"El saber de mis hijos hará mi grandeza"

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RESEARCH

# Social innovation and non-discrimination in the organizations of the vid system in Sonora

## Innovación social y no discriminación en las organizaciones del sistema de vid en Sonora

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## Abstract

The objective of this research is to show how non-discrimination in the workplace due to pregnancy, constitutes a fundamental element for social innovation and allows progress in processes that lead to the construction of fairer and more equitable organizations. The methodology is based on the application of 14 semi-structured interviews to the same number of table grape exporters. The research design is non-experimental, with a mixed approach; it is intentional and correlational (association). The results reveal that in the table grape system there are organizations that have already implemented social innovation strategies, while there are some that are in the process of being carried out, and others that are just beginning the process. It is concluded that those organizations that present a higher level of non-discrimination in the workplace due to pregnancy, are the ones that have a higher level of social innovation.

**Keywords:** social innovation, corporate social responsibility, sustainable development, labor discrimination, pregnancy.

**JEL Classification:** Q01

## Resumen

La presente investigación tiene el objetivo de mostrar evidencia referencial y empírica de cómo la no discriminación laboral por motivo de embarazo, constituye un elemento fundamental para la innovación social y permite avanzar en procesos que lleven a la conformación de organizaciones más justas y equitativas. La metodología se fundamenta en la aplicación de 14 entrevistas semiestructuradas a igual número de exportadoras de uva de mesa. El diseño de la investigación es no experimental, con un enfoque mixto; es de tipo intencional y correlacional (asociación). Los resultados revelan que en el sistema de vid de mesa existen organizaciones que ya han implementado estrategias de innovación social, mientras que hay algunas que están en el tránsito de su realización, y otras que apenas inician el proceso. Se concluye que aquellas organizaciones que presentan un mayor nivel de no discriminación

laboral por motivo de embarazo, son las que tienen mayor nivel de innovación social.

**Palabras clave:** innovación social, responsabilidad social empresarial, desarrollo sustentable, discriminación laboral, embarazo.

**Clasificación JEL:** Q01

## 1. Introduction

Currently, table grape system organizations aim to adhere to the business principles of social innovation by adopting practices that are more environmentally friendly and fairer to workers (Zúñiga, 2018). Among these principles is labor non-discrimination, which affects both men and women based solely on their physical appearance or life circumstances (CONAPRED, 2020).

Labor discrimination may occur based on race, nationality, age, political opinion, physical and/or sensory disability, sexual orientation, political affiliation, pregnancy, or motherhood, among others. It is an issue that generates fear among employees or job seekers hoping to join an organization. In Mexico, discrimination based on pregnancy is one of the most prevalent forms of labor discrimination (Didier, 2019).

Discriminatory labor practices against pregnant women are commonly associated with dismissal and pregnancy testing. However, they also include harassment, denial of promotions, reduction in wages, schedule changes without the employee's consent, assigning tasks that endanger the health of the woman and her child, exclusion from training programs, and lack of invitations to work meetings, among others (González, Bárcenas, Díaz & Pérez, 2021).

Managers of table grape system organizations in Sonora have become increasingly aware of the need to move toward social innovation and to promote decent work for both men and women—especially for those women who are pregnant or wish to experience motherhood in the future (Duarte, Dedieu & Schiavi, 2021).

From this commitment arises the objective of the present article: to demonstrate how labor non-discrimination—specifically on the basis of pregnancy—constitutes a key element of social innovation and enables progress toward the development of fairer and more equitable organizations.

This study uses as empirical evidence the table grape exporting organizations of Sonora. The methodology is based on 14 semi-structured interviews with the same number of organizations, selected through a representative sample with a 95% confidence level and a 7.5% margin of error. The results reveal that the organizations with the highest levels of non-discrimination based on pregnancy are also those that show the greatest degree of social innovation.

## 2. Literature review

*1. Social Innovation*

The concept of social innovation has been addressed from various disciplinary perspectives and begins with the search for creative and novel ways to meet unmet social needs, or those that have been addressed inadequately or urgently (Franco & Guerra, 2018). The concept is rooted in the introduction of new organizational structures and market-based mechanisms. Such organizations aim to provide sustainable well-being across economic, environmental, and social spheres (Haskell, Bonnedahl & Stål, 2021).

Social innovation is regarded as a transformative strategy that confronts and changes companies, organizations, and institutions within complex and specific contexts. This concept points to deep environmental, economic, and social change that goes beyond governmental norms and policies (Ortega & Marín, 2019). Social innovation must be grounded in changes that improve the cultural, normative, and regulatory structures of society, in order to optimize resources and promote economic and social development (Molina et al., 2019).

Although social innovation could be considered a fundamental and inherent element of the operation of companies, institutions, and organizations, it has recently become a new approach to management and business. It incorporates practices that internalize the ethical principle of sustainable development through its three components: environmental, social, and economic. This allows for the recognition of the interests of various stakeholders while prioritizing environmental preservation and the protection of human health, with the aim of ensuring the well-being of individuals, communities, and future generations (García, 2018).

Social innovation within organizations refers to the set of actions developed with the aim of generating results in three areas—economic, social, and environmental—while meeting the needs of all interested parties (Vargas-Merino, 2021).

*2. The Table Grape System in Sonora*

The table grape system in Sonora is comprised of approximately 41 organizations, which together cultivate around 17,200 hectares and contribute 89% of the production volume and 95% of exports. Their activities are mainly located in the municipalities of Caborca, Pitiquito, Altar, Hermosillo, Carbó, San Miguel de Horcasitas, Guaymas, and Empalme (Contreras, 2019).

Each year, around 25.4 million boxes of grapes are produced in Sonora, 90% of which are exported, while the rest is destined for the domestic market. Approximately 75% of exported boxes are shipped to the North American market, and the rest to Canada, the United Kingdom, and Australia (Bañuelos, Robles & Aranda, 2019). The average annual economic impact is 9.5 billion pesos, and the industry generates approximately four million wages per season (Herrera et al., 2022).

Sonora was the national leader in grape production in 2017 and 2018 (SAGARHPA, 2018). In 2017, it produced 334,355 tons, representing 80.4% of national production. It generated approximately 485.5 million in foreign currency, as most of the fruit is exported. In 2018, Sonora once again ranked first in national production, reaching 236,831 tons of grapes across different varieties (SAGARHPA, 2018).

Sonora contributes significantly to national grape production; the U.S. market is its main destination. Therefore, organizations in this system must comply with high standards, audits, and certifications (Herrera, Robles & Preciado, 2022).

3. *The Table Grape System, Its Certifications, and Social Innovation*

For the grape-producing and exporting organizations in Sonora, certifications, audits, and labels play an important role in the implementation of social innovation and sustainable development strategies. These mechanisms respond to increasingly aware consumers concerned about the environmental and social issues surrounding the agricultural products they consume (Contreras et al., 2018).

The main certifications, audits, and labels pursued by these organizations include:

i) GlobalG.A.P. (Good Agricultural Practices) and its add-on GRASP (Risk Assessment on Social Practice); ii) Fair Trade; iii) RainForest; iv) Kroger; v) PrimusGFS; vi) SENASICA; vii) México Calidad Suprema (MCS); viii) USDA Organic (U.S. Department of Agriculture); ix) Child Labor-Free Agricultural Company Distinction (DEALTI); x) Responsible Agricultural Company Distinction (DEAR); xi) Ethical Trade Audit for SEDEX Members (SMETA) (Contreras, 2019).

***GlobalG.A.P. and GRASP***

This certification aims to promote social innovation through sustainable development across its three pillars: environmental, social, and economic. It is based on two starting points: an official guideline endorsed by the U.S. Food and Drug Administration (FDA) and a private international protocol known as GlobalG.A.P. (Good Agricultural Practices). These practices consist of principles, standards, and technical recommendations applicable to the production, processing, and transportation of food, aimed at protecting human health, preserving the environment, and improving the living conditions of workers and their families (Nivelo, Pacheco & Pupo, 2020).

***Fair Trade***

Fair Trade is a global movement composed of a diverse network of producers, buyers, and organizations that seeks to create a fairer and more equitable trade model that fosters social innovation. It encourages doing what is right for the welfare of families, communities, and the planet. The certifying body supports responsible companies, empowers farmers, protects workers, and promotes environmental care (Fair Trade, 2020).

***RainForest Alliance***

RainForest Alliance is a member of the International Social and Environmental Accreditation and Labelling Alliance (ISEAL), which promotes social innovation and sustainable development systems in close collaboration with governments, companies, and NGOs to foster improvements and transform various industry sectors (ISEALALLIANCE, 2021).

***Kroger***

Kroger promotes positive changes within companies

and communities to protect both people and the planet. Through initiatives such as Zero Hunger, Zero Waste, and its Environmental and Social Impact Plan, this certifying body is committed to creating hunger- and waste-free communities, reducing climate impacts, and conserving natural resources—actions aligned with the principles of social innovation (Kroger, 2021).

***PrimusGFS***

The PrimusGFS standard is based on the Hazard Analysis and Critical Control Points (HACCP) system. It includes the measures that must be taken in agricultural production programs, both in field operations and administrative tasks in facilities. The goal is to encourage producers to assess operational risks and implement controls to ensure food safety and contribute to social innovation and sustainable development (Contreras, 2019).

