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Situational analysis to increase the competitiveness of the artisanal sector of San Antonio la Isla, State of Mexico

Análisis situacional para incrementar la competitividad del sector artesanal de San Antonio la Isla, Estado de México

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Abstract

Mexico has distinguished itself as a country of enormous cultural wealth, it is important to contribute to the growth and consolidation of the aspects that identify us, one of them is the production and marketing of handicrafts, which are also representative of the regions of our country. , the objective of this research work is to carry out a situational analysis of the artisans of San Antonio la Isla, State of Mexico and by determining the strategic balance to identify the areas of opportunity and risk. The methodology used is non-experimental research of a descriptive transactional type since it seeks to investigate the technological competence of the artisans through the application of surveys, which is obtained as a result of the evaluation of the variables mentioned below: Differentiated and exclusive products, Value-added process, Mastery of technology, Capacity for Innovation, Strategic assets difficult to imitate, Productive flexibility, Quality System. Derived from the situational analysis, the FODA matrix was carried out where risk and opportunity factors are identified and strategies are proposed to increase the competitiveness of the artisanal sector.

Situational analysis, handicraft, Competitiveness

Resumen

México se ha distinguido por ser un país de enorme riqueza cultural, es importante contribuir al crecimiento y consolidación de los aspectos que nos identifican, uno de ellos, es la elaboración y comercialización de artesanías, las cuales son representativas también de las regiones de nuestro país, el objetivo de este trabajo de investigación es realizar un análisis situacional de los artesanos de San Antonio la Isla, Estado de México y mediante la determinación del balance estratégico identificar las áreas de oportunidad y de riesgo. La metodología utilizada es investigación no experimental de tipo transeccional descriptivo ya que se busca indagar mediante la aplicación de encuestas la competencia tecnológica de los artesanos, la cual se obtiene como resultado de la evaluación de las variables que se mencionan a continuación: Productos diferenciados y exclusivos, Proceso de valor añadido, Dominio de tecnología, Capacidad de Innovación, Activos estratégicos difíciles de imitar, Flexibilidad productiva, Sistema de Calidad. Derivado del análisis situacional se realizó la matriz FODA donde se identifican factores de riesgo y de oportunidad y se propone estrategias que permitan elevar la competitividad del sector artesanal

Análisis situacional, Artesanías, competitividad

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Introduction

The family livelihood and well-being of the inhabitants of San Antonio la Isla, State of Mexico, depends to a great extent on the production and commercialisation of the representative crafts of this region, especially traditional Mexican toys such as spinning tops, baleros, yoyos, carts, jengas, little horses, etc. It is important to mention that currently the sale of this type of toys is at a disadvantage compared to Chinese products that surpass them particularly in price and in the taste of children, in another sense, the crafts are an expression of the roots and traditions of the Mexicans.

In order to conserve the cultural heritage of this country, it is necessary to preserve, promote and value the work of artisans. Therefore, this research work begins with the elaboration of the frame of reference, then the problem is identified starting from a current context, in this case, it seeks to identify through a situational analysis and the elaboration of the strategic balance the internal and external aspects that impact the economic life of the artisans of the municipality of San Antonio la Isla, State of Mexico, and derived from the results obtained, strategies are proposed that contribute to the development and competitiveness of this sector.

For the development of this work, technological competence is taken as the basis of the dynamic model for the study of competitive advantage, based on the theory of resources and capabilities of Saez de Viteri; the strategic balance proposed by Ramírez Rojas is determined and the SWOT matrix is analysed according to the literature of Hernández y Rodríguez & Pulido Martínez, whose details of the contribution applied to this work can be seen in the frame of reference.

Subsequently, the methodology is developed, the sample is determined based on the population and, based on the results of the surveys applied, the results are presented globally and by technological competence variable.

Finally, the SWOT matrix is developed and some strategies are proposed to increase the competitiveness of the handicraft sector in San Antonio la Isla, State of Mexico.

Frame of reference

Crafts are considered as a form of expression and human identity, one of the main characteristics is that they are handmade with different materials, which depend on the natural wealth of the region and are the result of the skill, ingenuity, effort and dedication of artisans to create unique pieces; according to Enrique Roncancio, quoted by (Rivas, 2018) crafts are the result of creativity and imagination, embodied in a product in whose production materials of natural origin have been rationally transformed, usually with manual processes and techniques. Craft objects are loaded with a high cultural value and due to their process they are unique pieces.

It is important to note that each handicraft object is different from the others, even when reproduced in large quantities, as each one depends on the composition of its raw material. They are unique pieces that cannot be matched to each other, even if they are made in a very similar way. This gives it a very high value, since its manual and unique creation allows the artisan to put all his creativity and imagination into his work.

In addition to the above Rivas (2018), defines crafts as a set of traditional and manual techniques that have a cultural heritage value, currently threatened or disappearing, in particular because it is based on an "oral tradition".

Crafts are created through inherited knowledge, and although it is true that the methods or techniques are enriched over time, the figure of the designer is still present as a key element for the idealisation of each object.

The techniques linked to traditional crafts are part of the intangible heritage, whose safeguarding is defined by the Convention for the Safeguarding of the Intangible Cultural Heritage (the set of practices, knowledge and skills that communities and, in certain cases, individuals recognise as part of their cultural heritage) adopted by UNESCO in October 2003. These skills are the expression of the history, culture and identity of peoples, the continuity of which they embody.

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UNESCO stresses and encourages the use of the most effective means for this safeguarding, such as inventories of knowledge and techniques, their transmission from teacher to pupils, the identification of "living human treasures", talented custodians of an ancestral legacy and bearers of traditions (Etienne-Nugue, 2009).

