncertain trade.

As a marketing strategy, to allow for better integration through groups of artisans coordinated by a committee of artisans in the service of the improvement of the artisans and their permanence, which considers aspects of training and conservation of the crafts and to improve the schemes of how to sell better.

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**Strategy to promote the Social and Solidarity Economy in informal microenterprises in Oaxaca: The case of mezcal producers from Santiago Matatlán, Oaxaca. (2020-2023)**

**Estrategia para impulsar la Economía Social y Solidaria en las microempresas informales de Oaxaca: El caso de los productores de mezcal de Santiago Matatlán, Oaxaca. (2020-2023)**

RÍOS-Y VÁZQUEZ, Othón Cesáreo†\*& FIGUEROA-HERNÁNDEZ, Luis Enrique

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**Abstract**

The informal economy has served as a short-term alternative to the lack of formal sector jobs in the capitalist economy, providing a means of livelihood for thousands of people living in marginalized conditions. However, it must be acknowledged that in the long term, the informal economy only contributes to maintaining low productivity and competitiveness in the economy of the state of Oaxaca, thereby reinforcing the vicious cycle of poverty. To formulate a strategy for transitioning informal microenterprises in Oaxaca into formal organizations within the social and solidarity economy, while analyzing the case of mezcal producers in Santiago Matatlán, Oaxaca. We deem it appropriate to conduct a strategic analysis of the threats and opportunities presented by the current external environment and the strengths and weaknesses of the informal economy sector in the state of Oaxaca, starting from the specific case of Santiago Matatlán, Oaxaca. The goal is to identify potential strategies that should be implemented to promote social and solidarity economy in this locality and, in a broader context, in the state of Oaxaca. The aim is to contribute to the formulation of public policies aimed at enhancing the productivity and competitiveness of the economy, specifically in Santiago Matatlán and in the broader context of the state of Oaxaca.

**Capitalist crisis, Informal economy, Social and Solidarity Economy**

**Resumen**

La economía informal ha actuado en el corto plazo como una alternativa a la falta de empleos del sector formal de la economía capitalista, proporcionando a miles de personas que viven en condiciones marginales una forma de ganarse la vida. Sin embargo hay que reconocer que en el largo plazo la economía informal solo contribuye a mantener baja la productividad y competitividad de la economía del estado de Oaxaca, reforzando con ello, el círculo vicioso de la pobreza. El objetivo de esta investigación es formular una estrategia de transición de las microempresas informales de Oaxaca a organizaciones formales de la economía social y solidaria (ESS), analizando el caso de los productores de mezcal de Santiago Matatlán, Oax. Consideramos conveniente hacer un análisis estratégico sobre las amenazas y oportunidades que presenta el actual entorno externo y las fortalezas y debilidades del sector de economía informal del estado de Oaxaca, partiendo del caso particular de la localidad de Santiago Matatlán Oaxaca, para identificar las posibles estrategias que se deben implementar para impulsar la ESS en esta localidad y en general en el estado de Oaxaca. Se pretende contribuir a la formulación de políticas públicas que pretendan mejorar la productividad y competitividad de la economía en particular de Santiago Matatlán y en general del estado de Oaxaca.

**Crisis capitalista, Economía informal, Economía Social y Solidaria**

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## Introduction

The Covid-19 pandemic generated in the period 2020-2022 one of the increasingly continuous crises of global capitalism, which will be prolonged by the inflation caused by the war between Russia and Ukraine. This economic crisis generated in the state of Oaxaca, Mex, and throughout its territory, a decrease in economic activity. This economic crisis generated in the state of Oaxaca, Mex, and throughout its territory, a decrease in economic activity, due to business closures, increased unemployment, loss of income and a decrease in the level of well-being for the population in general, but mainly for the most marginalised and competitively weaker, increasing poverty and widening inequalities in relation to the rest of the country's entities.

This situation has not only been caused by the external environment, but also by the internal environment due to the low productivity and economic competitiveness of the state, linked to the practice of a traditional economy of an important part of the Oaxacan population that resists modern conditions of economic relations, as evidenced by 73.2% of the 570 municipalities in the state.

The seriousness of this situation is that in every crisis of capitalism, the worst part is faced by the population of regions such as Oaxaca, due to the structural weaknesses of low productivity and competitiveness of its business economy.

An alternative to the negative effects of the economic crises of capitalism is the Social and Solidarity Economy (SSE) as a model of productive organisations that seek social welfare and that can take advantage of the potential offered by the economy of the popular sector as one of the alternatives to the economic model of capitalism.

It is in this context that this research aims to contribute to the analysis of the obstacles to taking advantage of the potential of the Oaxacan popular sector economy to promote the social and solidarity economy as a more efficient model of economic organisation that contributes to economic growth and the fight against poverty.

## Background

In Oaxaca, the economic crisis in the period from 2020 to 2022, generated unemployment and underemployment, due to the measures of confinement and social distancing imposed by the government to contain the spread of the Covid-19 pandemic virus; companies had to reduce their staff or close, with the most affected being the least educated population with the lowest income, who have no job security and have greater difficulty finding employment. As a result of this phenomenon, there was a consequent increase in poverty, mainly in the sector of the population with the most precarious economic conditions, due to the loss of their jobs and the difficulty of maintaining family subsistence.

According to the National Institute of Statistics, Geography and Informatics and its National Survey of Occupation and Employment, in 2021 Oaxaca, the unemployment rate was 1.28% and the poverty rate was 41.9%. Of this universe, 43.1% (about 1,762,800 people) were in moderate poverty, while 23.3% were in extreme poverty (about 951,800 people). The percentage of poverty in Oaxaca is 24.4 percentage points higher than the national percentage (INEGI, 2022).

Likewise, the confinement and social distancing necessary to avoid the further spread of the pandemic, pushed humanity as an alternative to make use of information and communication technologies (ICTs) in all its activities, but mainly in economic activities, through the application of digitalisation, automation and artificial intelligence in the production processes of goods and services, which generated considerable labour savings and an increase in unemployment, displacing less skilled labour for the competencies required by the new technologies. It should be noted that this phenomenon of labour marginalisation is a characteristic of the dynamics of capitalism that has occurred in the past.

This situation led the unemployed and marginalised Oaxacan population to follow two strategies to solve their economic subsistence problems: emigration to the United States of America (USA) and family entrepreneurship of informal micro-enterprises, as an alternative to the lack of opportunities for decent and well-paid jobs.

Oaxacan emigration is mostly for economic reasons in the hope of sending remittances in dollars to their families. In 2020, 35,936 people emigrated abroad and 93 out of every 100 went to the United States of America to find work (INEGI, 2021).

Informal entrepreneurship is an initiative to organise informal family and communal micro-enterprises in urban and rural areas, through the production and sale of goods, food or manufactured products for immediate consumption and services related to the transport of food or cleaning for the population close to their immediate environment. Informal economic activities in Mexico and in Oaxaca are very important, as they typically support low unemployment rates. According to INEGI, Oaxaca is one of the entities in the country with the highest rates (81.7%) of labour informality. (Op. Cit.).

### **The problem**

Although we recognise that in the short term, the informal economy has provided a resilient response to the subsistence of thousands of Oaxacans who live in conditions of poverty and marginalisation, we must also recognise that in the long term, as has been the case, it only contributes to maintaining the productivity and competitiveness of the state economy low, thus reinforcing the vicious circle of poverty. In other words, we consider that the main problem limiting the productivity of the Oaxacan economy is the dominance of the informal economy (81.7%), which generates a series of negative consequences that reinforce the vicious circle of poverty and the well-being of the population.

The question that arises is how to gradually formalise the informal economy and how to break the cycle of low productivity, low income, low savings, low investment, low and low-paid employment and poverty? In this research we consider that a policy to gradually end the informal economy and break this vicious circle of poverty by increasing the productivity of the economy of the state of Oaxaca can be implemented by harnessing the potential of the 81.7% of informal economy enterprises in the popular sector of the state of Oaxaca by gradually formalising these enterprises into SSE organisations that can achieve the objectives of social and local welfare and be more productive and competitive in the market.

### **Objective**

The objective of this research is to formulate a strategy to encourage informal microenterprises in Oaxaca to adopt the model of social and solidarity economy social organisations.

### **Theoretical framework**

#### **The economic crisis of neoliberal capitalism**

The economic crisis generated by the Covid-19 pandemic in 2020, occurred in a period of economic and social instability within the capitalist system in which serious problems affecting the economy, institutions and society as a whole are manifested. For Coraggio (2011) the neoliberal capitalism that gained momentum since the 1980s has provoked the economic crises "by the massive exclusion from employment, the erosion of wages and social rights, the expanded concentration of wealth, the liberation of a globalised market fierce in its punishment of those who cannot compete, the expansion of a so-called informal sector that phagocytizes itself by the savage competition for survival".

Economic crises in the capitalist system tend to disproportionately affect the weakest workers for a number of reasons: reduced investment and demand; falling production and economic activity; impact on precarious informal sectors; increased competition for jobs; chain layoffs; reduced wages and benefits; disinvestment in training and skills development. Id est, economic crises in capitalism often affect the weakest workers due to the interaction of factors such as declining demand, falling business investment and lack of labour protections (Ripani, 2022).