***SENASICA***

The National Service for Agro-Alimentary Health, Safety, and Quality (SENASICA) is a decentralized agency of the Secretariat of Agriculture and Rural Development (SADER). It aims to prevent the entry of pests and diseases that may affect the agro-food sector. SENASICA also regulates and promotes certification systems that reduce food contamination risks and improve quality to facilitate national and international trade. These actions align with organizational transformation through mechanisms of social innovation (SENASICA, 2021).

***México Calidad Suprema (MCS)***

MCS is a certification body that supports the development and competitiveness of agro-food products through a seal that certifies only Mexican foods. From cultivation to packaging, it ensures the highest standards of safety, quality, and health. In collaboration with SENASICA, MCS has developed certification and oversight strategies for good handling practices to guarantee pest- and chemical-free products and to ensure consumer protection—principles aligned with social innovation (Contreras, 2019).

***USDA Organic***

The USDA Organic certification is based on the National Organic Program (NOP-USDA) of the U.S. Department of Agriculture. This certification is essential for companies wishing to export organic produce to the United States and supports social innovation by certifying quality management (Krüger, 2019). According to USDA, organic standards describe specific requirements that must be verified by an accredited certifying agent before products can be labeled as organic (USDA, 2021).

***DEALTI***

The Child Labor-Free Agricultural Company Distinction (DEALTI) is a free, voluntary management model issued by the Ministry of Labor and Social Welfare (STPS). It encourages agricultural companies hiring field workers to demonstrate compliance with labor laws, establish policies for child care and protection, implement measures to prevent child labor across all areas and processes, and demonstrate social responsibility practices for child protection. These are mechanisms proposed by social innovation, representing a new face of Corporate Social Responsibility (Vargas-Merino, 2021).

***DEAR***

The Responsible Agricultural Company Distinction (DEAR) arose from the Comprehensive Care Agreement for Agricultural Workers and reflects the interest of workers, producers, and authorities to transform the agricultural sector. DEAR is based on national and international agreements and guidelines, grouped into eleven key principles covering best practices in labor, social, environmental, infrastructure, and service welfare for workers—requirements consistent with the foundations of social innovation (CONAPESCA, 2017).

***SMETA***

A social audit is one of the most effective ways to assess working conditions in an organization and ensure transparency across the supply chain and support networks. These audits help brands evaluate their suppliers, show their commitment to human rights, and verify worker health and safety, all

Through the requirements imposed by these certifications, audits, and distinctions—and their integration into the organizations of the Sonoran table grape system—the principles of social innovation are fulfilled. These principles are grounded in the three pillars of sustainable development: environmental, economic, and social. The social dimension specifically addresses issues

of labor non-discrimination based on race, sex, age, public opinion, sexual orientation, political affiliation, physical and/or sensory disability, and pregnancy, among others (Terán, 2019).

*4. Pregnancy, an Element of Labor Non-Discrimination for Social Innovation in the Table Grape System*

Labor discrimination is an act that generates fear in employees or job applicants attempting to work in an organization. It can occur based on race, nationality, age, public opinion, physical and/or sensory disability, sexual orientation, political affiliation, and pregnancy or maternity, among other factors. Pregnancy-related discrimination is one of the most common forms of labor discrimination in Mexico (Didier, 2019).

Discriminatory labor practices against pregnant women are generally associated with dismissal and requests for pregnancy tests. However, these practices can take many forms, including harassment, denial of promotion, salary reduction, changes to working hours without the employee's consent, denial of basic needs such as bathroom breaks or the ability to sit down, and instructions to perform tasks that could endanger the woman's health or that of her child. Additional examples include exclusion from training programs and work meetings, among others (González, Bárcenas, Díaz & Pérez, 2021).

Managers of organizations in the table grape system have become increasingly aware of the need to move toward social innovation and the ongoing responsibility to promote decent work for both women and men in environments of freedom, equity, and safety—especially for women who are pregnant or who wish to experience motherhood in the future (Duarte, Dedieu & Schiavi, 2021). These managers recognize social innovation as a mechanism to comply with universal standards of social responsibility and sustainable development (Guadarrama, Calderón & Nava, 2018).

Therefore, this article aims to demonstrate how labor non-discrimination based on pregnancy constitutes a fundamental element of social innovation and enables progress in processes that lead to the creation of more just and equitable organizations.

## 3. Methodological Plan

The proposed methodological framework to determine whether there is a relationship between labor discrimination due to pregnancy and the level of social innovation in the organization begins with a literature review to identify the state of the art (A la Torre, 2019; Contreras, 2019; Morales, 2021).

The observation and evaluation units for this study are 41 table grape export companies located in the municipalities of Hermosillo, Carbó, Caborca, and San Miguel de Horcasitas (Contreras, 2019). The informants—in this case, the managers—are the individuals who will participate in the research and provide the necessary data, as their hierarchical position is directly related to decision-making on labor non-discrimination policies, including pregnancy as one of its key elements (Arias, 2019).

The research design is non-experimental, with a mixed-methods and correlational approach. To determine the sample size, a population of 41 organizations was considered. The sample (n) was estimated based on this population size (N) using the following formula for finite populations:

$$n = \frac{Z^2(N)(p)(q)}{[E^2(N-1)]+[Z^2(p)(q)]}$$

Where "n" is the sample size, "N" is the population size, "Z" is the value corresponding to the desired confidence level, "E" is the estimation error, "p" is the probability of success (i.e., being selected), and "q" is the probability of failure (i.e., not being selected).

By substituting the values into the formula, we obtain:

$$n = \frac{1.96^2\,(41)(0.97)(0.03)}{[0.075^2(41-1)]+[1.96^2(0.97)(0.03)]}$$

Through the semi-structured interview script, information was collected regarding workplace non-discrimination (or discrimination) based on socioeconomic status, public opinion, religion, age, foreign origin, indigenous descent, national origin, gender, physical disability, opportunities for

growth within the organization, access to well-paid positions, general training, training for emerging needs, participation in meetings, and diverse sexual preferences. However, the focus was placed specifically on workplace discrimination due to pregnancy (Terán, 2022).

With the support of the MaxQDA program, the 14 interviews were processed, and the resulting frequencies were exported to the RStudio program for analysis (Kuckartz & Rädiker, 2019; Vargas & Mesa, 2021). The key question explored was: Does the condition of pregnancy influence hiring or promotion decisions?

Regarding certifications and audits linked to social innovation and the three pillars of sustainable development, a review was conducted to create a general table of available data. This allowed for the construction of a specification block aligned with the verification points assessed by each certification and audit. From this, a proportional value was assigned to each certification, contributing to the overall valuation block—that is, the organization's level of social innovation.

Based on this review, a certification assessment mechanism was developed as follows:

A. An Excel spreadsheet was created listing the verification points covered by all certifications across the three main areas of sustainable development.

B. A total of 353 environmental review points were grouped into categories such as: pest, foreign matter, and crop disease control; use and management of chemicals and pesticides; soil management; fertilizer use; water and energy usage; air pollution; flora and fauna protection; waste and hazardous waste management; and greenhouse gas emissions.

C. A total of 584 social review points were grouped into the following categories: protection of workers' rights (social justice); occupational health, safety, and hygiene; education and training; hazard analysis and critical control points (HACCP); food safety and sanitation; organic practices; facility cleanliness and safety conditions; use of protectants and preservatives; and processes for audits, inspections, and monitoring.

D. Twelve economic review points were grouped into two categories:

E. Generalities (e.g., wage levels, payroll frequency, withholdings and deductions);

F. Particularities (e.g., economic capacity to support children's education, acquire or build a home, and pay for services such as electricity, water, and phone).

G. A binary coding system (1 = considered; 0 = not considered) was applied to each certification based on whether it addressed specific points in the environmental, social, and economic categories. Totals were calculated and a proportional value was assigned to each certification according to the number of review points addressed out of the total in each category.

H. A valuation block was compiled. Each organization, based on the certifications it holds, was assigned the respective proportional values. These values were summed to generate a final score indicating the organization's level of advancement toward sustainability.