Mexico has distinguished itself for having an enormous cultural wealth, heritage of the inheritance of indigenous peoples and of the resources of the different regions, (Artesanías de México, 2023) refers that our country has 62 ethnic groups and each one of them has its own folk art characteristics, representing the different states. The origin of Mexican handicrafts comes from rural areas, thanks to the fact that artisans have made use of the natural resources of their region, such as clay, wood, textiles, talavera, copper, among others to create their designs. In another sense, it also states that the trade of Mexican handicrafts is privileged, due to the fact that it has traditional textures and patterns that have been well received in national and international tourist areas; In order to promote the work of artisans in Mexico, as well as to contribute to the generation of greater dissemination, initiatives have been created such as Artesanía de México, which promotes Mexican crafts from different parts of Mexico.

In our country, the National Fund for the Promotion of Handicrafts (FONART) is a public trust fund of the Federal Government, under the Ministry of Culture, which was created in response to the need to promote the country's handicraft activity and contribute to the generation of a higher family income for artisans, through their human, social and economic development (FONART, 2023).

It is important to establish that handicrafts and crafts are concepts that can be confused, in the words of the Grupo Impulsor de Artesanía y Manualidad (Antrop. Marta Turok, Antrop. Luz Elena Arroyo, Antrop. Arturo Gómez, Arq. Nelly Hernández, and Arq. René Carrillo), refer to the following "It was a widespread practice that, in a large number of fairs and exhibitions sponsored by various public entities supporting the sector, both types of work were exhibited under the cover of the term "crafts" as if they were the same thing".

This confusion was a constant in government programmes that proposed the promotion of micro, small and medium-sized enterprises (MSMEs), that sought to promote self-employment and that saw handicrafts as an early alternative for low-cost production to generate businesses. This situation provoked the irruption of handicrafts in programmes aimed at supporting traditional artisans whose already minimal budgets were further diminished by this situation.

FONART's Manual for differentiating between crafts and handicrafts (Grupo Impulsor Artesania y manualidad, 2008) establishes the following concepts:

Crafts. It is an object or product of community cultural identity, made by continuous manual processes, aided by rudimentary implements and some of mechanical function that lighten certain tasks. The basic raw material transformed is generally obtained in the region where the artisan lives. The mastery of traditional techniques of community heritage allows the craftsman to create different objects of varying quality and mastery, imbuing them with symbolic and ideological values of the local culture. Crafts are created as durable or ephemeral products, and their original function is determined at the social and cultural level; in this sense, they can be used for domestic, ceremonial, ornamental, costume or work purposes. Nowadays, the production of handicrafts is increasingly directed towards commercialisation. The appropriation and mastery of native raw materials means that handicraft products have a community or regional identity of their own, which allows them to create a line of products with particular shapes and decorative designs that distinguish them from others.

Handicrafts. It should be understood as that object or product that is the result of a manual or semi-industrialised transformation process, from a processed or prefabricated raw material. Both the techniques and the activity itself do not have an identity of community cultural tradition and are lost in time, becoming a temporary task marked by fashions and practised at an individual or family level. Creativity in handicrafts achieves important aesthetic values in the domain of technical transformation and ornamentation, but these lack the symbolic and ideological values of the society that creates them.

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The quality of handicrafts is as variable as that of handicrafts: there are products ranging from very simple to very elaborate in terms of shapes, designs and decorations.

Contrary to the handicraft tradition, handicrafts are governed by the present times and tend to standardise their production with the phenomena of globalisation and mass culture.

Hybrid. It is the product that preserves identity features, the result of a mixture of techniques, materials, decorations and symbolic reinterpretations in objects made with handicraft processes that combine aspects of cultural dynamism and globalisation, but do not manage to consolidate themselves as community cultural products. One of their main characteristics is the mixing of elements of different nature, both craft and handicraft, in such a quantity or in such a way that they no longer belong to either of these two categories and form a new category. In some cases its evolutionary process comes to be configured as a craft tradition.

The State of Mexico has a wide range of handicrafts according to the communities belonging to it, the most outstanding cases being Tenancingo with its artisan overflow, Metepec and the Tree of Life, and from there San Antonio la Isla and Santa María Rayón with the creation of wooden handicrafts, the latter being affected in a certain way by climate change, which makes them look for new ways of making their handicrafts, due to the fact that their raw materials are running out or they have greater restrictions to obtain them.

San Antonio la Isla is a great producer of different types of handicrafts, but due to the lack of raw materials they are being lost, for example, bone handicrafts are made in this municipality, but they are no longer made in large quantities because it is very laborious and leaves low income, and also because the bone they use is beef horn, which is becoming increasingly difficult to obtain, as it was obtained from the slaughterhouses in the surrounding area and part of Mexico City, but the bone is becoming thinner and impossible to handle, as it used to be (López Alvarez, 2019).

According to the self-assessment report on the entity's overall performance for fiscal year 2022 (FONART, Informe de autoevaluación sobre el desempeño general de la entidad del ejercicio fiscal 2022), through the Support for Strategic Artisanal Projects component, benefits were obtained for the Strategic Artisanal Project San Antonio la Isla, State of Mexico. This artisan workshop is dedicated to the production of balero, yoyo and spinning top, part of traditional Mexican toys. With the FONART investment, the sales, decorating and drying areas were refurbished, chairs and work tables, shelves, shelves, shelves, tools such as a band saw, a single-phase motor and a spinning top machine were acquired.