#### **The informal economy**

The informal economy began to be analysed in the 19th century by Marx, who observed that unemployment is a particular phenomenon of market capitalism, which he called the reserve army. For Marx, this group acts as a reserve of labour available to be employed at times of high demand and dismissed at times of low demand. The industrial reserve army helps to keep wages low and to put pressure on employed workers to accept less favourable working conditions.

In addition, this reserve of workers also contributes to maintaining capital's control over the labour force and perpetuating inequality in the capitalist system (cited in Chacón, 2021).

According to the International Labour Organisation (2020) "the informal economy is part of the market economy because it produces (legal) goods and services to be sold or for which other types of remuneration are received. It encompasses informal work both in informal enterprises (unregistered small enterprises) and outside them. Informal entrepreneurs and informal workers share an important characteristic: they are not recognised or protected by legal and regulatory frameworks. The informal economy does not include the criminal economy or the reproductive or care economy".

From our perspective, the origins of the informal economy in states such as Oaxaca are rooted in various historical and economic circumstances such as the backwardness of their economic development due to the lack of infrastructure, education and social services that limit opportunities and lead to the proliferation of the informal economy. Such economic inequalities, which have driven Oaxacan workers to migrate to areas with better job opportunities in search of employment and better living conditions, have led to the formation of marginal urban communities that rely on temporary and unregulated work.

In addition, legal and regulatory barriers have made it difficult to create formal enterprises, which encourages people to operate in the informal economy. And, following Betancour (2014), the economic crises of Mexican capitalism have induced the most economically weak to resort to informal activities as a form of subsistence when formal opportunities diminish.

In general, the informal economy emerges as a response to the limitations and challenges people face in their search for employment and livelihoods, and can be both a survival strategy and a reflection of deficiencies in the economic and legal system.

The informal economy generates negative impacts on the Oaxacan economy such as:

- a) Tax evasion, which reduces government revenue to generate development conditions for society.
- b) Lack of access to credit and financing, which limits their ability to invest in their businesses and expand their activities.
- c) Unstable and unsafe working conditions, with low wages, irregular hours and lack of labour protections.
- d) Lack of job security that reduce workers' basic labour rights.
- e) Unfair competition in the markets by offering their products at lower prices.
- f) Economic instability by circumventing state regulations to protect consumers.
- g) Lack of access to health, retirement and unemployment services which harms workers and their basic rights.
- h) Creates a favourable climate for corruption by paying bribes to public officials to avoid regulations.

All this leads to low productivity due to lack of access to training, technologies and financial resources, which limits their ability to compete effectively and contribute to economic growth (Devillard, 1990).

However, we must recognise that the informal economy also has positive aspects such as:

- a) Being an alternative to capitalism in generating employment, as the informal economy provides employment to people who would otherwise not have job opportunities in formal capitalist enterprises, which is especially important in entities such as Oaxaca with low opportunities for decently paid employment;
- b) Labour flexibility, as informal activities often allow for greater flexibility in terms of working hours and conditions, which can be beneficial for certain groups of workers, such as single mothers or the elderly;
- c) Contribution to Gross Domestic Product, although not always officially recorded, the informal economy can represent a significant part of a state's GDP, contributing to economic activity;

d) Economic resilience in times of economic crisis, such as that generated by the Covid-19 pandemic, as the informal economy can act as an alternative by providing people with a way of earning a living when formal opportunities diminish.

Ultimately, the impact of the informal economy on a country's development depends on a number of factors, including the size of the informal economy, government policies, the quality of regulation, and investment in education and training. In many cases, finding ways to gradually integrate informal workers and activities into the formal economy can contribute to sustainable and equitable development.

### **The social and solidarity economy and the informal economy**

An alternative to capitalism has been the social and solidarity economy due to its fundamental differences in terms of values, objectives and organisational structures. This model of social organisation refers to a set of economic and business practices centred on values of solidarity, cooperation, participation and sustainability.

It is an organisational model that, unlike the capitalist enterprise that primarily seeks to maximise the profits of its owner and the economic accumulation of capital, it seeks to maximise the welfare of its members and the community in which it is located. It is based on cooperation and solidarity and seeks to promote social values of equity and sustainability (Fontenau, 2010).

This model, unlike informal micro-enterprises, aims, with the associative strength of the workers or producers, to be a formal social organisation and to have greater economic efficiency and longer life expectancy, through long-term sustainable economic growth, with an interest in social issues and care for the environment, unlike informal micro-enterprises, which only aim to solve their individual or family problem of short-term economic subsistence.

This model of economic organisation can contribute to the informal economy to:

1. Gradual formalisation, as this model seeks to formalise economic activities through the creation of cooperatives, associations and other organisational structures that promote self-management and collective decision-making. This can help informal workers to access legal and social protection and to integrate more effectively into the formal economy.
2. It contributes to capacity building as the SSE often prioritises training and skills development for its members. This can increase productivity and quality of work in the informal economy, thereby improving income opportunities and quality of life for informal workers.
3. SSE initiatives often facilitate access to sources of finance and credit for collective ventures and projects, which helps informal workers to invest in their businesses and expand their activities in a sustainable way.
4. The SSE contributes to the reduction of labour exploitation and precarious conditions in the economy as it seeks to promote fairer and more equitable labour relations, which can improve the working conditions and dignity of informal workers.
5. The SSE encourages innovation in business models and economic approaches. This can inspire informal workers to explore new ways of working and collaborating that enable them to overcome the constraints of informality.
6. The SSE is based on principles of cooperation and solidarity. This can influence the creation of networks and alliances among informal workers, strengthening their collective voice and capacity to advocate for better conditions. (INAES, 2022).

It is important to note that the relationship between the social and solidarity economy and the informal economy can be complex and vary according to the cultural, social and economic context of each country. However, the SSE has the potential to offer a more inclusive and sustainable approach to address some of the challenges associated with economic informality.

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## Methodology

This research is based on the inductive method, through the analysis of the particular case of micro-entrepreneurs producing mezcal in the town of Santiago Matatlán, Oaxaca, in order to make proposals for strategies at the state level. We also rely on qualitative research, as it prioritises the discovery and refinement of research questions through observation, i.e. with data without numerical measurement (Bernal, 2010).

## Scope and limits

This research is based on the strategic analysis of the external and internal environment of informal mezcal micro-producers in the town of Santiago Matatlan Oaxaca, in the period 2020-2023, to identify and formulate a set of strategies to induce the adoption of the organization of a SSE model, without pretending to reach the implementation of these for reasons of time and funding.

## Research design

We were guided by Fred R. David's (2013) strategic planning model. David (2013), which is based on the development of a diagnosis (strategic analysis), in which the external environment is evaluated by identifying the threats and opportunities that the informal economy and the SSE model have, as well as the internal analysis of the strengths and weaknesses that informal microenterprises have to adopt the SSE model for their development, once the main factors of these environments are identified, the next step will be to identify the strategies with the support of the SWOT matrix to achieve the objective of this research.

## Universe and simple

The study universe is comprised of 108 informal mezcal-producing micro-enterprises in Santiago Matatlán, Oaxaca, identified in the field research. The type of sample to be used is the non-probabilistic purposive sample (Muguiru, 2017), which in this case is 57 mezcal micro-producers, it is a purposive sample with interviewees that meet the purpose of the research.

## Strategic analysis

### General characteristics of Santiago Matatlán, Oax.

The town of Santiago Matatlán is located in the central valleys region of the state of Oaxaca, 45 kilometres from the city of Oaxaca, near Matatlán, there are other emblematic places of Oaxaca, such as Mitla and Tlacolula. In the following picture, you can see its location with the blue road.



**Figure 1** Location of Santiago Matatlán, Oax.  
*Source: Google Maps*

It is known worldwide for the production of mezcal. According to CONEVAL data (2022), 58.3% of its population suffers from extreme poverty and 30.5% from extreme poverty. And according to Data México (2020), the economically active population of this locality corresponds to 61.7% of the total inhabitants, who earn an average monthly income of 3,490 Mexican pesos.

In contrast, according to INEGI (2019), in 2015 95.2% of the total national production of mezcal was concentrated in large and medium-sized enterprises, so that only the remaining 4.8% corresponds to micro and small enterprises, which predominate in number in Santiago Matatlán, the "mezcal capital of the world." Furthermore, the existence of 329 mezcal factories has been recorded in Oaxaca, of which 317 are categorised as informal micro-enterprises (Espinosa, et. al., 2017) The above is an example of the low productivity and competitiveness of the existing informal mezcal businesses in Santiago Matatlán, which do not seek growth and only carry out subsistence activities.

**Strategic Analysis****Threats****Legal instability and fiscal risks**

Informal mezcal businesses in Santiago Matatlán often operate without an adequate legal structure, which leaves them vulnerable to legal problems. This can include the possibility of facing sanctions or fines for not complying with legal requirements, such as trademark licenses, government permits to trade alcoholic beverages, and specific regulations for the safe production of the beverage. Moreover, without a clear legal entity, the owners of these businesses may be personally liable in the event of litigation or non-compliance. The problem is highlighted when the majority of these businesses in the locality in question are in breach of the law, which has hindered their expansion in the market.