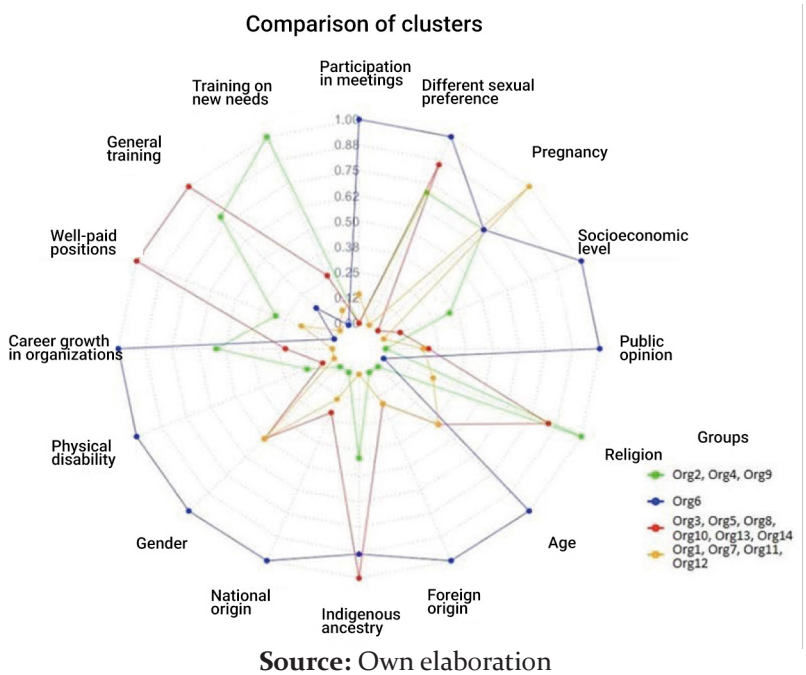
Finally, the data obtained from RStudio—based on responses from the semi-structured interviews—were combined with the results of the certification and audit review (including PrimusGFS, USDA Organic, GlobalG.A.P. and its GRASP add-on, Fair Trade, México Calidad Suprema, SENASICA, SMETA, DEALTI, DEAR, Kroger, and Rainforest Alliance). A Chi-square ($X^2$) test was then applied to test the hypothesis: "Labor non-discrimination due to pregnancy is related to organizational changes toward social innovation."

## 4. Results

*1. Degree of labor non-discrimination in the "pregnancy" element*

The information obtained through MaxQDA and RStudio revealed the formation of four groups developed based on labor non-discrimination criteria, where the element analyzed was "pregnancy." It was determined that values ranging from 0.10 to 0.34 represent a low degree of compliance with labor non-discrimination, while values between 0.35 and 0.74 indicate a medium

**Figure.1** Cluster comparison chart by shared characteristics.




**Source:** Own elaboration

degree, and values within the range of 0.75 to 1.00 represent a high degree.

In Group I, managers 2, 4, and 9 expressed support for the inclusion of minorities and efforts to reduce workplace discrimination. They indicated that strategies to include individuals regardless of age, foreign origin, national origin, sex, or physical disability are still under development. Additionally, they are working to ensure that positions are well-paid and that participation in meetings is equitable. Regarding non-discrimination due to pregnancy, they highlighted the importance of hiring and promoting pregnant women within the organization. They also mentioned efforts to adjust workloads so these women can enjoy the maternity leave to which they are legally entitled, emphasizing the importance of retaining these employees. They confirmed that pregnant women have indeed been hired. The score for the pregnancy variable in this group ranged from 0.35 to 0.74, indicating a medium level.

In Group II, manager 6 voiced strong support for workplace non-discrimination, which was reflected across most variables: sexual preference, socioeconomic status, public opinion, age, foreign origin, indigenous descent, national origin, sex, physical disability, meeting participation, organizational growth, and pregnancy. The manager stated that general management seeks talented individuals, regardless of personal conditions, and confirmed that pregnant women have been hired with the expectation that they contribute to the organization. The pregnancy variable score also fell within the medium range (0.35 to 0.74).

For Group III, managers 3, 5, 8, 10, 13, and 14 expressed general support for the inclusion of all individuals, regardless of physical appearance or life circumstances. However, this was only reflected in certain variables such as sexual preference, religion, indigenous descent, access to well-paid positions, and general training. Concerning pregnancy discrimination, they agreed that it is important to include and promote pregnant women but stressed the need to assess the risks of the roles being applied for, particularly in terms of exposure to extreme weather or agrochemicals. Notably, these managers did not provide concrete examples from their organizations, which negatively impacted their evaluation. As a result, this group obtained a low level score of 0.

In Group IV, managers 1, 7, 11, and 12 stated their support for non-discrimination in the workplace, specifically in relation to sexual preference and age. They noted that acceptance efforts have progressed and that the inclusion of older adults and people with diverse sexual orientations is becoming more normalized. They also mentioned ongoing work on areas like religion, indigenous descent, fair pay,

general training, training for new needs, meeting participation, sex, socioeconomic status, public opinion, physical disability, and opportunities for organizational growth. Regarding pregnancy, these managers indicated that their organizations have formal policies prohibiting pregnancy testing or inquiries during recruitment or promotion processes. They confirmed that pregnant women have been hired and have fully exercised their rights. They emphasized a commitment to providing the necessary tools for a safe and comfortable work environment. This group obtained a high score, ranging from 0.75 to 1.00.

It is also worth noting that 6 of the 14 managers interviewed were women (42.85%), some of whom started as assistants and have grown professionally within the organization—demonstrating career advancement irrespective of pregnancy or maternity.

*2. Social Innovation Levels Across Organizations*

Table 1 (see Annexes) indicates that organizations 6 and 7 have 10 certifications each. They are followed by organizations 2, 4, 5, 8, and 14, which hold between 5 and 8 certifications. Organizations 1, 3, 9, 10, 11, 12, and 13 have between 2 and 4 certifications.

Based on the proportion scores assigned to each certification (see Table 2 in the Annexes), the final social innovation level was calculated for each organization using a valuation block (see Table 3 in the Annexes). Following Baumgartner and Ebner (2010), organizations scoring: 0 to 0.9 were categorized as low level, 1 to 1.9 as medium level, and 2 to 2.9 as high level.

The results are as follows:

- Organizations 4, 6, and 7 achieved scores between 2 and 2.9, placing them in the high social innovation level category, supported by their extensive certification compliance.
- Organizations 2, 3, 5, 8, 10, 11, 13, and 14 also achieved high scores, between 2 and 2.9, suggesting a strong commitment to social innovation.
- Organizations 1, 9, and 12 scored between 0 and 0.9, indicating a low level, as they are still in the early stages of adopting strategies aligned with social innovation and sustainable development.

*3. Association Between Pregnancy-Based Non-Discrimination and Social Innovation Level*

The previously defined groupings (I, II, III, IV)—based on non-discrimination variables (with emphasis on pregnancy) processed in RStudio—were integrated with the social innovation valuation data (see Table 3 in the Annexes).

The findings (see Table 4) were as follows:

- Organizations 4, 6, and 7 achieved a high social innovation level, demonstrating extensive compliance with certifications.
- Organizations 2, 3, 5, 8, 10, 12, and 13 showed medium-level compliance.
- Organizations 1, 9, and 11 were placed in the low-level category, indicating the need for further efforts in environmental protection and employee welfare to meet certification standards.

In conclusion, most organizations in Sonora's table grape system are advancing toward social innovation: 11 of the 14 organizations (78%) have either achieved a high level or are actively implementing improvements to reach it. Only three organizations remain at the initial stage.

With regard to non-discrimination due to pregnancy:

- Managers from organizations 2, 4, 6, and 9 (Groups I and II) showed the strongest commitment.
- Managers from organizations 3, 5, 8, 10, 13, and 14 (Group III) demonstrated moderate commitment.
- Managers from organizations 1, 7, 11, and 12 (Group IV) showed a minimal focus on this issue.

Finally, a Pearson Chi-square test of independence was conducted. The test yielded a Chi-square value of 11.132, with 6 degrees of freedom and a p-value of 0.08438. This result rejects the hypothesis of independence, indicating a statistically significant association between the variables: the level of social innovation is dependent on the degree of pregnancy-based non-discrimination within the organization.

## 5. Discussion

The statements made by managers regarding the importance of hiring and promoting pregnant women within the organization, while ensuring full enjoyment of their legal rights, are consistent with the findings of González et al. (2021). However, Bilo and Tebaldi (2020) note that the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF) stress the need to assess the risks faced by a pregnant woman and her baby before assigning them to a position, given that some workplace conditions may pose hazards.

Managers' responses concerning the implementation of policies that prohibit requesting pregnancy tests from women during recruitment or promotion processes align with Varas (2022), who emphasizes the need to raise awareness of such discriminatory practices and provide information to eradicate them, thereby fostering fairer and more equitable workplaces. This practice reflects one of the demands made by consumers of this product and is included in the system's certification requirements, in accordance with Contreras (2019) and Terán (2022).

According to Guadarrama et al. (2018), social innovation is directly linked to the principle of sustainable development and the criterion of social responsibility. Furthermore, as noted by Meza et al. (2017) and Baumgartner and Ebner (2010), each organization has a certain level of maturity in this regard. This is consistent with the present findings: organizations that continuously strive to meet certification standards progress through maturity levels ranging from "satisfactory" (low) to "sophisticated" (high).

The Chi-square test confirmed a dependency between the variables "non-discrimination due to pregnancy" and "social innovation," which is consistent with Acosta (2014), who used Pearson's Chi-square values to determine variable dependency in studies with small samples.

## 6. Conclusions

This study has addressed workplace non-discrimination on the basis of pregnancy with the aim of advancing toward social innovation—a concept closely tied to the principles of sustainable development and social responsibility. The table grape organizations in Sonora can move in this direction by relying on certifications, audits, and quality seals that guarantee care for both the environment and workers throughout all organizational processes.

It is evident that managers who demonstrated a moderate to high inclination toward non-discrimination based on pregnancy (organizations 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, and 13) are either in the process of transitioning toward social innovation or have already achieved a high degree of compliance with this concept. This accounts for 78.57% of the system.

