

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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