With the purchase of raw materials, they have been able to create a bank of raw materials to be able to work all year round, as pine wood can sometimes increase in cost, due to the fact that there is only one supplier in the community, which means that the wood is purchased at the cost offered to them, without looking for another alternative that would allow them to be more competitive in the cost of the raw material and therefore in the product; it also depends on the seasonal nature of the supplier, putting production at risk. With regard to the training they received, they learned how to offer their products and avoid haggling, they improved their customer service and the use of digital platforms in order to access other types of customers.

According to what is published in the Book - Tourism Guide of San Antonio la Isla (Carrillo, 2020), this is one of the smallest municipalities in the state of Mexico, located in the legendary valley of Matlatzinco, today the valley of Toluca; its origin is found in the historical context of the indigenous lordship of Calimaya-Tepemaxalco. Its territory was consolidated since its foundation in the 16th century. During the colonial period, its inhabitants fought for their political autonomy and in 1847 they managed to become a municipality. Currently, the municipality of San Antonio la Isla is made up of two original localities: San Antonio la Isla (Municipal Head) and San Lucas Tepemajalco (Municipal Delegation). Both are riverside towns with traditions and customs of an ancestral culture, Otomí and Matlatzinca, respectively, which developed in what was once the lake area of the Alto Lerma.

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The visitor arriving to these island lands through the old Toluca-Tenango del Valle road or through the new Lerma-Tenango del Valle highway, can perceive that the population settlement is located in the last foothills of the imposing Xinántecatl or Nevado de Toluca; on his way he contemplates a landscape between mountains and valleys, natural attractions that are a delight for the senses.

In the main street there are shops where a great variety of handicrafts are sold. The Casa de las Artesanías (House of Handicrafts) is a space where creativity meets: yoyos, spinning tops, perinolas and baleros, as well as the polvera as a unique piece, are made with dexterity.

The population of San Antonio la Isla is characterised by the manufacture of wooden handicrafts, a skill that has made the islanders prodigious in the art of turning, which has given them a national and international identity. The use of the electric lathe, which replaced the violin lathe, is an indispensable tool for the craftsman. The skill of their hands to mould into a piece of wood: spinning tops, yoyos, baleros or polveras is masterly; their creativity is evident when painting their pieces with brightly coloured lacquers, magically decorating their works. The gurbia and chisels are the instruments of the islanders' handicraft creations, which, with their indentations and sgraffito, give life to popular art (Carrillo, 2020). It is important to know the current situation of the handicraft producers of San Antonio la Isla, this allows us to define the actions to follow in order to continue in the market.

This research work seeks to identify, through a situational analysis and the elaboration of a strategic balance, the internal and external aspects that have an impact on the economic life of the artisans of the aforementioned municipality.

A situational analysis is an in-depth study of the organisation in which internal elements such as strengths and weaknesses and external elements such as risks (threats) and opportunities are identified (Sulser Valdéz & Pedroza Escandón, 2004). This study is of utmost importance as it allows us to identify the position of the company and the context in which it has been developing.

Situational analysis is known as SWOT (Strengths, Weaknesses, Opportunities, Weaknesses and Threats), SWOT (Strengths, Weaknesses, Opportunities, Opportunities and Threats) and SWOT (Strengths, Opportunities, Threats and Weaknesses), for the purposes of this paper the abbreviation SWOT will be used.

As published by (Ramírez Rojas, 2009), one of the fundamental aspects of strategic planning is the situational analysis, also known as SWOT analysis (strengths, weaknesses, opportunities and threats), which enables the collection and use of data that allows to know the operating profile of a company at a given time, and from this to establish an objective diagnosis for the design and implementation of strategies to improve the competitiveness of an organisation, it is important to clarify that this type of analysis is applicable to any type of company regardless of its size or nature.

As part of the conclusions of the research article (Ramírez Rojas, 2009), he comments that the proposals for improvements should be oriented both towards reducing weaknesses, reinforcing and maintaining strengths and searching for suitable opportunities for the company's capabilities, as well as providing a defence against external threats. Accepted improvements should be congruent with the firm's operating conditions or means to grow its skills and resources. It also defines a competitive advantage as a special skill or ability that a company manages to develop, and that places it in a position of preference in the eyes of the market; a product or service that the market perceives as unique and decisive, constituting a differential factor in the characteristics of a company.

For a competitive advantage to be truly useful, it must also be sustainable, i.e. the company must be able to maintain it for a reasonable period of time; to achieve this, the advantages identified must meet two criteria: a) have their origin in a strength or strong point of the company, not in a temporary circumstantial event, and b) possess such characteristics that it is difficult for the competition to imitate in the short term.

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(Betancourt Guerrero, 2014) refers that the basic model proposed in the early sixties by a group of professors at Harvard Business School, in a first phase, the formulation of strategies rests on the well-known SWOT model, which records the alignment that should exist between the strengths and weaknesses of the organisation, derived from its internal evaluation, and the opportunities and threats of the environment, derived from its external evaluation. In the words of the proponents of this model, the economic strategy will be considered as the fit between the qualifications and the opportunity that positions a company in its environment.

Once the strategy has been evaluated and selected, the next phase corresponds to its implementation or operationalisation, in accordance with the resources allocated in the preceding phase.

The elements of SWOT are combined through a matrix to locate the maximum opportunities and strength of the company, or the weaknesses and threats (Hernández y Rodríguez & Pulido Martínez, 2011) from the matrix the following main combinations are derived:

Maxi-maxi strategy. Corresponds to the maximum strengths and maximum opportunities, it allows the generation of several strategic ideas with the combination of these two elements and it is possible to obtain competitive advantages in the organisation since its strengths are known.