Through the Chi-square test results (value, p, and degrees of freedom), it was concluded that workplace non-discrimination due to pregnancy is related to the level of social innovation among table grape organizations in Sonora.

Regarding the academic field, this article presents an original contribution by establishing a relationship between the concept of social innovation and workplace non-discrimination based on pregnancy. This offers a foundation to better understand the specific challenges faced by the table grape system in the state of Sonora.

With respect to the organizations themselves, this study encourages the elimination of discrimination based on pregnancy—and other grounds—as a means to restructure recruitment, promotion, and participation processes, as well as to reform organizational structures. These changes will help organizations transition toward social innovation and cultivate a renewed organizational culture and improved public image. Moreover, they will contribute to reducing workplace inequalities and promoting balance across organizational roles.

A limitation of this study is that interviews were conducted exclusively with organizational managers. Future research should consider applying the instrument to other hierarchical levels. It is also recommended to design an additional instrument to gather more specific information on recruitment, promotion, and participation processes currently in use within the table grape organizations in Sonora.

This is an exploratory study that serves as a starting point for more in-depth research aimed at fully explaining the behavior of organizations seeking to ensure their transition toward social innovation.

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## Annexes

**Table 1.** Certifications by organization.

| Organización | Primus GFS | USDA Organic | Global GAP | Fair Trade | México C.S. | SENASICA | SMETA | DEALTI | DEAR | Kroger | Rain Forest | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 3 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 7 |
| 5 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 10 |
| 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 10 |
| 8 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 6 |
| 9 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 10 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 |
| 11 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 13 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| 14 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 |
| TOTAL | 7 | 5 | 8 | 5 | 3 | 6 | 7 | 4 | 1 | 2 | 3 | |

**Source:** Own elaboration

**Table 2.** Proportion corresponding to each certification, audit, and label according to the participation achieved in the three areas of sustainable development.

| Certification | Scope of social innovation | | | | | | Total Proportion |
|---|---|---|---|---|---|---|---|
| | Environmental | | Social | | Economic | | |
| | Score | Proportion | Score | Proportion | Score | Proportion | |
| Primus GFS | 58 | 0.0838 | 97 | 0.0958 | 0 | 0.0000 | 0.1796 |
| USDA Organic | 119 | 0.1720 | 144 | 0.1422 | 0 | 0.0000 | 0.3141 |
| GlobalGAP | 93 | 0.1344 | 124 | 0.1224 | 0 | 0.0000 | 0.2568 |
| Fair Trade | 63 | 0.0910 | 20 | 0.0197 | 6 | 0.1935 | 0.3043 |
| México C.S. | 140 | 0.2023 | 83 | 0.0819 | 0 | 0.0000 | 0.2842 |
| SENASICA | 143 | 0.2066 | 100 | 0.0987 | 6 | 0.1935 | 0.4989 |
| SMETA | 33 | 0.0477 | 123 | 0.1214 | 10 | 0.3226 | 0.4917 |
| DEALTI | 0 | 0.0000 | 44 | 0.0434 | 0 | 0.0000 | 0.0434 |
| DEAR | 0 | 0.0000 | 45 | 0.0444 | 2 | 0.0645 | 0.1089 |
| Kroger | 15 | 0.0217 | 143 | 0.1412 | 3 | 0.0968 | 0.2596 |
| Rain Forest | 28 | 0.0405 | 90 | 0.0888 | 4 | 0.1290 | 0.2583 |
| TOTAL | 692 | | 1013 | | 31 | | |

**Source:** Own elaboration

**Table 3.** Proportion corrresponding to each certification, audit, and label.

| Organization | Primus GFS | USDA Organic | Global GAP | Fair Trade | Mexico C.S. | SENASICA | SMETA | DEALTI | DEAR | Kroger | Rain Forest | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0000 | 0.0000 | 0.2568 | 0.0000 | 0.0000 | 0.0000 | 0.4917 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.7485 |
| 2 | 0.1796 | 0.3141 | 0.2568 | 0.3043 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0548 |
| 3 | 0.1796 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.4989 | 0.4917 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.1702 |
| 4 | 0.1796 | 0.3141 | 0.2568 | 0.3043 | 0.0000 | 0.4989 | 0.4917 | 0.0434 | 0.0000 | 0.0000 | 0.0000 | 2.0888 |
| 5 | 0.0000 | 0.0000 | 0.2568 | 0.0000 | 0.2842 | 0.4989 | 0.0000 | 0.0434 | 0.0000 | 0.0000 | 0.2583 | 1.3416 |
| 6 | 0.1796 | 0.3141 | 0.2568 | 0.3043 | 0.2842 | 0.4989 | 0.4917 | 0.0000 | 0.1089 | 0.2596 | 0.2583 | 2.9564 |
| 7 | 0.1796 | 0.3141 | 0.2568 | 0.3043 | 0.2842 | 0.4989 | 0.4917 | 0.0434 | 0.0000 | 0.2596 | 0.2583 | 2.8909 |
| 8 | 0.1796 | 0.0000 | 0.2568 | 0.3043 | 0.0000 | 0.4989 | 0.4917 | 0.0434 | 0.0000 | 0.0000 | 0.0000 | 1.7747 |
| 9 | 0.1796 | 0.3141 | 0.2568 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.7505 |
| 10 | 0.0000 | 0.0000 | 0.2568 | 0.0000 | 0.0000 | 0.0000 | 0.4917 | 0.0000 | 0.0000 | 0.2596 | 0.0000 | 1.0081 |
| 11 | 0.1796 | 0.3141 | 0.2568 | 0.0000 | 0.0000 | 0.0000 | 0.4917 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.2422 |
| 12 | 0.1796 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.2596 | 0.0000 | 0.4392 |
| 13 | 0.0000 | 0.0000 | 0.2568 | 0.0000 | 0.0000 | 0.4989 | 0.4917 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.2474 |
| 14 | 0.1796 | 0.3141 | 0.2568 | 0.3043 | 0.2842 | 0.4989 | 0.0000 | 0.0434 | 0.0000 | 0.0000 | 0.0000 | 1.8813 |

**Source:** Own elaboration

**Table 4.** Social innovation assignment by certifications according to grouping by non-discrimination in employment (Pregnancy)

| Groups by non-discrimination in employment (Pregnancy variable) | Level of social innovation (Valuation) | | |
|---|---|---|---|
| | Low | Medium | High |
| A | 1 | 1 | 1 |
| B | 0 | 0 | 1 |
| C | 0 | 6 | 0 |
| D | 0 | 1 | 1 |

**Source:** Own elaboration

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Interdisciplinary Faculty of Economic and Administrative Sciences

RESEARCH

# The development and well-being of the population in mining municipalities of the state of Sonora

## El desarrollo y bienestar de la población en municipios mineros del estado de Sonora

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## Abstract

In recent years, Sonora has stood out in the production of gold and silver, being the only state in Mexico that produces molybdenum, amorphous graphite, and wollastonite (Ministry of Economy, 2020), with mines located in both urban and rural areas. The objective of this study is to analyze the levels of development and well-being of the population in the municipalities that host Sonora's main mining centers as of 2020. First, a municipal socioeconomic development index is estimated using Principal Component Analysis (PCA), and then, to assess the results, it is compared with the well-being indices calculated by the National Council for the Evaluation of Social Development Policy (CONEVAL). The findings reveal that among the municipalities with major mining centers in Sonora, four are classified as having very high socioeconomic development, one in the high stratum, two with low development, and three with very low development. Moreover, half of these municipalities had nearly 40% of their population living in poverty despite having mining activities. This is further confirmed by an inverse relationship between development and well-being indices, which could be improved by reforming policies such as the Mining Fund.

**Keywords:** Mining municipalities, development, well-being.

**JEL Codes:** I3, R1, R11

## Resumen

En los últimos años Sonora destaca en la producción de oro y plata, siendo el único productor a nivel nacional de molibdeno, grafito amorfo y wollastonita (S. Economía, 2020) teniendo minas en localidades urbanas y rurales. El objetivo en este trabajo es conocer los niveles de desarrollo y bienestar de la población en los municipios que albergan a los principales centros mineros de Sonora para el 2020. Primero se estima un índice de desarrollo socioeconómico municipal mediante ACP y luego, para evaluar los resultados, se compara con los

índices de bienestar calculados por el Consejo Nacional de Evaluación de la Política de Desarrollo Social. Se encontró que en los municipios donde se localizan los principales centros mineros de Sonora, 4 se clasifican con desarrollo socioeconómico Muy Alto, 1 en el estrato Alto, 2 en desarrollo Bajo y 3 con Muy bajo; Por otro lado, la mitad de los municipios tenían casi al 40 % de su población en pobreza a pesar de contar con minería, lo cual se confirma al mostrarse una relación inversa entre los índices de desarrollo y bienestar, los cuales podrían mejorar al reformar políticas como el Fondo Minero.

**Palabras clave:** Municipios mineros, desarrollo, bienestar.

**JEL:** I3, R1 y R11

## 1. Introduction

The 2030 Agenda for Sustainable Development identifies two of the greatest challenges of the 21st century: reducing inequality gaps among the population and transforming productive processes in the pursuit of a development model that harmonizes the relationship between the economy and the environment (UN, 2015). However, heterogeneous development and income inequality remain pressing issues on the agendas of many countries, particularly in Latin America.