**Unfair competition**

Formal businesses are obliged to comply with specific regulations, such as obtaining licenses, paying taxes, and meeting quality and safety standards. This can increase their operating costs compared to informal firms that avoid these requirements. Informal firms can offer lower prices due to their lower tax and regulatory burden, and can claim to be following traditional practices, which may gain sympathy among some consumers and make authorities reluctant to take action against them.

However, by avoiding formalisation of enterprises to avoid paying regulations and tax requirements, mezcal producers also reject the possibility of expanding their market, as formalisation and regulation of their productive and commercial activities is necessary to sell their products in other markets, such as the international market, which accentuates their low competition and marginalisation.

**Limited access to finance**

Due to the poor trade of their products and their legal irregularity, informal mezcal enterprises in Santiago Matatlán are unable to prove their income, which prevents them from accessing productive credit to boost the growth of their businesses, as they are unable to demonstrate assets or collateral to back up their commitment to pay.

Moreover, their irregular nature is an additional difficulty in attracting national or foreign investors, as they lack financial records or solid operations to ensure their growth and guarantee profits to investors.

**Inability to participate in public tenders**

Another disadvantage of the informal character of Santiago Matatlán's mezcal enterprises is their inability to access bidding opportunities or government contracts. The informality of Santiago Matatlán's mezcal enterprises generally excludes them from participating in public tenders due to the lack of compliance with the legal, regulatory and financial requirements necessary to compete in these processes. In order to access public tender opportunities, these enterprises must consider legal formalisation, compliance with fiscal and commercial regulations, and improving their execution capacity to meet the standards required in the public sector.

Public tenders are designed to ensure transparency and the proper use of public funds. Informal companies may lack the necessary transparency in their financial operations and cannot provide guarantees that they will manage public funds properly if awarded a contract.

**Labour and health risks**

In the informal mezcal enterprises in Santiago Matatlán, workers are exposed to hazardous working conditions, such as lack of personal protective equipment, lack of safety and risk training, and the handling of dangerous tools during the mezcal production process. They face health and safety risks due to the lack of safety protocols in the mezcal factories.

In addition, mezcal production involves the fermentation and distillation of liquids, which can create public health risks if quality testing of the resulting products is not implemented. Lack of regulation and oversight can result in contaminated or adulterated mezcal, which can cause consumer intoxication.

To address these labour and health risks, it is critical that informal mezcal businesses in Santiago Matatlán and elsewhere consider formalising and complying with required safety and quality regulations and standards.

In addition, adequate training of workers in safe practices and investment in personal protective equipment and safe machinery are essential to reduce risks in the workplace. Supervision and enforcement of specific regulations for mezcal production are also crucial to ensure product quality and safety.

### **Lack of access to social security and employment benefits**

The majority of informal mezcal enterprises in Santiago Matatlán operate outside of legal formality, meaning that they are not registered with labour authorities and do not comply with legal obligations related to social security and labour benefits. Many of the workers in the mezcal factories do not have formal labour contracts that establish employment conditions and benefits. And the lack of proper documentation makes it difficult to implement labour benefits.

In addition, the lack of social security and employment benefits in informal enterprises not only affects workers, but can also have negative consequences for society as a whole, as it can increase the burden on government welfare and health care systems. Many of the informal mezcal enterprises in Santiago Matatlán have a short-term focus and may not consider employee retention and wellbeing as a priority. This can result in a lack of investment in employee benefits.

### **Limitations on market expansion**

Lack of formalisation is often accompanied by a lack of resources and effective marketing and promotion strategies. This limits the ability of informal mezcal enterprises in Santiago Matatlán to reach new customers and promote their products in competitive markets. Operating informally can expose enterprises to legal and fiscal risks that can be an impediment to expansion. Lack of compliance can lead to penalties and litigation, affecting financial stability and the ability to compete in wider markets.

National and international markets often have specific regulations and standards that companies must meet to enter. This includes quality standards, labelling, food safety and trade regulations.

The informality of mezcal companies in Santiago Matatlán means that they are not prepared to meet these requirements, which limits their access to new markets. To compete internationally, informal enterprises must face additional barriers, such as tariffs, quotas, and import and export regulations. These barriers can be difficult to overcome without a solid legal structure and the ability to comply with customs and international trade regulations.

### **Vulnerability to economic changes**

If the Santiago Matatlán region relies heavily on tourism, events such as the Covid-19 pandemic or economic crises can drastically decrease the influx of visitors and thus affect the demand for local products, including mezcal. Lack of formalisation and operating informally make mezcal enterprises in Santiago Matatlán especially vulnerable to economic changes, as they lack the tools and resources to adapt effectively to challenging economic situations. To increase their resilience, these enterprises can consider legal formalisation, diversifying their sources of income, seeking financing, and maintaining sound financial practices.

### **Limited reputation**

The lack of regulation and oversight of informal mezcaleros in Santiago Matatlán may result in products of variable quality and uncertain safety. Consumers may be concerned about the safety of products they purchase from informal enterprises due to the lack of quality control and the possibility of contamination or adulteration, and the lack of proper documentation, record keeping, and reporting may result in the perception that they are hiding information or evading taxes, causing potential customers to choose to purchase reliable products from regularised enterprises.

### **Lack of access to business training and resources**

Training programmes and resources tend to have limited assets and quotas, and organisers prioritise enterprises that have the most significant growth potential and economic impact for Oaxacan regional development.

Informal mezcal enterprises are often seen as less promising as they refuse to formalise their businesses and avoid regulating and certifying their products, which makes it difficult for them to participate in calls for support from public institutions.

## **Opportunities**

### **Financing informal enterprises**

There are some cooperatives and savings funds that grant productive loans to informal enterprises, which, despite not being able to demonstrate a fixed income, make it easier to obtain loans. Also, government institutions sometimes offer support programmes for small enterprises, including informal ones, with preferential interest rates or partial guarantees. These loans allow informal mezcal enterprises to access resources to boost their growth even outside the legal framework. In addition, there are non-governmental organisations that provide advice to entrepreneurs and formal companies to obtain micro-credits and investment. And the advantage of the mezcal producers of Santiago Matatlán is the potential for growth of their businesses if they become regularised and expand their market.

### **Legal and labour rights protection**

There are collectives and associations that offer free training and legal advice that mezcal entrepreneurs can access, which encourage the formalisation of their businesses by explaining the advantages and regulatory procedures. In this way, fostering the regulation of informal mezcal enterprises favours the attraction of professional and better trained workers, which generates a mutual benefit in favour of the growth of these enterprises.

### **Participation in public tenders**

Encouraging the formalisation of mezcal enterprises can allow them to participate in public tenders by governmental bodies, which benefits them with the awarding of contracts for the sale of their products. This can also favour the image of the company to compete in new markets.

### **Access to international markets**

Mezcal companies in Santiago Matatlán can trade their products abroad if they carry out the corresponding regulatory procedures in the corresponding instances, as these are a fundamental requirement to move their goods through customs. They even need to be formalised both in the country of origin and abroad.

### **Improved image and reputation**

Since an informal enterprise generates distrust in the market due to its lack of sanitary regulation or suspicious production processes, encouraging its formalisation can help mezcal producers in Santiago Matatlán to attract new clients, as well as secure their current clientele by establishing quality protocols to ensure their products.

### **Compliance with quality and safety standards**

By regulating production processes and certifying their goods, mezcal companies can avoid possible sanctions, the risk of which is greater in their informal status, as well as obtain noticeable improvements in their production in favour of their optimisation, which translates into cost reduction, maximisation of resources and assurance of the quality of their products. A fundamental requirement for the mezcal producers of Santiago Matatlán is the certification of the liquor in specialised laboratories, in order to avoid alterations in the drink that could be negative for consumers.

### **Reducing legal and fiscal risks**

Due to the fact that informal mezcal companies in Santiago Matatlán carry out commercial activities without being registered with the tax authorities, there is a risk of receiving excessive monetary fines that directly affect the economy of mezcal producers. This is why regularising these enterprises can allow them to carry out economic activities without the risk of receiving legal or fiscal sanctions.

### **Government support**

The formalisation of the mezcal enterprises in Santiago Matatlán allows them to participate in government support programmes, which grant credits or goods in kind that boost the growth of the enterprises.

In addition, through regulation and the payment of fees, the state obtains higher revenues that are converted into infrastructure and more social programmes, which benefit the enterprises themselves.

### **Access to training and business development programmes**

There are a number of programmes that offer free or low-cost advice to businesses with growth potential, the main requirement of which is proper and legitimate documentation. Therefore, if the regulation of mezcal enterprises in Santiago Matatlán is encouraged, they can have access to courses and training of various kinds that favour their growth through the optimisation of administrative, productive and commercial processes.

### **Weaknesses**

#### **Traditional economic rationality**

While traditionalist rationality can have benefits in preserving local culture and identity, it can also limit opportunities for growth and efficiency in informal mezcal enterprises. It is often a challenge to find a balance between preserving traditions and adopting modern practices that can improve product quality, operational efficiency and access to new markets.

In Santiago Matatlán, distrust of government institutions and outside companies is high. This leads informal mezcal producers to opt for management practices and structures that avoid external intervention, resulting in subsistence practices and low growth. In addition, these enterprises often value autonomy and independence in their decision-making, so they see modern regulations and business practices as a threat to their freedom and control over their operations, mainly towards the loss of the qualities of artisanal mezcal.