Maxi-mini strategy. Combines the maximum strengths with the minimum threats; when the threats are for an entire sector of direct competitors, this combination allows strategic ideas to be obtained to convert the threat into an opportunity, or in its case, to take advantage of the strengths so that the threat generates less impact.

Mini-maxi strategy. In this combination, the company develops programmes and seeks to implement those tactics that make it possible to reduce weaknesses and make the most of opportunities.

Mini-mini strategy. This combination presents the minimum conditions of the company due to its weaknesses and threats, it is necessary to act urgently, especially internally, to define some defensive tactics and to mark as a priority the overcoming of the weaknesses and to be able to face the threats in the best possible way. Using the methodology discussed in the preceding paragraphs, (Calderón Rios, Zenteno Bonola, Ordoñez Hernandez, & Arellano Cordova, 2022) in their article Determinación de la Capacidad Tecnológica como fuente generadora de valor, de la industria del calzado de la Plaza Azul, San Mateo Atenco, Estado de México, propose some of the following strategies to raise technological competence:

Hire a certifying body to implement the QMS, Acquire cutting-edge technology for the production of footwear, create a strategic alliance with educational institutions that have the career of Design to generate innovative models that manage to meet the changing needs of the market, create a strategic alliance with educational institutions that have the career of Design to generate innovative models that manage to meet the changing needs of the market, suggests conducting a market study to identify the competitive advantage of the product and make it known to generate preference for the brand, among others.

The results of the research show that the main strength and the greatest area of opportunity is in production flexibility and differentiated and exclusive products.

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In their research work and as a result of the determination of the competitive advantage for the footwear sector, by means of a SWOT matrix (Calderón Rios, Ordoñez Hernández, Aguirre Brito, & Valdez Ortega, 2021) they propose to reinforce the image and prestige with the purpose of establishing a barrier for competitors, the creation of a distinctive image for the brand, as well as the design of a logo and slogan that distinguishes and represents them, taking advantage of the image and prestige they possess, establishing strategic alliances with suppliers in the region, training them in the processes for the development of the value chain; also proposes to establish alliances of temporary or permanent nature between producers of San Mateo Atenco to face the competition and respond to demand, since a present problem is the low installed capacity and venture into marketing through social networks by developing your page on Facebook, and sell through free market or other online sales platforms, the implementation of the strategies described above will increase the strategic competitiveness of manufacturers of footwear Blue Square San Mateo Atenco, Edo. de México. (Sáez de Viteri Arranz, 2000) in his article "El potencial competitivo de la empresa: recursos, capacidades, rutinas y procesos de valor añadido" presents a dynamic model for the study of competitive advantage, based on the theory of resources and capabilities, which postulates that competitive advantage resides in the generators of value, which (Bueno, 1993) defines as "The relative position compared to its competitors and the aptitude or capacity to sustain it in a lasting way and to improve it, if possible".

In the words of (Sáez de Viteri Arranz, 2000) these distinctive core competences, understood as the resources, capabilities and routines that underpin the core competences, must be sought both internally and externally. Introspection to see what the company knows how to do and how, and from the customers' appreciation of the value the company is adding. Sometimes the customer's appreciation of the company's products does not match what the company believes is a source of differentiation or technological excellence.

The concept and component of distinctive core competencies are shown in the table below1.

Concept and components of distinctive core competences
STRATEGIC COMPETENCE. Project Management and coordination of value drivers to build a competitive strategy that meets stakeholder demands and creates added value for customers in multiple markets. COMPONENTS - What the company wants to be and where it wants to go = Vision, mission and objectives. - What it is and what it knows how to do = Resources. - What it is capable of being and doing = Capabilities. - Management and coordination of value generators.
TECHNOLOGICAL COMPETENCE. It is the ability to design, buy, manufacture and sell. COMPONENTS - Stock of technologies - Know-how to apply them - Innovation capacity
PERSONNEL COMPETENCE. The organisation's Etos, the set of people's capabilities, known or unknown and used or not. COMPONENTS - Aptitude or knowledge - Craft or skills - Attitude or behaviours
ORGANISATIONAL COMPETENCE. This refers to the coordination of value drivers across the organisational structure of the company. COMPONENTS - Task design - Routines or methods - Power structure - Production and information system

Table 1 Concept and components of core competencies. *Source: Adapted from Sáez de Viteri (2000).*

The author also mentions that value generators, referring to resources, capabilities and routines, must be valuable in such a way that they can exploit an opportunity or neutralise a threat, rare in the sense that they are not possessed by other companies, inimitable because they have been shaped internally within the organisation and therefore unique and irreplaceable.

According to the proposal of Sáez de Viteri (op. cit.) regarding value generators, this research focuses on the basic distinctive technological capabilities and the components of the same that refer to the stock of technologies, know-how to apply them and capacity for innovation, which will serve as the basis for the design of the data collection instrument.

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According to (Peñaloza, 2007) empirical and theoretical efforts aim to establish a strong link between technology and innovation in the creation of competitive advantages, the latter being understood as distinctive qualities of a product, a person or a country that give it a certain superiority over its peers. In general, two types of competitive advantages can be distinguished: static and dynamic. The former are related to natural resources; the latter are associated with knowledge and technological mastery, so that companies achieve competitive advantages through innovations and, as we have seen, in order to innovate, scientific and technical knowledge is necessary even in the case of non-technological innovations, as these are generally supported by a technological component. However, it is important to clarify that having technology does not imply per se a distinctive quality, as it can be used by anyone with the appropriate resources.