In this context, mining plays a significant role due to its economic, social, and environmental impacts both positive and negative especially since it involves the extraction of non-renewable resources. Mexico boasts one of the most renowned and strategic mining sectors globally, which has played a key role in the country's development from colonial times to the present (Cuen, 2022: 18–25). In 2020, mining accounted for 8.3% of the industrial gross domestic product and 2.3% of the national GDP, despite the shutdown caused by COVID-19 and the gradual reintegration that followed in the subsequent months (Ministry of Economy, 2021).

Mexico's vast mineral resources present a great opportunity for further mining development. In recent years, Sonora has gained national importance due to its production of both metallic and non-metallic minerals. It is the country's only producer of molybdenum, amorphous graphite, and wollastonite (Ministry of Economy, 2020). In fact, the states of Sonora, Zacatecas, Chihuahua, Durango, and Coahuila contribute the most to the country's gold and silver production. Sonora hosts the most important gold-producing companies, while Zacatecas leads in silver extraction (El Financiero, 2020).

In the case of Sonora, "the geological-mining potential is broad and favorable, and there remains the possibility of discovering new mineral deposits of economic interest, as there are many geologically prospective zones that justify further exploration, presenting an opportunity to boost mining activity in the state" (Ministry of Economy, 2020:22). This is exemplified by recent lithium discoveries in the state's mountainous region (ibid., 2021).

The growing importance of mineral resources in the 21st century has led to increased investment in the sector, making it crucial to discuss the extent to which extractive activities contribute to development, especially in the communities where these resources are exploited. This raises the question: What has mining contributed in terms of development and well-being to the people of Sonora? The working hypothesis argues that, while mining is an intensive activity aimed at maximizing profits through mineral exports, it has minimal impact on local or municipal socioeconomic transformation and population well-being.

Therefore, the general objective of this study is to assess the levels of socioeconomic development and well-being of the population in Sonora's main mining municipalities, in order to identify which municipalities, exhibit better development conditions and how their populations fare in terms of well-being. Two specific objectives are proposed: 1) to calculate a Municipal Socioeconomic Development Index (IDSEM) and 2) to identify the mining municipalities with the highest and lowest levels of development and well-being.

This introductory section is followed by four additional parts. The second section presents the theoretical framework surrounding mining activity; the third outlines the methodology and data used in the study. The fourth section presents and discusses the results regarding socioeconomic development and population well-being in the main mining municipalities of Sonora. Finally, the fifth section provides the study's conclusions.

## 2. Theoretical Framework

Two main approaches are recognized in studies on mining activity: classical extractivism and neo-extractivism. These models have been implemented through economic and social policies by various Latin American governments, reflecting the dominant development ideology from the Global North (Veltmeyer & Zayago, 2020).

Classical extractivism refers to activities that intensively use inputs to obtain non-renewable resources demanded globally in the context of globalization (Göbel, 2015; Gudynas, 2015). Examples include mining, oil extraction, and large-scale agriculture high-intensity activities aimed at maximizing profit through exports with little to no local processing.

According to Gudynas (2015), three criteria must be met for an activity to be considered extractivist: 1) High volume and/or intensity of extraction; 2) Resources are unprocessed or minimally processed; 3) At least 50% of the resources are exported. Due to their nature, these processes are among the most environmentally harmful, often requiring intensive use of water and large tracts of land, which are impacted by leachates and gases released during crushing, washing, corrosion, and chemical separation contaminating both soil and subsoil (Mexican Geological Service, 2017).

However, Ramírez (2005) argues that mining per se is not the problem; rather, the issue lies in the purpose of extraction and the way minerals are commodified. The manner in which resources are exploited and how large companies appropriate the surplus value of this activity is crucial. The funds that reach local communities from mining company profits mainly through taxes[1] are minimal and insufficient to offset the environmental damage, let alone to invest in public works or social programs that would significantly benefit mining towns.

Thus, a shift in the development model based on extractive activities is necessary. Neo-extractivism is seen as a variant of classical extractivism, where the state plays a more active role through public policies raising more revenue via stricter tax frameworks and exerting greater control over permits and concessions. This increased state intervention aims to redistribute the generated wealth to mining regions, improving socioeconomic conditions through extractive activity and fostering development in resource-rich areas (Göbel, 2015; North & Grinspun, 2016; Lander, 2014).

In summary, neo-extractivism is an approach that emerged following the deterioration of the neoliberal model globally. It proposes a new way for resource-rich countries to achieve development, as well as an alternative to counter economic and social inequalities and, ultimately, to eradicate the deep-rooted issue of poverty stemming from the inevitable decline of the Washington Consensus (Azamar & Ponce, 2015). However, this series of "progressive" policies has been widely criticized for essentially maintaining a position of subordination to global markets (Acosta, 2013).

Within this theoretical framework lie the new-generation mining projects, which, under public policy guidelines, must incorporate respect for human rights, compliance with environmental legislation, and a commitment to being a driver of local development. In line with the Sustainable Development Goals of the 2030 Agenda (UN, 2015), this contributes to the promotion of a socially and environmentally responsible mining model an approach that has recently begun to be integrated into development plans in Latin American countries.

On the other hand, there is little empirical information on the impacts of mining activity on socioeconomic development understood as the improvement of social and economic conditions at the municipal level. However, there is a vast body of literature on other types of mining-related implications: soil contamination, land dispossession, and productive chain disruptions (Harvey, 2013), which are indirectly linked to local growth and development. Likewise, empirical evidence shows that some communities near mining areas have a high percentage of people living in poverty or experiencing low levels of economic well-being (CONEVAL, 2021). This underscores the relevance of the findings in this study, which are presented after detailing the methodology and data used, as outlined below.

## 3. Methodology and Data

First, the municipalities hosting the main mining

1 The payments made by Canadian gold-producing mining companies accounted for less than half of one percent of their annual profits, ranging from 0.013 to 0.44 percent (Guevara, 2016).

centers in the state of Sonora were identified, along with those classified as urban according to the National Urban System classification (CONAPO, 2018). Next, the statistical technique of Principal Component Factor Analysis was used to estimate a Municipal Socioeconomic Development Index (IDSEM) for the year 2020. In addition, the analysis incorporates the well-being thresholds calculated by the National Council for the Evaluation of Social Development Policy (CONEVAL, 2020).

The IDSEM for each municipality was calculated based on eleven statistically significant[2] socioeconomic indicators used to measure socioeconomic development (see Table 1). Once the eleven indicators were obtained, the principal component factor analysis technique was applied to transform this set of indicators into a new composite index that offers a more straightforward interpretation of the phenomenon under study (Díaz de Rada, 2002)[3].

**Table 1.** Specification of Socioeconomic Indicators.

| Dimension | Component | Indicator |
|---|---|---|
| Social | Education | Average years of schooling in the municipality |
| | | Percentage of the population aged 18 and over with completed high school |
| | Services | Percentage of households with access to water |
| | | Percentage of households with access to sewage |
| | | Percentage of households with access to electricity |
| | | Percentage of households with flooring other than dirt |
| | | Percentage of households with internet access |
| | | Percentage of people with access to IMSS services |
| Economic | Economic | Percentage of the municipality's wages relative to the national total |
| | | Percentage of economic units relative to the national total |
| | | Percentage of Gross Total Production relative to the national total |

Source: Author's own elaboration based on the 2018 Economic Census and the 2020 Population and Housing Census, INEGI.

2 Out of a database constructed with a total of 30 indicators, only 11 proved to be statistically significant. For the statistical validation of the model, see Cuen (2022).

3 For a detailed explanation of this technique, see Díaz de Rada, Vidal (2002), chapters 1, 2, and 3.

**Table 2.** Factor Loadings of Variables Measurings Development in the Municipalities.

| Indicators | Components | |
|---|---|---|
| | 1 | 2 |
| Average years of schooling in the municipality | 0.917 | -0.108 |
| % of population aged 18 and over with completed high school | 0.881 | -0.069 |
| % of households with access to water | 0.823 | -0.216 |
| % of households with access to sewage | 0.848 | -0.287 |
| % of households with access to electricity | 0.807 | -0.267 |
| % of households with flooring other than dirt | 0.882 | -0.284 |
| % of households with internet access | 0.925 | -0.096 |
| % of people with access to IMSS services | 0.733 | -0.144 |
| % of total municipal wages relative to the national total | 0.724 | 0.534 |
| % of economicistas units relative to the national total | 0.651 | 0.679 |
| % Gross Total Production relative to the national total | 0.736 | 0.561 |

Source: Author's own estimation based on socioeconomic indicators and the Principal Component Analysis method.

It is therefore evident that the variables considered are used as indicators of the population's level of development. In this regard, Table 2 shows the weight or factor loading[4], which indicates the influence of each variable on the factor and allows the naming of the factors. This led to identifying the first component as the Municipal Socioeconomic Development Index (IDSEM), as it synthesizes the common variation of the observable variables that were deliberately selected to measure development in each municipality (ibid., 2002).