#### **Low business productivity**

Lack of productive training and poor working conditions not only affect mezcal factory workers, but can also have a negative impact on the quality of the product and, ultimately, on the competitiveness of enterprises in the market.

To address these issues, it is essential to promote the legal formalisation of informal enterprises, raise awareness of labour rights, and provide access to training programmes and business counselling.

For many informal mezcal enterprises, the main focus may be on survival rather than constant improvement. They may be more concerned with staying afloat than investing in training and labour improvements. And if operating in a local market with little competition, informal enterprises may not feel the pressure to improve their operations or working conditions in order to compete. Resistance to change and adherence to traditional practices may make informal mezcal enterprises in Santiago Matatlán reluctant to adopt new ways of operating, even if they could improve product quality and labour conditions. Lack of incentives for innovation

For most informal mezcal enterprises in Santiago Matatlán, the primary goal is survival rather than innovation. They may be more concerned with staying afloat and meeting the existing demands of the local clientele than with investing in research and development to expand their market. Moreover, their informal nature prevents them from accessing government support to boost innovation in their production processes, not to mention their resistance to change. Mezcal production is often based on deep-rooted cultural traditions and practices that have been passed down from generation to generation. This tradition can lead to resistance to change and reluctance to adopt new technologies or production practices.

#### **Lack of investment in human capital**

Lack of training and professional development makes mezcal enterprises in Santiago Matatlán less likely to innovate in their production processes and products. Innovation often requires technical knowledge and specific skills, but due to the reluctance to modify their mezcal production processes, it is difficult to optimise their business activities.

#### **Labour instability**

Informality in mezcal enterprises in Santiago Matatlán results in precarious working conditions and increased labour instability for mezcal factory workers.

This often puts employees in a vulnerable position and has negative effects on their financial well-being and job security, hindering the possibility of their professional development and accentuating their low competitiveness. In addition, excessive working hours and lack of job security can lead to the risk that mezcal companies may be fined if their workers complain to the authorities, which can have a negative impact on companies that without registration or savings funds may cease their activities.

### **Commercial intermediation**

Mezcal resellers buy products in bulk from informal enterprises in Santiago Matatlán at lower prices and then resell them at a higher price for higher profits. This reduces the profit margin of mezcal producers, which affects the profitability of their businesses and prevents their growth. By relying heavily on resellers to sell their products, informal mezcal enterprises have less control over the distribution and marketing of their products. This makes them vulnerable to changes in the resellers' business strategy or ethics. In addition, because the resellers have formal businesses, they can access new markets, while the producers do not get a fair income for the work invested.

### **The environmental impact of mezcal**

Mezcal production generates organic waste, such as agave fibres after juice extraction, which if not properly managed can contaminate soil and water. The lack of regulation of the production practices of informal mezcal enterprises in Santiago Matatlán has resulted in the contamination of its water resources and potentially usable land for planting in the locality. Mezcal producers may not be aware of the environmental impacts of their operations or may not consider environmental sustainability as a priority due to resistance to changing their traditional procedures or investing in training.

### **Strengths**

#### **Human and natural resources**

Due to knowledge passed down through generations, the planting of agave, which is the raw material for mezcal production, has allowed mezcal producers to reduce costs in their production operations.

In most of the informal mezcal enterprises, the members of the nuclear family are the main labour force, which avoids expenses in hiring external workers and possible training in case of lack of knowledge about mezcal production.

### **Collaboration and mutual support**

In Santiago Matatlán, mezcal production is a particular element of the cultural capital of the inhabitants, which explains the huge influx of mezcal factories in the region. This allows for collaborative relationships between producers, who work together during the planting and harvesting of maguey, as well as solidarity practices in the acquisition of inputs such as glass bottles in periods of scarcity from suppliers.

### **Community participation**

A relevant event for the community of Santiago Matatlán is the collective participation in the defence of the Denomination of Origin of mezcal, as this distillate is a good that gives identity to the inhabitants and prevents outsiders from taking advantage of it.

### **Potential for networks and associations**

There is a notable willingness on the part of most mezcal producers to form part of collective projects for the production and trade of the region's liquor, as they are aware of the shortcomings of their particular enterprises in contrast to the large companies that have better human, technological and financial resources. For this reason, there have been collaborations between producers, such as the transfer of raw materials or the loan of facilities, as a way of generating or preserving beneficial relationships between mezcaleros.

### **Strategic formulation**

The previous strategic analysis was the basis to feed the SWOT Matrix and to identify the following elements of the overall strategy:

General long-term strategic objective (three years): to promote the development of social and solidarity economy organisations in the informal mezcal-producing micro-enterprises of Santiago Matatlán, Oaxaca.

Long-term general strategy: To reduce the informal economy of mezcal producers in Santiago Matatlán Oaxaca through the promotion of facilities to adopt the social and solidarity economy organisation model, with the support of the following programmes:

- Training programme for informal micro-entrepreneurs on the advantages of the SSE model.
- Simplified formalisation programme for SSE organisations.
- Programme of tax incentives for SSE organisations.
- Programme for the promotion of formal markets.
- Social security access programme.

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## Development of management skills for MSMEs, as support for their permanence and regional growth

### Desarrollo de habilidades directivas para las Mipymes como apoyo para su permanencia y crecimiento regional

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#### Abstract

Micro, small and medium-sized businesses play an important role in the economic development of nations, both in industrialized countries and in those with a lower level of development, however there are various factors that limit them, such as the lack of management skills of its managers, which is why this work seeks to identify the skills profile of the director of the MSMEs, in the San Martín Texmelucan region, in order to be in the position of proposing a means that helps to remedy this lack, according to the particular characteristics of this type of business. The analysis and proposal of this work are based on the study and results of the research titled: Training and development of skills of the directors of Mypes in Latin America, a project in which they participated as members and surveyors of the Latin American Studies Network in Administration and Business, in 2022. Using the R program version 4.0.2 (2020), the values of the mean, standard deviation and Cronbach's alpha coefficient were determined. These values presented have a reliability of values greater than 0.8 in their Cronbach's alpha recommended by Nunnally and Bernstein 199.

#### Resumen

Las micro, pequeñas y medianas empresas desempeñan un papel importante en el desarrollo económico de las naciones, tanto en los países industrializados, como en los de menor grado de desarrollo, sin embargo hay diversos factores que las limitan, como es la falta de habilidades directivas de sus directivos, por lo cual el presente trabajo busca identificar el perfil de habilidades del director de la Mipymes, de la región de San Martín Texmelucan, para poder estar en la posición de proponer un medio que ayude a subsanar dicha carencia, de acuerdo a las características particulares de este tipo de negocios. El análisis y propuesta del presente trabajo están fundamentados, en el estudio y resultados de la investigación titulada: Capacitación y desarrollo de habilidades de los directores de las Mypes de Latinoamérica, proyecto en el que se participo como miembros y encuestadores de la Red de Estudios Latinoamericanos en Administración y Negocios, en 2022. Mediante el programa R versión 4.0.2 (2020) se determinaron los valores de la media, la desviación estándar y del coeficiente alfa de Cronbach. Estos valores que se presentan tienen una fiabilidad de valores superiores al 0.8 en su alfa de Cronbach recomendado por Nunnally y Bernstein 1994.

**Development, Management Skills, MSMEs, Region**

**Desarrollo, Habilidades Directivas, Mipymes, Región**

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## Introduction

Micro, small and medium-sized enterprises (MSMEs) play an important role in the country's economy, they have an impact on its indicators such as the gross domestic product (GDP), they are the fundamental role in the subsistence of many families, the National Institute of Statistics and Geography (INEGI, 2021), in its Study on Business Demographics 2021 (EDN, 2021) indicated that in Mexico in 2019, there were 4.9 million establishments in the private and parastatal sector, and according to the 2019 Economic Censuses (EC) mentioned that 99.8 % of these belonged to MSMEs (INEGI, 2022).

Even with the intention of highlighting the importance of MSMEs and raising awareness of their contribution to the Sustainable Development Goals and the global economy, the General Assembly of the United Nations (UN) declared 27 June as Micro, Small and Medium Enterprises Day (United Nations, 2023).

Due to their importance, the Ministry of Economy and the Ministry of Finance and Public Credit have defined the stratification under which micro, small and medium-sized enterprises will be classified, which is found in article 3, section III, of the Law for the Development of the Competitiveness of Micro, Small and Medium-sized Enterprises, resulting in a classification according to the sector to which they belong and the number of employees. Table 1.

Stratification by number of workers			
Sector/ Size	Industry	Trade	Service
Micro	0 -10	0 -10	0 -10
Small	11 - 50	11 - 30	11 - 50
Median	51 - 250	31 - 100	51 - 100

**Table 1** Stratification under which MSMEs will be categorised

Source: Law for the Development of Competitiveness of Micro, Small and Medium Enterprises, 2023

This includes agricultural, livestock, forestry, fishing, aquaculture, mining, crafts and cultural goods producers, as well as tourism and cultural service providers.