In his thesis for the degree of Lic. In his thesis for a degree in International Economic Relations, (Lopez Alvarez, 2019) makes the following assessment: Given the case of handicrafts it is unlikely to have a technological advantage because it is usually 30% in machine and 70% manually, therefore the machines used in the process of toy crafts basically only focuses on what is the lathe, the saw, electric cutter and in some cases a painting machine, the latter is only when it is required urgently as the designs are made by hand as well as their assemblies.

Problem statement

The production of traditional crafts and toys is the second largest activity in the culture sector, comprising activities such as ceramics, textiles, pottery, basketry, wood, metalwork, lapidary, stonework, glass, pottery, cardboard and paper, saddlery, fur, as well as traditional sweets, according to the Cultural Satellite Account of Mexico (CSCM), in 2021, the Culture sector generated 736 725 million current pesos. Of these, crafts contributed 153,437 million pesos, which represented 20.8 % of the Gross Domestic Product of the culture sector by general areas (INEGI, 2023), which is more than what the performing arts, shows, visual arts, plastic arts, music, concerts and the publishing industry, among others, generated as a whole.

In another sense, the family sustenance and social wellbeing of the population of San Antonio la Isla depends to a large extent on the commercialisation of handicrafts, which is why this research seeks to understand the current situation of the handicraft sector and to identify the impact of internal and external aspects on the consolidation of this important sector on which the vast majority of the inhabitants of this municipality depend.

It is important to emphasise that resources in themselves are not providers of competitive advantage, but that this depends on how they are used and how skilfully they are managed. Therefore, the ability to combine the tangible and intangible resources available to the company gives rise to its capacities or competencies, according to Amit & Shoemaker, 1992, cited by (Sáez de Viteri Arranz, 2000).

For the artisans it is of utmost importance to be aware of the causes that are adverse to them in the commercialisation of their products and those that represent strengths and opportunities for their growth and consolidation of their business.

Methodology

The design of this work is non-experimental research of a descriptive transectional type, according to (Hernandez Sampieri, Fernandez-Collado, & Baptista Lucio, 2008) in this type of research phenomena are observed as they occur in their natural context, and then analysed, it is of a transectional type because, through analysis, The type of study is descriptive, which seeks to specify the properties, characteristics and profiles of people, groups, communities or any other phenomenon that is subjected to analysis. On the other hand, descriptive cross-sectional designs, which aim to investigate the incidence of the modalities or levels of one or more variables in a population, are purely descriptive studies. The procedure consists of locating one or several variables in a group of people, living beings, objects, situations, contexts, phenomena, communities, etc. and providing their description. As for the references or primary sources, these provide first-hand data, such as interviews or surveys of the artisans who are in San Antonio la Isla, as they are the only ones capable of providing specific and accurate data on all the information that will be provided in this research.

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From the study problem posed and in correspondence with the state of the art, the principles proposed by (Ramírez Rojas, 2009) will be followed, this procedure does not contemplate the necessary elements to give statistical validity to the investigation, elements that are incorporated in the present investigation. In addition to the determination of the strategic balance, the SWOT matrix is elaborated in which the proposed strategies are developed in order to increase competitiveness in the production and commercialisation of handicrafts in San Antonio la Isla in the State of Mexico.
In order to facilitate the understanding and practical application, the detailed procedure that was carried out is shown below:

1. Identification of the analysis criteria. According to Sáez de Viteri (op. cit.), the technological competitive position is the result of comparing the key competences demanded by the competition (external analysis) with the key competence that the company possesses (internal analysis). Technological competence is defined as a result of the following variables:

- Differentiated and unique products.
- High value-added processes.
- Technological mastery.
- Capacity for innovation.
- Strategic assets that are difficult to imitate.
- Production flexibility.
- Quality system.

2. Determination of the real conditions of action in relation to the internal and external variables of the analysis.

a) Delimitation of the field of action. The study was carried out taking as its universe the handicraft producers of San Antonio la Isla in the State of Mexico. According to the publication by (Contreras, 2023) the municipality has 716 artisans registered, who not only work on wood but are distinguished by pieces in other branches such as horn, bone, metalwork, corn leaf, among others.

b) Determination of the sample size. Since the number of artisans in the municipality of San Antonio la Isla is known, the formula was used to determine the sample size of a finite population (Munch & Ángeles, 1998).

$$n = \frac{k^2 * p * q * N}{\left(e^2(N-1)\right) + k^2 * p * q} \quad (1)$$

Where:

N = 716
k = 1.645 Z value for 90% confidence level
p = 0.5 probability of success (determining Strategic Competitiveness)
q = 0.5 probability of failure (determine Strategic Competitiveness)
e = 0.10 maximum permissible error

$$n = \frac{(1.645)^2 * (0.5) * (0.5) * (716)}{\left((0.10)^2(716-1)\right) + (1.645)^2 * (0.5) * (0.5)} = 61.889 \quad (2)$$

The result of the sample size is 61,889, which should be rounded to 62 because it refers to persons.

c) Collection of information. The structured interview technique was used, for which a questionnaire was designed consisting of a set of strategically planned questions regarding the variables to be measured (Hernández, Fernández, & Baptista, 2010).

Given that the list of strengths (F), weaknesses (D), opportunities (O) and threats (A) can be very extensive, it was limited to consider only the most relevant in each section.
For the selection of the elements that make up the sample, convenience sampling was used, in which the elements to be sampled are selected because they are accessible through existing contacts (Munch & Ángeles, 1998).