Table 3 shows that the socioeconomic development index in mining municipalities assumes both positive and negative values. Higher positive values indicated very high municipal socioeconomic development, while very low levels of socioeconomic development in the municipalities were associated with negative values. Thus, for the year 2020, the IDSEM values ranged from a maximum of 2.7040 to a minimum of –1.6772.

4 Factor loadings greater than 0.5 are considered good, those above 0.6 very good, and those above 0.8 excellent (Díaz de Rada, 2002:133).

**Table 3.** Strata for the Classfication of the Municipal Socioeconomic Development Index (IDSEM), 2020.

| Level | Stratum |
|---|---|
| Very High | [2.7040, 0.8759] |
| High | [0.8759, 0.0804] |
| Medium | [0.0804, -0.4515] |
| Low | [-0.4515, -0.8756] |
| Very Low | [-0.8756, -1.6772] |

Source: Own estimation based on socioeconomic indicators and the Principal Component Analysis method.

On the other hand, to measure well-being, the methodology developed by CONEVAL (2020) for measuring poverty in Mexico is used. This methodology considers two approaches: the social rights approach, measured through indicators of social deprivation that represent individuals' fundamental rights in terms of social development; and the economic well-being approach, measured through the goods and services that can be acquired with the population's monetary resources, represented by the well-being lines.

The social rights approach includes six indicators of social deprivation: 1) Educational lag, 2) Access to health services, 3) Access to social security, 4) Quality and space house, 5) Access to basic housing servics and 6) Access to food. Meanwhile, to measure economic well-being, CONEVAL defined two basic baskets, one for food and one for non-food items allowing for estimates across both rural and urban localities.

Based on these baskets, that well-being[5] lines are determined as follows: 1) The economic well-being line (the sum of the costs of the food and non-food baskets), which identifies the population without sufficient income to purchase the goods and services necessary to meet basic needs, even if they allocated all their income to that end; and 2) The minimum well-being line (equivalent to the cost of the food basket), which identifies the population that, even if they allocated all their income to purchasing food, still could not afford a diet that meets minimum nutritional requirements.

By combining the social rights (social deprivation) and economic well-being (income) approaches, poverty is identified based on the following definitions:: 1) A person is considered to be in poverty when they experience at least one social deprivation and have insufficient income to meet their needs (their income is below the economic well-being line) 2) A person is considered to be in extreme poverty when they experience three or more social deprivations and have insufficient income to purchase the food basket (their income is below the minimum well-being line).

## 4. Results and Discussion

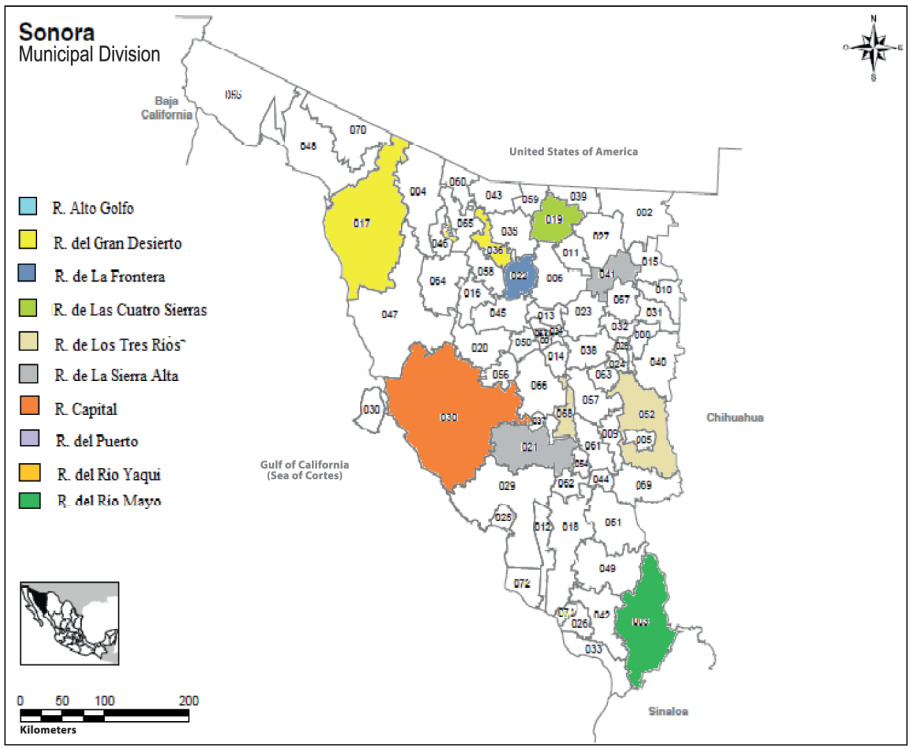
In the 2021–2027 State Development Plan outlines the ten regions that make up the state of Sonora[6] of these, eight regions include municipalities that host at least one of the state's major mining centers (see Map 1 and Table 4). In the Gran Desierto Region: the municipalities of Caborca and Magdalena; in the Frontera Region: Cucurpe; in the Cuatro Sierras Region: Cananea; in the Tres Ríos Region: the municipalities of Sahuaripa and Villa Pesqueira; in the Sierra Alta Region: Nacozari de García; in the Capital Region: Hermosillo; in the Puerto Region: La Colorada; and in the Río Mayo Region: Álamos.

In recent years, mining activity in the state of Sonora has been the most important at the national level. Its production levels in metallic minerals such as gold, copper, and molybdenum, as well as in non-metallic minerals such as graphite and wollastonite, place it in first place nationally. It is also the only producer of molybdenum, amorphous graphite, and wollastonite in the country (Secretary of Economy, 2020). The municipalities of Cananea and Nacozari de García stand out in the production of gold, silver,

5 In 2020, the Urban Wellbeing Line was $3,559.88 and the Rural Wellbeing Line was $2,520.16; while the Urban Minimum Wellbeing Line was $1,702.28 and the Rural Minimum Wellbeing Line was $1,299.30 (Coneval, 2020).

6 The municipalities that make up each region are: Región del Alto Golfo: San Luis Río Colorado, Puerto Peñasco, General Plutarco Elías Calles; Región del Gran Desierto: Caborca, Altar, Sáric, Oquitoa, Átil, Tubutama, Magdalena, Pitiquito, Trincheras, Benjamín Hill, Santa Ana, Carbó; Región de La Frontera: Nogales, Santa Cruz, Ímuris, Cucurpe; Región de Las Cuatro Sierras: Cananea, Naco, Agua Prieta, Fronteras, Bacoachi, Arizpe; Región de Los Tres Ríos: Opodepe, Banámichi, San Felipe de Jesús, Huépac, Rayón, Aconchi, San Miguel de Horcasitas, Ures, Baviácora, Mazatán, Soyopa, Yécora, Villa Pesqueira, San Pedro de la Cueva, Bacanora, Sahuaripa, Arivechi; Región de La Sierra Alta: Nacozari de García, Bavispe, Bacerac, Villa Hidalgo, Huachinera, Cumpas, Huásabas, Bacadéhuachi, Moctezuma, Nácori Chico, Granados, Divisaderos, Tepache; Región Capital: Hermosillo; Región del Puerto: La Colorada, San Javier, Guaymas, Empalme, Suaqui Grande, Ónavas; Región del Río Yaqui: San Ignacio Río Muerto, Bácum, Cajeme; Región del Río Mayo: Rosario, Quiriego, Navojoa, Etchojoa, Benito Juárez, Álamos, Huatabampo. Source https://plandesarrollo.sonora.gob.mx

**Map 1.** Main Mining Municipalities




Source: Own elaboration based on data from INEGI [www.inegi.gob.mx] and the State Development Plan of the State of Sonora 2021-2027

copper, and molybdenum; Magdalena, Caborca, Sahuaripa, and Cucurpe produce gold; La Colorada produces gold and graphite; in the municipalities of Álamos and Villa Pesqueira, tungsten is produced; and Hermosillo is a producer of wollastonite.

In 2018, the municipalities that most contributed to making Sonora one of the top gold producers in the country were: Caborca 40.54%[7], Cananea 6.10%, Cucurpe 8.46%, La Colorada 3.71%, Magdalena 7.36%, Nacozari de García 3.94%, and Sahuaripa 23%, which together accounted for 93.11% of the total gold production in the state. In copper production, the municipalities of Cananea with 65.52% and Nacozari de García with 20.60% stood out, together contributing 86.13% of the country's total production in 2019[8].

Nacozari de García is the main producer of molybdenum, with 56.94% of the production, and Cananea with 43.06%, which together account for 100% of the national production. Likewise, La Colorada stands out in the production of amorphous graphite, contributing 100% of the state's production. Hermosillo is notable for its production of wollastonite, contributing 100% of the total volume in the state, as well as at the national level.

### 4.1. Demographic Distribution in the Main Mining Municipalities

Table 4 (2nd and 3rd columns) shows that the municipalities with the main mining centers had a population of 1,146,241 people in 2020, representing 38.9% of the population of Sonora. The population in these municipalities was concentrated hierarchically in Hermosillo (936,263 or 81.68%), Caborca (89,122 or 7.78%), Cananea (39,451 or 3.44%), and Magdalena (33,049 or 2.88%). The remaining six municipalities had a total population of 48,356 residents, distributed as follows: Álamos (2.18%), Nacozari de García (1.25%), Sahuaripa (0.46%), La Colorada (0.16%), Villa Pesqueira (0.09%), and Cucurpe (0.08%).