## Problematic

The development and health of a MSME, regardless of its product or line of business, is affected by its own characteristics or weaknesses that cause a series of problems that impede its growth, and consequently its competitiveness in the business environment, among the various negative factors we can highlight the following:

- Difficulty in obtaining external financing.
- Higher input costs, due to the lower volume of purchases.
- They do not have sufficient reach in terms of publicity, recognition and confidence to access more clients or to ally themselves with production chains.
- Lack of knowledge of administrative or accounting issues.
- Restrictions on access to state-of-the-art technology or innovation.
- Limitations in working capital that allow them to face crises for long periods (Fonseca, 2022).

All of these factors are even more important if we highlight the fact that most of these companies are family businesses, where decision-making for the different areas of the company is concentrated in the hands of the owner; the complexity of their tasks and functions is critical, successfully operating the business requires the expertise and multiple skills of the director or owner, which in many cases, due to the profile of the owner or director of the MSE, are unknown or non-existent or have not been developed in an optimal manner.

As mentioned, the various factors that affect the development of MSEs are not limited to a country or region, and companies of this type in the region of San Martin Texmelucan, in the state of Puebla, are no exception.

For this reason, the present project presents solutions to improve the managerial skills of the director of these businesses, constituting strategies and generating support according to the characteristics and size of these companies that include means, techniques and tools, which will favour their development to be more competitive and achieve the desired results and yields.

It is worth mentioning that the work on this project has been carried out with a team made up of research professors and students from the Public Accountancy degree programme at the Instituto Tecnológico Superior de San Martín Texmelucan (ITSSMT),

### General Objective

To propose ways of improving the managerial skills of those in charge of MSMEs in the San Martín Texmelucan region.

### Methodology

The development of this research was based on a non-experimental, transversal, descriptive methodology. This provided the necessary tools and instruments for the collection and analysis of the information obtained throughout the research. The research was proposed to be non-experimental, since the researchers only observe the context in which micro and small enterprises are developed with respect to the managerial skills of the enterprises and based on this it was analysed in order to obtain the information.

The research was conducted as a cross-sectional study, as it focused on the analysis of information collected from a specific population at a specific time without the need for further research. At the same time, the descriptive method was used, as it allowed the information obtained to be collected, analysed and interpreted.

The present research is within a quantitative research approach because it makes use of data collection and statistical means.

The development of this research was based on the study and results of the research entitled: Training and development of skills of managers of MSMEs in Latin America, a project in which the researchers of the academic staff of the Public Accountant career of the ITSSMT participated as members and surveyors of the Latin American Studies Network in Administration and Business (ReLAyN) in the year 2022. The objective of the study was to determine the level of the managerial skills profile of the director of micro and small enterprises in the municipality of San Martín Texmelucan.

According to Franco, Gonzalez, Hernández & Llamas (2022): The fieldwork to apply the survey was over a period of 5 months in 2022, from 3 March to 22 July 2022.

In the case of San Martín Texmelucan, Puebla, the sample was composed of 397 MSMEs, dedicated to commercial, transformation and service activities.

Data collection was carried out through an online form and face-to-face contact with the entrepreneur.

### Results

Thanks to the results of the ReLAyN study, it was possible to identify the profile of the managers in relation to managerial skills, among which the following can be highlighted:

- The average age of the participating principals is 40 years old.
- 255 (64.23%) are male and 142 (35.77%) are female; 75.57% have children.
- Their marital status indicates that 39.09% are single and 60.91% are married or in union.
- Regarding the level of education of the directors, 3.85% have no education, 6.15% have completed primary school, 8.46% secondary school, 14.36% have a technical career, 44.62% have a baccalaureate, 21.03% have a bachelor's degree and 1.54% have a postgraduate degree.

Of the main activities in which the enterprises are engaged, the most representative was wholesale and retail trade with 63% of the total sample and the least represented was manufacturing industries with 3.4%.

The formally established enterprises represented 53.98% and in the informal market 46.02%.

The total number of workers in the sample enterprises was 2,963, of which 1,461 (49.31%) were women and 1,502 (50.69%) were men; in addition, 729 (24.6%) were family members of the directors.

In relation to training, it was found that only 1,641 (45.79%) of the workers received training in the last year, 791 (48.2%) women and 850 (51.8%) men.

Table 2 presents the descriptive analysis of the values obtained for each of the items of the variables, in addition to the general averages, the minimum and maximum values obtained are presented, allowing us to see the strongest and weakest areas specific to each managerial skill.

Variable	Alpha	Half	Standard Deviation
Troubleshooting	0.867	4.267	0.668
Conflict management	0.857	4.228	0.674
Communication	0.859	4.289	0.665
Coaching and feedback	0.882	4.249	0.631
Motivation	0.866	4.317	0.679
Delegate	0.867	4.304	0.67
Teamwork	0.875	4.321	0.653
Leadership	0.87	4.245	0.673
Training	0.904	4.196	0.718

**Table 2** Descriptive statistics for the sample of San Martín Texmelucan, Puebla

Source: Franco, Gonzalez, Hernández & Llamas (2022)

Similarly, answers were given to questions that were triggers for proposing means of support for managers, among which the following stand out.

1. What are the skills that predominate or need to be developed in the directors of the MSMEs? It was found that managers need training, teamwork and leadership.
2. What are their training needs in management skills? It was found that they need training in coaching, group management and effective leadership.
3. With regard to whether the manager perceives his/her training needs according to his/her own management skills, the answer is yes, but he/she considers that it is not necessary to attend such courses.
4. What is the manager's perspective and opinion on training? Managers mention that it is an unnecessary expense as there is no time to invest in such training and they would no longer receive income or carry out daily activities.

## Proposal

Once the profile of the manager in the San Martín Texmelucan region was identified, in relation to the managerial skills that he/she possesses and consequently the discovery of those that he/she lacks, it was possible to propose ways to improve or acquire them, which in this case the proposal was a training programme, which included the material for its development.

The first part of the proposal was to define the participants who would develop it, so it was agreed that they would be research professors and students of the Professional Residency Programme of the Public Accountant career of the ITSSMT and members of the Institute's Incubator.

The second part was the development of training resources to cover the needs related to the development and acquisition of management skills, this was developed by the research teachers and students of the Public Accountant career of ITSSMT who carried out their Professional Residency with these teachers.

The generation of training means for the development and acquisition of managerial skills consisted of the creation of a training programme, which included the design of two courses, thereby covering the first and second questions regarding the managerial skills that need to be developed in the managers of MSMEs. One of the courses covered the topic of Coaching and Leadership and the second covered the topic of Motivation and Teamwork, each of which included a diagnostic test to identify the state of the MSME managers and staff at the start of the course in relation to the management skills to be developed. Similarly, content and materials were generated to develop the two courses, which consisted of theoretical content, videos and dynamics, and finally a satisfaction survey.

In order to address question three, related to the fact that managers do not have the initiative to go to institutions in order to improve their management skills, the programme proposal includes going to train managers and staff of MSMEs in their own facilities, free of charge, which would cover the last question, for MSMEs these courses will not generate any expenses.

The third part consisted of training teachers who participate in the Institutional Incubator, so that they could replicate the courses to the entrepreneurs who come to the incubator, to students of social services or to other residents, so that they can replicate these courses to other managers of MSMEs in the region, and thus continue with this programme once the participating students conclude their residency period.

### Conclusions

Successful business operation requires expertise and multiple skills of the MSME owner or director, which in many cases due to their profile are unknown or non-existent or have not been optimally developed, so the result of this project is a support tailored to the characteristics and size of these companies, which include means, techniques and tools, which will promote their development to be more competitive and achieve the desired results and performance.

And not only these companies will benefit, at the same time the students will have the opportunity to put into practice the knowledge acquired in the classroom in a real scenario, thus forming an integrated learning. Similarly, by giving continuity to this management skills development programme, it will be possible to scale up to form part of a Professional Residency project, with which students will be able to present themselves to MSMEs with a defined project, since sometimes when applying to these companies for a space to cover this academic requirement, they are denied because they do not have a project to develop, but with this programme it will only be necessary to put it into practice.

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## Organization and Automation in a Food Bank at Mexico

### Organización y Automatización en un Banco de Alimentos en México

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#### Abstract

*Goals:* Analyze the organization and operation of a Food Bank (BA) in Torreón, Coahuila, Mexico. Implement best practices administrative, human resources, and BA processes management. Automate the operation of said BA. *Methodology:* Strategic reflection of the business and technology, to optimize the operation of the BA. (a) In the administrative part: Ishikawa Methodology, 5'S, Analysis and development of positions and best practices in safety (b) In administrative management: Matrix Methodology, Deming Improvement Cycle (PHEA), Waste management and losses, Organizational Culture (Affective Commitment and normalization) and (c) In automation: analysis, design and development of software, through the Iterative and Incremental Software Development Process. *Contribution:* Optimization in the administration, operation and organizational behavior in a BA, through the implementation of good business practices. Development of software for the administrative management of processes.