3. Assignment of a weighting for each of the strengths, opportunities, weaknesses and threats. For each of the factors mentioned in point 1, respondents were asked to assign a rating of 1, 2 or 3: where 3 denotes the highest level of performance, 2 the medium level and 1 the lowest level. In this way, the differences between them can be established in order to rank them in order of importance.

4. Calculation of the results. Based on the average score obtained for each variable, a matrix was drawn up with the totals and the individual contribution of each variable.

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5. Determination of the strategic balance. The strategic balance is the relationship between the optimisation factor (FO) and the risk factor (FR) of an organisation and can either favour or inhibit the development of competitive strategies (Ramírez Rojas, 2009).

The optimisation factor indicates the organisation's favourable position with respect to its competitive assets and the circumstances or events that can potentially be a source of competitive advantage in the near future.

The risk factor shows an unfavourable position of the organisation, i.e. it shows a competitive liability coupled with conditions that limit the organisation's competitive position.

FO = F + O

FR = D + A

BE = FO - FR

The strategic balance of an organisation is better as long as the difference between the optimisation factor exceeds the risk factor.
6. Elaboration of the SWOT matrix and presentation of proposals. The answers of the interviewees were concentrated in a matrix and then plotted. Based on the previous results, the SWOT matrix was elaborated and from it conclusions were drawn regarding the general situation of the handicraft industry, as well as the individual contribution of each of the variables studied. Finally, the SWOT matrix constitutes the basis for the elaboration of proposals for strategies to increase competitiveness and to contribute to the success of the handicraft sector in San Antonio la Isla, State of Mexico.

Results

The results presented are the product of the information obtained through the structured interviews, to arrive at these results it was necessary to carry out the processing of data derived from these interviews and the analysis and interpretation of the information, the themes referring to the SWOT (Strengths, Opportunities, Weaknesses, Threats) of the artisan sector of the municipality of San Antonio la Isla were determined, the Evaluation of the Risk Factors and the Optimization Factor was carried out, concluding with the SWOT Matrix. The results matrix was elaborated based on the average score obtained for each variable.

Table 2 shows the total weighting of the strengths, weaknesses, opportunities and threats.

Variable	F	D	O	A
1. Differentiated and exclusive products	180	155	151	137
	29%	25%	24%	22%
2. High value-added process	172	95	117	129
	34%	19%	23%	25%
3. Technology proficiency	154	121	123	105
	31%	24%	24%	21%
4. Capacity for innovation	181	113	94	118
	36%	22%	19%	23%
5. Strategic assets that are difficult to imitate	179	119	120	124
	33%	22%	22%	23%
6. Production flexibility	157	124	135	127
	29%	23%	25%	23%
7. Quality system	114	78	123	92
	28%	19%	30%	23%
Total	**1,137**	**805**	**863**	**832**
Participation in %	**31%**	**22%**	**24%**	**23%**

Table 2 Overall situational analysis and by variable
Source: Own elaboration

The information in table 2 is analysed horizontally, showing the percentage of participation of the company's internal and external conditions for each of the 7 variables established by the situational analysis to determine competitiveness. For example, for variable 2. High added value process, its strengths represent 34%; its weaknesses 19%; opportunities represent 23% and threats 25%.
On the other hand, if the analysis is carried out vertically, the strengths, weaknesses, opportunities and threats of the company can be determined in a general way, as shown in graph 1 below.

Graphic 1 Global SWOT situational analysis
Source: Own elaboration

Subsequently, the overall and per variable strategic balance (BE) was determined, which is the relationship between the optimisation factor (FO) and the risk factor (FR).

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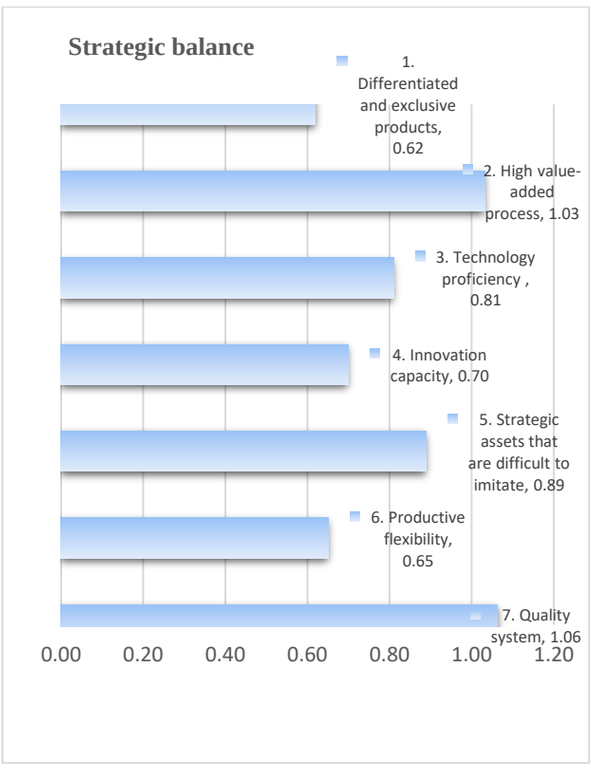
The results are shown in table 3.