7 In the municipality of Caborca, the Penmont mining company extracts open-pit gold at Ejido El Bajío. Penmont is a subsidiary of the Fresnillo PLC consortium - a subsidiary of Industrias Peñoles, one of the most powerful not only in Mexico but in Latin America and owned by Alberto Baillères González with a fortune of over $10 billion, according to Forbes.

8 The state of Sonora "has an infrastructure of more than 40 plants for the processing of metallic and non-metallic minerals, which together represent an installed capacity of around 200,000 tons/day, with a current utilization of 90%" (Secretariat of Economy, 2020:35).

**Table 4.** Sonora. Mining municipalities, population, Socioeconomic Development Index, and Well-being Indexes 2020

| Municipalities | Population | % | City/ City Type[1] | IDSEM | Development Level | LBE | | LBM | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | People | % | People | % |
| *Metallic Mineral Production | | | | | | | | | |
| 26003 Álamos | 24,976 | 2.18 | Rural | -0.6027 | Low | 13,215 | 52.9 | 5,540 | 22.2 |
| 26017 Caborca | 89,122 | 7.78 | Caborca (3) | 0.6552 | High | 35,328 | 39.6 | 9,572 | 10.7 |
| 26019 Cananea | 39,451 | 3.44 | Cananea (3) | 1.1096 | Very High | 16,806 | 42.6 | 5,058 | 12.8 |
| 26022 Cucurpe | 863 | 0.08 | Rural | -1.0442 | Very Low | 360 | 41.7 | 141 | 16.3 |
| 26036 Magdalena | 33,049 | 2.88 | M.de Kino (3) | 0.8382 | Very High | 12,298 | 37.2 | 3,302 | 10.0 |
| 26041 Nacozari de García | 14,369 | 1.25 | Rural | 0.9010 | Very High | 4,130 | 28.7 | 911 | 6.3 |
| 26052 Sahuaripa | 5,257 | 0.46 | Rural | -0.5800 | Low | 2,264 | 43.1 | 856 | 16.3 |
| *Non-Metallic Mineral Production | | | | | | | | | |
| 26030 Hermosillo | 936,263 | 81.68 | Hermosillo (1) | 2.5170 | Very High | 292,957 | 31.3 | 79,114 | 8.5 |
| 26021 La Colorada | 1,848 | 0.16 | Rural | -1.0683 | Very Low | 469 | 25.4 | 139 | 7.5 |
| 26068 Villa Pesqueira | 1,043 | 0.09 | Rural | -1.0148 | Very Low | 281 | 27.0 | 100 | 9.6 |
| Total Mining Municipalities | 1,146,241 | 100.0 | | | | | | | |

1 According to the classification of the National Urban System (Conapo, 2018): metropolitan areas (type 1), conurbations (type 2), and urban centers (type 3).
Source: Own elaboration based on the 2018 Economic Census and 2020 Population and Housing Census using the Principal Component Method.

Furthermore, it can be seen that the population concentration is linked to the urban dynamics of the state. In this sense, Table 4 (4th column) also illustrates that among these municipalities, there is one metropolitan area[9](Hermosillo) and three urban centers (Cananea, Caborca, and Magdalena), which together account for 95.78% of the population residing in the main mining municipalities. The remaining 4.22% is distributed across six municipalities that are not incorporated into the National Urban System (SUN, 2018), and are therefore purely rural municipalities. However, it is worth noting that the municipality of Nacozari de García is planned to be incorporated as an urban center into the SUN by 2030.

### 4.2. Municipal Socioeconómico Development

In terms of the Municipal Socioeconomic Development Index (IDSEM), for 2020, Table 4 (5th and 6th columns) shows that there were 4 municipalities that stood out for having the highest positive values in their IDSEM. These municipalities are classified in the Very High Socioeconomic Development stratum: Hermosillo, Cananea, Magdalena, and Nacozari de García. As previously mentioned, the first three are urbanized municipalities with relatively diversified economies, while Nacozari de García is in the process of transitioning from rural to urban according to the National Urban System (SUN, 2018).

Following the highest to lowest positive IDSEM values, the municipality of Caborca is next, placing it in the High Socioeconomic Development stratum. This municipality also contains another urban center (type 3). This positions it as one of the five municipalities with the most favorable conditions to expand the opportunities for its inhabitants in the pursuit of their own well-being, along with the municipalities in the Very High Development stratum.

No municipality shows a Medium Socioeconomic Development level, but there were two municipalities in the Low Development stratum: Álamos and Sahuaripa. Additionally, due to having the highest negative IDSEM values, three municipalities fall into the Very Low Socioeconomic Development stratum: La Colorada, Cucurpe, and Villa Pesqueira. It is clear that these five municipalities are purely rural, and it could be assumed that their main productive activity is mining, which is not reflected

9 In the National Urban System (Conapo, 2018:7), metropolitan zones (Type 1) are characterized by their size and intense functional integration, conurbations (Type 2) by the physical continuity between two or more localities that form a conglomerate, and urban centers (Type 3) are individual localities.

in their municipal socioeconomic development levels.

### 4.3. Municipal Development and Well-being

When analyzing the socioeconomic development indexes and well-being in the main mining municipalities of Sonora (Table 4, 7th–10th columns), it shows that among the five municipalities with Very High and High IDSEM, three municipalities stand out: Cananea (42.6%), Caborca (39.6%), and Magdalena (37.2%), which had a high proportion of people whose income was not sufficient to reach their economic well-being. It's important to note that the municipalities of Hermosillo and Nacozari de García also approach 30% of their populations in this situation, meaning that at least 3 out of 10 people have an income below the well-being line.

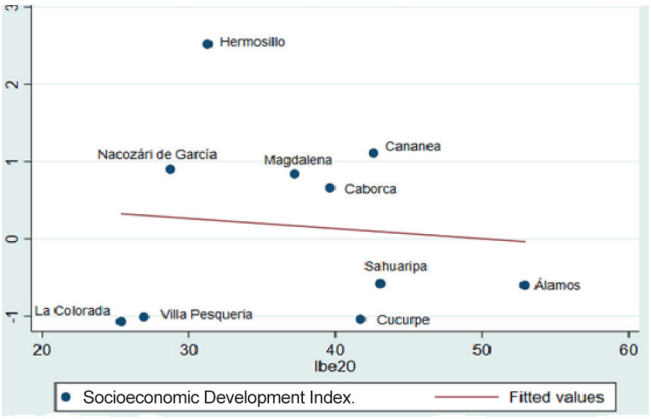
In terms of people whose income does not allow them to acquire a food basket that provides the minimum nutritional requirements, three municipalities stand out: Cananea (12.8%), Caborca (10.7%), and Magdalena (10.0%), followed by Hermosillo (8.5%) and Nacozari de García (6.3%). This implies that among the five municipalities whose IDSEM classifies them in the Very High and High socioeconomic development strata, only the inhabitants of Hermosillo and Nacozari de García enjoy better well-being, as they have the lowest Economic Well-being and Minimum Well-being indexes.

On the other hand, among the five municipalities classified with Very Low and Low socioeconomic development indexes, it is observed that three municipalities show a high percentage of people whose income does not allow them to acquire their economic well-being: Álamos (52.9%), Sahuaripa (43.1%), and Cucurpe (41.7%). These three municipalities also had the highest percentages of people whose income does not allow them to acquire a food basket: Álamos (22.2%), Cucurpe (16.3%), and Sahuaripa (16.3%), followed by Villa Pesqueira (9.6%) and La Colorada (7.5%).

The data from Table 4 allows the creation of Graphs 1 and 2, which show that there is an inverse or negative relationship between the socioeconomic development index of the municipal population and the well-being indexes. In this way, Graph 1 illustrates that as the socioeconomic development index of the municipal population increases, the proportion of people who do not reach their economic well-being decreases. Conversely, as the IDSEM decreases, the Economic Well-being Index (IBE) increases, and therefore, the well-being of the municipal population decreases.

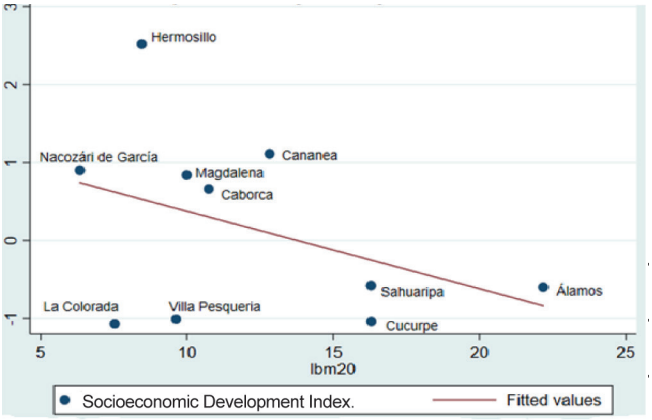
Graph 2 illustrates this trend more clearly. It shows that as the socioeconomic development level increases, the percentage of people whose income does not allow them to acquire the food basket that provides the minimum nutritional requirements for their subsistence decreases, and vice versa. In other words, as the IDSEM increases, so does the well-being of the population in the municipalities (fewer people lack income to acquire the food basket). The municipalities of Hermosillo, Nacozari de García, Sahuaripa, and Álamos are clear examples of the above.