**Food Bank, Strategic Administration, Software Development**

#### Resumen

*Objetivos:* Analizar la organización y operación de un Banco de Alimentos (BA) en Torreón, Coahuila, México. Implantar las mejores prácticas administrativas, recursos humanos, y gestión de procesos del BA. Automatizar la operación de dicho BA. *Metodología:* Reflexión estratégica del negocio y de la tecnología, para optimizar la operación del BA. (a) En la parte administrativa: Metodología de Ishikawa, 5'S, Análisis y desarrollo de puestos y mejores prácticas en seguridad (b) En la gestión administrativa: Metodología Matricial, Ciclo de Mejora de Deming (PHEA), Manejo de residuos y mermas, Cultura Organizacional (Compromiso afectivo y normalización) y (c) En automatización: análisis, diseño y desarrollo de software, mediante el Proceso de Desarrollo de Software Iterativo e Incremental. *Contribución:* Optimización en la administración, operación y comportamiento organizacional en un BA, mediante la implementación de buenas prácticas empresariales. Desarrollo de un software para la gestión administrativa de los procesos.

**Banco de Alimentos, Administración Estratégica, Desarrollo de Software**

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## Introduction

Contextualization. The Torreón Food Bank (BAT) belongs to the Mexican Association of Food Banks (AMBA) (BAMX, 2020), which, in turn, is part of The Global FoodBanking Network (Global FoodBanking, 2022). Currently, AMBA brings together 64 Food Banks (FB), whose mission is to support individuals who, due to their socio-economic situation, cannot meet their basic nutritional needs and also provide assistance in emergency and disaster situations. BAT receives between 130 and 170 tons of products per month, including perishables, non-perishables, and cleaning products. It collaborates with more than 26 companies that provide cash and product donations.

The Food Bank benefits an average of 22,000 people per month, spanning 85 institutions and 51 rural communities. The institutions include 18 for children, 14 dining facilities, three for individuals with different abilities, six elderly care homes, 12 rehabilitation centers, and 32 categorized as Other Institutions. In essence, the basic processes are: (a) Collection of donations, (b) Packaging and organization of products in the warehouse, (c) Distribution to beneficiaries, (d) Preparation of reports for the board of directors, AMBA, as well as government agencies regulating the operation of Non-Governmental Organizations (NGOs) such as the Food Bank.



**Figure 1** Location of banks nationwide

Significance. Optimizing the administration and operation of the Food Bank has several dimensions: (a) Improving the working conditions of staff, (b) Facilitating the generation of information for transparency, trust, and compliance with current regulations, (c) Resource optimization and waste reduction, (d) Creating the conducive environment for the organization's effectiveness and growth.

## Added Value

The techniques employed mostly focus on organizational development and are accompanied by a well-tested methodology for software development.

## Problem to Address

The organization's administration and processes are manually recorded in spreadsheets, which, while helpful, do not provide the usability and effectiveness of administrative software. The project involved a thorough review of the organizational structure and its operation, identifying and implementing administrative or operational improvements through structural and operational changes, and automation, with the development of custom software.

## Hypothesis

Professionalization demonstrates organizational culture and increases process innovation and the use of information and communication technologies.



**Figure 2** Torreón food bank facilities

## Literature Review

Contemporary society is currently experiencing a moment of crisis—economic, political, and social—a technological revolution in information, and the effects of globalization. Inevitably, this scenario has compelled the exploration of new forms of social interaction among actors. The roles of these actors have been conceptualized from various perspectives, evolving in response to environmental needs.

The concept of civil society has historically been addressed by classical authors such as Hegel, Marx, and Gramsci (Dias, 2019), as well as contemporary figures like Keane, Wolf, and Cohen. They have defined the role of civil society in diverse ways, ranging from the expression of citizens' struggle against authoritarianism and capitalism, to social participation in defending human or political rights in the public sphere. A more contemporary conceptualization suggests a role of influence to promote social change, addressing local, regional, national, and global needs (García-Arranz, 2014).

Currently, civil society is considered the sphere of relationships among individuals, groups, and organizations that operate outside the power structures characterizing governmental organizations. Civil society is divided into the profit sector and the non-profit sector, also known as the Third Sector. According to the Johns Hopkins University Nonprofit Sector Study (Salamon and Anheier, 1999, cited by Fundación BBVA, 2017), the characteristics of Third Sector Organizations (TSOs) include:

- a) Structure: Involves a certain degree of formality and permanence over time.
- b) Autonomy: Signifies the freedom of an entity to pursue its interests through its own regulations and powers, without any organizational or functional dependencies on any other organization, public or private.
- c) Non-profit: Meaning they do not seek any form of profit in their transactions.
- d) Voluntary: Implies free affiliation or voluntary adherence in general.
- e) Social and public benefit: Signifying a pursuit of improving social welfare or living conditions.

The prototypical forms of third sector associations are Civil Organizations (COs), Non-Governmental Organizations (NGOs), and Civil Society Organizations (CSOs). Regardless of their designation, these organizations will be referred to as Third Sector Organizations (TSOs).

The existence of TSOs is not a recent phenomenon in the world; they have existed since the 19th century, with one of the oldest being the Red Cross. TSOs, besides serving as consultants to the United Nations (UN), have also acted at the country level as observers, managers, or agents of citizen social pressure, among other roles. From the 1990s onwards, two phenomena emerged: a shift in the role of the state in providing public services and a new model of economic and social policy, neoliberalism. These led to increased gaps between societal sectors and, consequently, an increase in the participation of TSOs in managing social programs (UN, 2021).

For Latin American countries, the situation of exclusion was more profound for a significant portion of the population that, lacking means to meet their needs in the market and in the absence of the state as a provider, required the action of civil society to establish a sustainable operating framework.

### **Socially Responsible Businesses**

In recent years, the business world has been challenged and positively impacted by the idea that, in addition to being profitable, a company should be socially responsible. But what does it mean for a company to be socially responsible? Not long ago, Corporate Social Responsibility (CSR) was understood as creating jobs, paying taxes, and generating profits for shareholders. Today, this idea is no longer sufficient or acceptable.

Society expects companies to take actions beyond offering quality goods or services within a legal framework. It expects companies to consider and take into account the impacts they generate in society—both positive and negative—in the lives of their employees, the communities where they operate, the environment, and overall, in all areas and social groups they interact with. It expects companies to create value for all groups related to the company. This vision has involved a progressive process, evolving from considering socially responsible companies as those making donations to a focus on making their contributions to the community more efficient. This evolution led from the concept of corporate philanthropy to the concept of the company's social investment.

Later on, companies realized that social responsibility could not be limited to their relationship with the external community but had to include all other areas and groups related to the company. An integrated vision incorporated into the business strategy emerged. This is how a socially responsible company is defined—one that incorporates a social vision into its business strategy through policies and programs, beyond its legal obligations, seeking to satisfactorily respond to the expectations of its various stakeholders regarding its performance (Anáhuac, 2021).

Currently, significant progress has been made in understanding the scope of CSR, creating a favorable environment for its expansion throughout the business sector. The benefits of incorporating social responsibility into a business strategy are clear: consumer sympathy, greater employee loyalty, increased investor trust, ease in decision-making processes, optimization of human and material resources, and, in general, the establishment of collective processes of continuous improvement for the benefit of the company and society as a whole. A Socially Responsible Company is one that adheres to a set of standards and principles regarding social, economic, and environmental reality, based on values that make it a more productive company.

A Socially Responsible Company establishes ethics, morality, and values as its main standards in its organizational culture. These should be based on human dignity, the common good, social participation, the principle of solidarity, quality of life, environmental care, human development, transparency, scientific and ethical development. The social responsibility of the company is a combination of legal, ethical, moral, and environmental aspects and is a voluntary decision, not imposed, even though there is certain regulatory framework on the subject.

A company is truly better when, in addition to achieving its business objectives, it contributes benefits to its employees, suppliers, the families of its workers, its environment, and the environment.

## Regulations

(a) ISO 26000 Standard: ISO 26000 is a framework or guide for the development of Social Responsibility models. The International Organization for Standardization (ISO) decided to develop an international standard that provides guidance on Social Responsibility (SR). The aim is to encourage voluntary commitment to SR. It is becoming a requirement for public and private organizations to maintain socially responsible commitments, shared by major stakeholder groups participating in the ISO 26000 working group. This group includes representatives from industry, government, workers, consumers, non-governmental organizations, and others.

ISO 26000 contains voluntary guidelines, not requirements, and is not intended for use as a certification standard like ISO 9001, ISO 14001, among others. It is designed to be used voluntarily by organizations of all types, both in the public and private sectors, in developed and developing countries. The standard will help organizations operate in a socially responsible manner, meeting the requirements society demands. ISO 26000 is supported by seven fundamental subjects, as indicated below:

- a) Subject 1: Organization's governance.
- b) Subject 2: Human Rights.
- c) Subject 3: Labor Practices.
- d) Subject 4: Environment.
- e) Subject 5: Fair Operating Practices.
- f) Subject 6: Consumer Issues.
- g) Subject 7: Active Engagement and Community Development.

Subject number seven justifies the work carried out by the Food Bank in the link between Socially Responsible Companies and Non-Governmental Organizations (ISO, 2010).

(b) NOM-169-SSA1-1998: This Mexican official standard applies to social food assistance for at-risk groups. This Official Mexican Standard establishes the operation criteria for social food assistance programs aimed at at-risk and vulnerable groups.