Strategic variables	*Optimisation factor (FO)*	*Risk factor (FR)*	*Balance (BE)*
1. Differentiated and exclusive products	5.25	4.63	***0.62***
	0.53	0.47	
2. Processes with high added value	4.59	3.56	***1.03***
	0.56	0.44	
3. Mastery of technology	4.40	3.59	***0.81***
	0.55	0.45	
4. Capacity for innovation	4.37	3.67	***0.70***
	0.54	0.46	
5. Strategic assets that are difficult to imitate	4.75	3.86	***0.89***
	0.55	0.45	
6. Productive flexibility	4.63	3.98	***0.65***
	0.54	0.46	
7. Quality system	3.76	2.70	***1.06***
	0.58	0.42	
Total	31.75	25.98	***5.76***
	0.55	0.45	

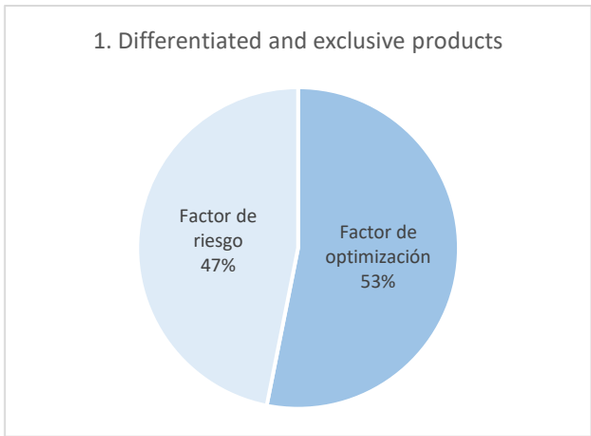
Table 3. Overall strategic balance and by factor
Source: Own elaboration

The impact of the strategic balance per variable and its contribution to the global strategic balance is presented in graph 2, on the right side of the graph those variables with a positive strategic balance and on the left side of the graph those variables that represent a risk with a negative strategic balance, for the case of the handicrafts of San Antonio la Isla, only positive factors were found.



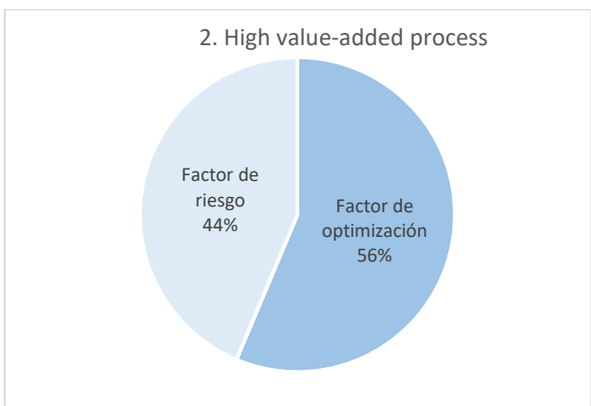
Graphic 2 Strategic balance impact by variable
Source: Own elaboration

Differentiated and exclusive products is the one that represents the risk factor with the greatest vulnerability in the global balance of technological competitiveness, the weakness detected is that the handicrafts that are manufactured are traditional models, leaving out innovation and the creation of new models to remain in the taste of the clients.



Graphic 3 Differentiated and exclusive products
Source: Own elaboration

According to the information presented in the following graph, the strategic variable referring to high added value processes is the second that generates the greatest positive impact with 56%, the variable that determined these results was that in the manufacturing process all activities add value.



Graphic 4 Value-added processes
Source: Own elaboration

With respect to variable 3. Mastery of technology, the highest score was obtained for strength, which refers to the fact that the company has personnel trained in the use of the technology used within the company. It is important to clarify that the technology used for the production of handicrafts is rather basic, such as cutters, polishing machines, lathes, etc.

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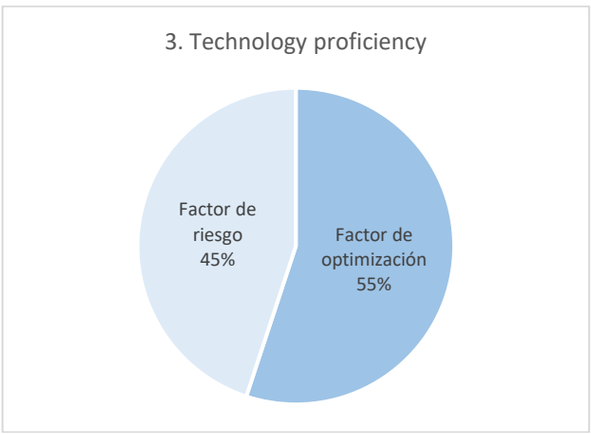
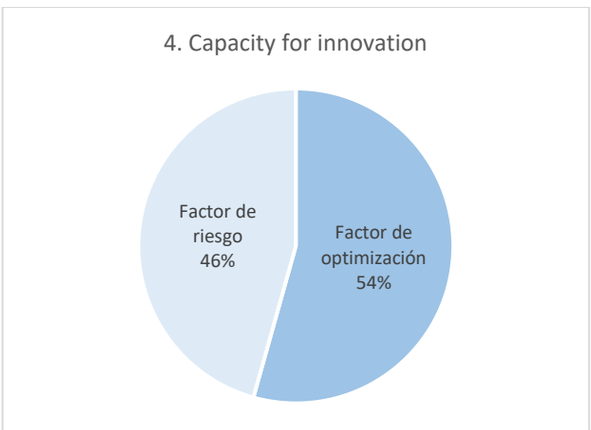


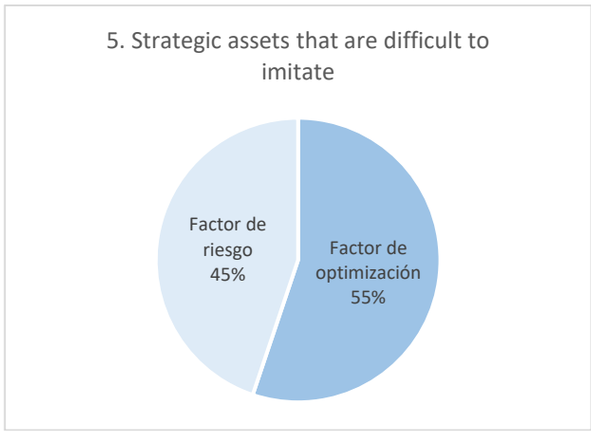
Graphic 5 Technology proficiency
Source: Own elaboration