The application of this standard is mandatory nationwide for public, social, and private sector locations and facilities that provide food assistance to at-risk and vulnerable groups, primarily children, adults, the elderly, and families whose vulnerability increases due to adverse socioeconomic conditions, natural phenomena, extraordinary situations, and incapacity.

Actions and programs to contribute to the food provision for at-risk groups must be carried out in close coordination between federal entities, within the framework of inter-institutional and intersectoral agreement, NGOs, and international organizations. This is to distribute the subject population, according to the responsibilities of each governmental and non-governmental agency (Yumpu, 2014).

### **Intellectual and Behavioral Capacity Testing**

Intellectual and behavioral capacity testing involved the use of the Raven Progressive Matrices test to assess intelligence levels or intellectual coefficients through analogies, figure comparisons, and interpretation of figurative elements (Psychiatrists Online, 2019). Additionally, the HTP test or House-Tree-Person test, using a technique with drawing projection, characterizes individuals' abilities to react to environmental pressures.

It extracts the relationship of the person with the environment, providing information related to the problems and concerns of the subject in question (Buck, 2020). The Domino Test is used to measure general intelligence known as the G factor, allowing the evaluation of the ability to conceptualize, applying systematic reasoning to new situations or given problems (Rubio, 2022).

### **Software Development**

Given the complexity of developing custom software applications, a methodological approach must be undertaken to ensure the successful completion of the project. All stages are essential—analysis, design, code development, testing (both code and usability), until its release. In an iterative and incremental development, the project is divided according to each business requirement into temporary blocks or modules, which will be fully developed in each iteration (Nimble, 2023).

### **Methodology**

The analysis of company activities was conducted using Porter's Value Chain methodology. This approach considers primary activities: (a) Internal Logistics, (b) Operations, (c) External Logistics, (d) Marketing and Sales, and (e) Services; as well as support activities: (a) Company Infrastructure, (b) Human Resources Management, (c) Technological Development, and (d) Procurement (Dynamics, 2020).

Regarding process quality and productivity, the 5S methodology was considered—selection, systematization, cleaning, standardization, and self-discipline (by its Japanese initials). In general terms, it represents a culture of quality achieved persistently and seemingly naturally in actions, fostering habits throughout the organization in an evolutionary process towards continuous improvement. It involves good practices from the Deming cycle and the Ishikawa methodology (Piñero, Vivas, & Flores, 2018).

For the automation of administration and processes, a custom software was developed using the waterfall, incremental, and iterative methodology.

### **Development**

The initial phase of this study involved evaluating the performance of the organization's activities within the food processing using Porter's Value Chain model. This model identifies primary activities aimed at creating value for the end customer (beneficiary). Strategic management of these activities contributes to identifying sources of competitive advantages, including supporting activities that serve as a backbone and enable the company.

Our research was applied to a food bank engaged in the collection, storage, and distribution of food to communities and institutions as beneficiaries. The total quantity of food distributed averaged 150 tons per month, with a market cost of nearly millions of pesos across 85 institutions and 51 communities.

To achieve this, three instruments were designed to gather information: an open interview with each collaborator, a determinant choice survey with 92 items on a Likert scale (values from 1 to 5) administered by researchers to food bank employees. This survey's internal consistency was validated through Cronbach's Alpha calculation. In this case, 20 items were applied, resulting in an Alpha of 0.8453. With a value exceeding 0.8, it was concluded that the survey metric is reliable. Qualitative analysis was conducted based on information provided by the food bank's board, key actors in the chain with an external perspective who are well-acquainted with its performance. Open-ended questionnaire responses were utilized for this purpose.

From the qualitative analysis, strengths, weaknesses, opportunities, and threats (SWOT) were determined. The third part involved a psychological analysis using domino and Raven tests to determine the level of intelligence.



**Figure 3** Evidence test application

The second part of this study focused on developing a model to optimize organizational culture. The results of the preliminary study significantly contributed to obtaining information and planning the food collection, storage, and distribution process. This allowed for the development of job description and position profile manuals and the implementation of the 5S Model (Eurofins, 2023; Piñero, Vivas, & Flores, 2018).



**Figure 4** Evidence application 5S



**Figure 5** Evidence store

The third part involved the analysis, design, and implementation of software called the Food Bank System (SisBA). This SisBA system is a Java 8 programming language program with Java Server Faces web technology, Prime Faces components, NetBeans 8 Integrated Development Environment (IDE), and MySQL Database. It was developed with the necessary interviews, all recorded in audio for system analysis, design, implementation, and testing.



**Figure 6** Software screen

## Results and Discussion

Job Description and Profile Manual. The development of this manual has organizational implications according to administrative theories, which refer to matrix structures and the dual-core approach, the intervention of organizational development in cultural change, and the achievement of competitive advantages. The dual-core approach compares administrative and technical changes. Administrative changes refer to the design and structure of the organization, including restructuring, downsizing, teams, control and information systems, and departmental grouping. Research on administrative changes suggests two things: first, they are less frequent than technical changes, and second, they occur in response to different environmental sectors and follow an internal process different from technology-based changes.

Competitive advantage is the creation of products and/or services, a basic way to adapt and survive in a rapidly changing environment, so the participation of organizational staff is composed of intelligent, cooperative, and mature individuals who need a certain degree of autonomy to meet customer needs. Teams must have a clear intention to improve some basic aspect of the process that prevents the institution from achieving a goal or objective.

To explain how the above was achieved, let's first look at the results of the analysis of organizational culture for collectors: (a) Communication: Collectors in general expressed that job responsibilities, objectives, changes, achievements, and the role in the bank were not communicated. Internal communication through formal means is lacking, and communication with the supervisor is nonexistent.

They feel their ideas and comments are not heard. (b) Needs and Motivation: They feel secure in their job, motivated to contribute new ideas, and willing to achieve any assigned goal. 50% agree that they are given the opportunity to work in another area, and 50% are neutral on this point. (c) Objectives and Roles: Job objectives are reasonably achievable, and 95% of individuals know that their performance contributes to the bank's objectives.

(d) Integration and Collaboration: They take pride in working at the food bank, can rely on colleagues when facing problems, and consider them as friends. 50% agree or are neutral on how problems are handled. Teamwork is indifferent with a tendency to be willing to collaborate. (e) Leadership: The immediate supervisor treats them kindly, and 50% say he fosters human relationships with his staff, while the other 50% are neutral to disagree. (f) Innovation and Change: They lack opportunities for innovative activities and are not allowed to develop new skills. They agree that changes will impact the food bank. (g) Working Conditions: They agree that there is adequate safety to prevent accidents, but the workplace temperature is incorrect, and humidity is not ideal.

(h) Human Capital Management: They feel indifferent about opportunities to increase skill development, and they believe that the selection of personnel disagrees with productivity, quality, and results. (i) Job Satisfaction: They are proud of their work but disagree with salaries, benefits, promotions, and advancements. Satisfaction with the supervisor is evenly distributed on a scale of neutral, agree, and totally agree. Monitoring progress is unsatisfactory because no one has talked to them about it in the last six months. (j) Productivity, Quality, and Results: They know the needs of the people requesting the service. They believe their colleagues lack knowledge and skills to meet the service requirements. (k) Self-evaluation: They always take initiative at work, treat people seeking food bank services kindly, and provide positive feedback.

Now let's look at the results of the same organizational culture analysis for administrative positions: (a) Communication: 57% are neutral about the timeliness of communication on objectives, changes, achievements, and/or activities of the Food Bank. 57% agree that it is communicated in various ways and transmitted correctly. Formal communication is not encouraged, and memoranda or logs are not used. Clear feedback from superiors is not received, and ideas and comments are not listened to. Communication with colleagues is good for 48%, and 42% are neutral that worker rights were not appropriately disclosed, leading to work problems.

(b) Needs and Motivation: 28% feel secure in keeping their job. 28% disagree that their job contributes to high self-esteem. 86% of employees allow the friendship of colleagues, and the job contributes to self-realization. 57% do not feel motivated at the Food Bank, and 57% would stay in the same job. (c) Objectives and Roles: 42% agree that work objectives are clearly defined and reasonably achievable. 37.5% disagree that they can achieve personal goals, and another 37.5% agree. 42% agree that personal objectives contribute. 57% agree that job performance contributes to the vision of the Food Bank. (d) Integration and Collaboration: 85.7% are fully integrated into work, and 70% are proud to belong to the Food Bank. 43% think that problems are not handled properly. 28% say teamwork is not encouraged, and another 28% say it is, with 43% getting along well with colleagues. 43% say colleagues are like friends. (e) Leadership: 42.85% say their boss is interested in what each position has to say. They generally believe their boss does not recognize their contribution. 57.14% say they can talk to the boss, despite disagreeing. 37.5% mention that the boss does not treat them kindly. 66% state that the boss is aware of their activities but are unaware if the boss detects an error and reports it properly. 57.14% agree that the boss recognizes the achievement of good results. 28.57% disagree that they review their work with their boss for new ideas to increase effectiveness. Another 28.57% are neutral, and another 28.57% agree that the boss reviews their work for ideas. The boss is fair in decision-making, with 28.57% saying yes and another 28.57% agreeing. 42.85% say the leadership style has a positive influence. 28.57% do not foster human relationships with their staff, and another 28.57% agree. 42% disagree as they are not committed to their work. 42.85% are not the best person to work with.