On the other hand, graph 6 shows the strategic balance of the capacity for innovation, in which we can identify a relatively low appreciation of governmental support and support from different educational entities to promote innovation, although the artisans say that if the ideas proposed by the staff are taken into account and that they are susceptible to be developed, then they will be taken into account



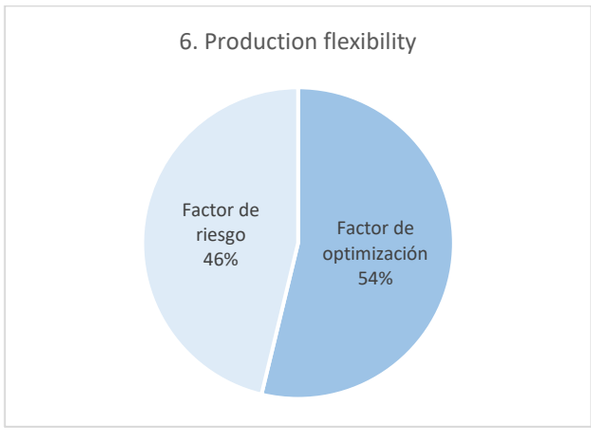
Graphic 6 Innovation capacity
Source: Own elaboration

With respect to the strategic assets that are difficult to imitate, shown in graph 7, the balance represents an optimisation factor greater than the risk factor, this result originates in the strength, as it had a higher score, which refers to the use of human talent, motivated, integrated and trained for the manufacture and distribution of handicrafts.



Graphic 7 Strategic assets that are difficult to imitate
Source: Own elaboration

In graph 8 related to productive flexibility, the risk factor rated with the lowest score and which does not allow a balance to be reached with the optimisation factor refers to the fact that the company cannot make changes in the productive process, remembering that handicrafts are made in a traditional way and by cultural inheritance from generation to generation.



Graphic 8 Productive flexibility
Source: Own elaboration

According to the information presented in the following graph, the strategic variable with the greatest impact in the analysis carried out is the one referring to quality systems, where the optimisation factor is 58% in relation to the risk factor of 42%.

Finally, the SWOT matrix, shown in table 4, displays the most representative elements of the situational analysis based on the results obtained and proposes some strategies derived from the combinations of the SWOT elements.

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Factors / factors	Strengths	Weaknesses
Factors Factors	F1. All innovative ideas brought by staff are taken into account so that they can be developed. F2. The products sold are original models for pre-determined markets. F3. Use of human talent, motivated, integrated and trained where for the manufacture and distribution of handicrafts, the company has the necessary qualified personnel..	D1. The handicrafts produced are traditional models. D2. The company cannot make changes to the production process. D3. The enterprise makes minimal use of technology. D4. Manufacturing processes can or are imitated by competitors.
Opportunities	***Maxi-Maxi***	***Maxi-Mini***
O1. The demand for handicrafts are exclusive models by the market. O2. Existence of different methodologies to achieve flexibility in the elaboration of products. O3. The implementation of certifications accompanied by the implementation of continuous improvement tools.	Continue with the development of original models representative of the region and take into account the ideas contributed by the staff so that innovative items can be developed to complement the product offer. Continue with its strategies for training, motivation and integration of human talent. Seek flexibility in the production of products, without losing sight of their handicraft quality. To contract a certifying body to implement the QMS in order to respond to market demands.	The biggest weakness is that they manufacture traditional models, without much change in the production process and minimal use of technology, however, this weakness also represents one of the characteristics of the handicrafts. To maximise one of the opportunities detected is to implement a QMS to measure the quality of the products.
Threats	***Mini – Maxi (D-***	***Mini -Mini***
A1. Supply by competitors of exclusive and highly innovative handicraft models. A2. Competitors offering different types of handicrafts that meet the needs demanded by the market. A3. Competition that responds quickly to changes in consumer demand..	Conduct a market study to identify the demand for real handicrafts and products made using a technological production process. Respond quickly to consumer demand, taking into account the innovative ideas of the workers and training them on an ongoing basis.	Identify consumer demand, generate innovative models that complement the supply of craft products. Participate in training programmes on innovation in government programmes.

Table 4 SWOT matrix
Source: Adapted from Hernández y Rodríguez & Pulido Martínez (2011)

Conclusions

According to the analysis carried out and after having applied the proposed methodology, it can be concluded that there is an overall positive balance, since in general the optimization factor exceeds the risk factor by a certain margin, the variables that are closer to the risk factor are: Differentiated and exclusive products, and Productive flexibility; in this sense it is important to highlight, that one of the characteristics of handicrafts is that they are representative products of a region or community so they cannot be differentiated and/or exclusive to one producer; made through manual processes learned generationally, the technological use is limited to rudimentary implements and some of mechanical function, so productive flexibility is not a factor susceptible to modernisation, however, these variables can be recognised and visualised as an area of opportunity because they are desirable qualities in a handicraft.

As for the variable that the producers identified as a strong point, it is related to the quality of the product and the service offered, however, they are aware of the need to improve in order to respond to market demands, so it is suggested to implement and certify a Quality Management System, participate in government support programmes for the promotion of handicrafts, continue with training for employees and identify consumer demand and respond in a timely manner to their needs.

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