(f) Innovation and Change: 42.85% disagree that they are given opportunities to do different and innovative things. But 42% say they are allowed to develop new skills in their work. And 50% perceive sudden changes in work, but 55% adapt quickly to change. 42.85% agree that changes are handled properly. And 42.85% are neutral, and 14.28% totally disagree. They believe most changes positively impact the food bank, 59.14% of employees. 42% say they have no opportunities to do different or innovative things in their work. But 71% say they would adapt to change.

(g) Working Conditions: Lighting in the area is disagreed and neutral by 57.14%. 50% agree that they have space to work comfortably, with the right temperature and adequate workflow. Noise allows for proper work. Cleanliness and general hygiene are good. They believe the computer equipment speed is good and works properly. 28.57% say there is no adequate safety to prevent accidents, and another 28.57% say they agree with a tendency to totally agree. (h) Human Capital Management: 42.85% say personnel needs are always planned, 57.14% say people are not selected properly, and 28.57% are neutral. 48.57% disagree that they are provided with the relevant induction to understand the responsibilities and policies of the Food Bank. 42.85% say they have opportunities to increase skill development, aptitudes, and knowledge; neutral on agreement and disagreement regarding promotions, training, transfers, or dismissals based on performance.

(i) Productivity, Quality, and Results: 42.85% believe the way work is organized contributes to the area's productivity. 33.33% disagree with the orientation toward achieving results. 33.33% agree with the orientation toward achieving results. The one who achieves better results is the one who succeeds, with 42.85% in disagreement and agreement, meaning half and half. In a middle ground with 42.85%, quality in work is a priority. 57.14% know the needs of people requesting the service. 42.85% neutrally consider that people working with them have the knowledge and skills to meet the service needs. 42.85% believe they actively participate in error detection for better service. Their colleagues are dedicated and committed to doing quality work. 28.57% disagree, 28.57% are neutral, and 28.57% agree.

(j) Job Satisfaction: 57.14% agree that their position generates a feeling of satisfaction. 57.14% totally agree that they are proud of the work they do, feeling valued and respected, but 42.85% feel neutrally that their work is not recognized. 42.85% say salary and benefits are agreeable, but promotions and advancements are totally disagreeable at 42.85%. It is balanced if there is equality between men and women. The relationship with the boss is 28.57% neutral and 28.57% totally agree. But in the last six months, no one has talked to them about the progress of their activities, 57.14%.

(k) Self-evaluation: 57% pay attention when spoken to, 42.85% ask as many times as necessary to understand what is communicated, encourage others when they have personal or work problems. They try to see things optimistically, carry out their activities on time and with respect to their boss, even if they disagree with him, respect the regulations, always try to collaborate in the work area, contribute to doing things better, take initiative, provide new ideas, are open to change, and always treat people kindly. They view things optimistically. They always treat people seeking the service kindly.



**Figure 7** Work Team Public Attention

Regarding the Raven Progressive Matrices test for collectors, five scored below average, three below the median, and two at the median. This represents an area for improvement in the intellectual abilities of these collectors. On the HTP test, areas for improvement were found in all 10 participants, including (a) low contact with reality, (b) anxiety, (c) weak ego functions, (d) insecurity, (e) tendencies towards rejection, (f) anxiety about changes, (g) low psychic energy, (h) signs of withdrawal, (i) childish traits with dependence, (j) schizophrenic tendencies, (k) aggressive traits, paranoia, and destruction, (l) defensive attitudes, (m) resentment and hostility, (n) authority difficulties, (o) emotional dependencies, and (p) intellectual dependencies.

Results of the Domino test: four were at the median, four below the median, and two were deficient. This is consistent with the previous tests and confirms the need for training and development actions in personality and behavior skills.

### Application of the 5S Model

The initial steps were taken in creating a culture of improvement through discussions with staff, emphasizing the benefits for the organization and therefore for them as employees.

### SisBA Software Development

On the automation front, a data application called the Food Bank System (SisBA) was developed. This allowed the bank's operations to be recorded and managed systematically, providing an effective tool for Food Bank management. Figure 8 shows a snapshot of the main menu of the application, referring to Caritas Diocesan, the NGO sponsoring the Food Bank, and BAMX, the network of Food Banks in Mexico. Caritas Diocesan supports the Food Bank as one of its charity lines, facilitating dealings with benefactors or donors to the bank. BAMX is the national network of Food Banks in Mexico, regulating their operations and enabling international support through the global FoodBanking network. Hence, having an agile information system is crucial for accurate and timely reporting to these entities, as well as to government entities at the municipal, state, and federal levels.



**Figure 8** SisBA main menu

The menu offers the following options:

- a) Home: Navigate to this screen displaying institutional logos and system menus in a bar format.
- b) Programs: Manage projects or entities benefiting communities, institutions, and special programs.

- c) Suppliers: Handle all operations with donors or providers of services or products.
- d) Warehouse: Manage inventory entries, exits, and control with various specifications.
- e) Distribution: Handle logistics of transportation and distribution to secondary warehouses and each package allocated to beneficiaries.
- f) Nutrition: Create packages of perishable and non-perishable food for institutions and communities based on beneficiary characteristics, developing meal plans.
- g) Receipts: Manage and print receipts for communities, institutions, and special events, with three states: drafting, processing, and delivery.
- h) Queries: Access reports related to the operation of different options such as institutions, communities, suppliers, donors, federal, state, or municipal entities.
- i) Exit: Log out of the system.

As an example, some screenshots of the system are presented. In Figure 9, the management of food assistance programs is shown, which can be developed for communities, institutions, pantries, dining facilities, special events, or natural disasters. Figure 10 displays supplier records with contact and general data characteristics, while Figure 11 illustrates warehouse entry queries, detailing each data movement for specific product characteristics.



**Figure 9** SisBA Programs



**Figure 10** SisBA Supplier Registration



**Figure 11** SisBA Warehouse Entry Query

The entire system is robust; to provide an overview, it consists of 42 data tables, properly normalized and interrelated, to support the comprehensive recording of BA (Business Administration) operations and their subsequent retrieval. This enhances the operation of the BA. Table 1 presents the key results, comparing them to the outcomes observed one year after implementing the actions derived from the present study.

Food Bank Monitoring	
Before	After
Management of products in tons per month.	
130	150
Market value in millions of pesos of the products.	
Almost 3	More than 4

**Table 1** Key Results One Year After the Implementation of the Current Project

**Future Work**

The next step involves analyzing growth options in accordance with best practices observed in larger Food Banks, such as those in Monterrey, N.L. in Mexico, and others in the neighboring northern country. It is imperative to revisit the current study, aligning with the improvement cycle advocated by Dr. Edwards Deming, as mentioned in the literature review.

Additionally, it is essential to adapt the software to changes that may arise from the aforementioned study.

### Conclusions

The organization has successfully achieved national and international recognition, complying with standards set by federal, state, and municipal authorities, and reaching the optimal level of institutional and transparency indicators in civil society organizations dedicated to causes grounded in the principles of solidarity, philanthropy, and social responsibility. Focused on providing food assistance to at-risk groups governed by the Mexican Official Standard NOM-169-SSA1-1998, the exhaustive work and the participation of the entire community within the non-governmental organization have had a significant impact on the change in organizational culture and technological innovations. There is a profound sense of satisfaction in being a part of this third-sector organization dedicated to supporting the vulnerable community.

The organization possesses qualified and professional personnel adhering to best practices, ensuring compliance with standards established by various entities. Furthermore, it has the appropriate infrastructure for the collection, handling, and distribution of both perishable and non-perishable products in support of at-risk communities.

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## **Instructions for Scientific, Technological and Innovation Publication**

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General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

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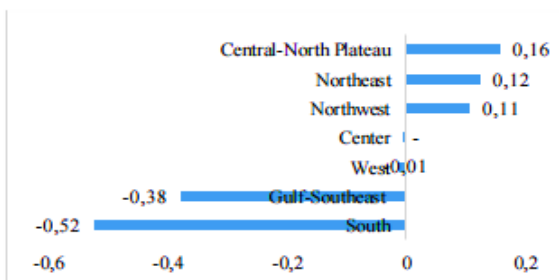
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REGION	STATE	Participation (%) on Gross		
		Surface	Population	Production
1. Northwest.	Baja California; Chihuahua; Sonora; Baja California Sur; Sinaloa.	32.1%	11.1%	13.1%
2. Northeast.	Coahuila; Nuevo León; Tamaulipas. Aguascalientes; Durango;	15.1%	9.3%	15.6%
3.Center North Plateau.	Guarajuato; San Luis Potosi; Zacatecas.	15.1%	10.9%	9.2%
4. West.	Colima; Jalisco; Michouacán; Nayarit.	8.7%	11.9%	10.2%
5. Center.	Distrito Federal; Hidalgo; México; Morelos; Puebla; Querétaro;	5.1%	33.7%	34.8%
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7. Southeast Gulf.	Campeche; Quintana Roo; Tabasco; Veracruz; Yucatán.	12.1%	12.4%	13.0%
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**Methodology**

Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

**Results**

The results shall be by section of the article.

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