**Graph 1.** IDSEM and LBE in the Main Mining Municipalities of Sonora, 2020.




Source: Created based on the indices from Table 4.

**Graph 2.** IDSEM and LBM in the Main Mining Municipalities of Sonora, 2020.




Source: Created based on the indices from Table 4.

In summary, regarding the five municipalities classified in the Very High and High development strata, it can be observed that three municipalities Cananea, Caborca, and Magdalena have around 40% of their population with incomes insufficient to achieve economic well-being. In the other two municipalities Hermosillo and Nacozari de García approximately 30% are in the same situation. Likewise, Cananea, Caborca, and Magdalena have the highest proportions of people whose income does not allow them to afford the basic food basket, followed to a lesser extent by Hermosillo and Nacozari de García.

On the other hand, among the five municipalities with Very Low and Low development, it is noted that two municipalities Sahuaripa and Cucurpe have around 40% of their inhabitants with incomes insufficient to achieve economic well-being. In fact, the municipality of Álamos has 52.9% in this situation, and in La Colorada and Villa Pesqueira, approximately 26% of residents fall into this category. Similarly, Álamos, Sahuaripa, and Cucurpe have the highest proportions of people whose income does not allow them to purchase the food basket, followed by Villa Pesqueira and La Colorada to a lesser extent.

### 4.4. The Mining Fund: Social Infrastructure and Development

The Mining Fund was a public policy instrument implemented to promote the development of social infrastructure projects in mining municipalities during the period 2014–2017. However, it was discontinued due to operational inefficiencies and alleged corruption, according to the federal administration known as the Fourth Transformation. The allocation of the Fund was based on two criteria: (a) 7.5% of the value of the extractive activity in each municipality, and (b) 0.5% of the revenues from gold, silver, and platinum.

The state of Sonora was the main recipient of Mining Fund resources during the 2014–2017 period. The state received a total of 3,578.7 million pesos from mining activities, which were invested in 382 infrastructure projects across the state (SEDATU, 2019). The ten municipalities considered in this study received a total of 1,894.1 million pesos (Table 5, 4th and 5th columns), accounting for 55% of the total resources allocated during the Mining Fund's active period.

The main beneficiary was the municipality of Cananea, which received a total of 863.0 million pesos (45.6%) invested in 52 social infrastructure projects. This was followed by Nacozari de García, which received 379.62 million pesos (20%) for 50 projects; Caborca, which received 288.9 million pesos (15.3%) for 30 projects; Sahuaripa, which implemented 41 projects with 139.8 million pesos (7.4%); Álamos, which invested 103.2 million pesos (5.4%) in 40 projects; and Cucurpe, which received 78.2 million pesos (4.1%) for 21 infrastructure works.

**Table 5.** Mining Municipalities, Mining Fund Distribution and Population with 3 or more Social Deprivations.

| Municipality | Population | % | Mining Fund Distribution (MF) | | ≥3 Deprivations | | Hypthetical MF Distribution |
|---|---|---|---|---|---|---|---|
| | | | In millions | % | People | % | |
| 26003 Álamos | 24,976 | 2.18 | 103.2 | 5.4 | 10,992 | 8.5 | 160.2 |
| 26017 Caborca | 89,122 | 7.78 | 288.9 | 15.3 | 16,641 | 12.8 | 242.6 |
| 26019 Cananea | 39,451 | 3.44 | 863.0 | 45.6 | 2,275 | 1.8 | 33.2 |
| 26022 Cucurpe | 863 | 0.08 | 78.2 | 4.1 | 66 | 0.1 | 1.0 |
| 26036 Magdalena | 33,049 | 2.88 | 14.5 | 0.8 | 3,267 | 2.5 | 47.6 |
| 26041 Nacozari de García | 14,369 | 1.25 | 379.6 | 20.0 | 979 | 0.8 | 14.3 |
| 26052 Sahuaripa | 5,257 | 0.46 | 139.8 | 7.4 | 1,024 | 0.8 | 14.9 |
| 26030 Hermosillo | 936,263 | 81.68 | 5.6 | 0.3 | 94,327 | 72.6 | 1,375.1 |
| 26021 La Colorada | 1,848 | 0.16 | 19.7 | 1.0 | 211 | 0.2 | 3.1 |
| 26068 Villa Pesqueira | 1,043 | 0.09 | 1.6 | 0.1 | 145 | 0.1 | 2.1 |
| Total Mining Municipalities | 1,146,241 | 100.0 | 1,894.1 | 100.0 | 129,927 | 100.0 | 1,894.1 |

Source: Own elaboration based on data from SEDATU, 2019

Likewise, La Colorada executed a total of 19.7 million pesos (1.0%) across 11 projects; Magdalena budgeted 14.5 million pesos (0.80%) for 5 projects; Hermosillo implemented 3 projects with 5.6 million pesos (0.30%); and Villa Pesqueira also carried out 3 projects with a total investment of 1.6 million pesos (0.10)[10].

In summary, the distribution of the Mining Fund appears highly inequitable. Of the 1,894.1 million pesos allocated to the ten municipalities included in this study, 82% of the resources were concentrated in those with Very High and High levels of development, particularly in Cananea, Nacozari de García, and Caborca. In contrast, municipalities with Very Low and Low levels of development received only 18% of those resources, with Álamos, Sahuaripa, and Cucurpe being relatively the most benefited among them. This suggests that the Mining Fund favored municipalities in higher development strata, while providing fewer benefits to those in lower development strata-areas that are in greater need of investment due to existing socioeconomic lags.

### 4.5. Hypothetical Proposal for the Distribution of the Mining Fund

Assuming that the purpose of the Mining Fund was to support projects that expand social infrastructure, a new criterion for allocation could be the number of people with three or more deprivations in each municipality (Table 5, columns 6–8). Based on this criterion, the 1,894.1 million pesos would be distributed as follows: Hermosillo 1,375.1 million (72.6%), Caborca 242.6 million (12.8%), Álamos 160.2 million (8.5%), Magdalena 47.6 million (2.5%), Cananea 33.2 million (1.8%), Sahuaripa 14.9 million (0.8%), Nacozari de García 14.3 million (0.8%), La Colorada 3.1 million (0.2%), Villa Pesqueira 2.1 million (0.1%), and Cucurpe (0.1%).

In addition to the inequity in the distribution of resources, the original two legal criteria that shaped the Mining Fund seem lax: a) 7.5% of the value of the municipality's extractive activity, and b) 0.5% of revenues from gold, silver, and platinum.

A reform could be proposed to the rights law that increases these percentages, as well as changes to the mining sector income tax, concession regulations, and the price per hectare. Why not increase it to 9% of the value of the municipality's extractive activity? Why not 3% of the revenues from gold, silver, and platinum? This, first, considering that higher increases could result in a decrease in private investment; second, also to prevent only the companies from benefiting from the mining activity; and third, primarily to ensure that the population of all municipalities within the regions is benefited, not just the municipality where the mining activity takes place.

## 5. Conclusions

This study analyzed the levels of development and well-being in the main mining municipalities of Sonora. To do so, a socioeconomic development index was first estimated using the principal components statistical method, followed by the use of well-being thresholds established by the National Council for the Evaluation of Social Development Policy (Coneval, 2021).

The first finding is that municipalities with Very High and High socioeconomic development are those engaged in mining activities and, notably, exhibit some degree of urbanization—such as Cananea, Caborca, Magdalena, Hermosillo, and Nacozari de García which in itself suggests a more diversified economy. According to SUN (2018), Nacozari de García is expected to be classified as an urban center by 2030.

Conversely, municipalities with Very Low and Low socioeconomic development are clearly rural and primarily engaged in mineral extraction. However, this activity does not translate into improved development or well-being for their populationexamples include Álamos, Sahuaripa, La Colorada, Cucurpe, and Villa Pesqueira. This supports the hypothesis of the present study.

A third finding is that among the five municipalities with Very High and High development, only Hermosillo and Nacozari de García simultaneously exhibit better well-being indicators, as they show the lowest values in both the Economic Well-being Index (IBE) and the Minimum Well-being Index (IBM).

10 Another 15 municipalities received a total of $287.45 million pesos to execute 111 additional projects. Moreover, the state government received an allocation of $1,331.11 million pesos, separate from the amounts mentioned above, to carry out a total of 37 infrastructure projects in these or other municipalities with mining activities. In this way, the works were carried out with municipal and state public funds or through collaboration between the two government levels for physical investment (SEDATU, 2019).

It was also found that there is an inverse or negative relationship between the IDSEM and the well-being indices (IBE and IBM). In other words, as IDSEM increases, so does the population's well-being (fewer people fall below economic and food well-being thresholds), and vice versa. The municipalities of Hermosillo, Nacozari de Garcia, Sahuaripa, and Alamos are clear examples.

Furthermore, the inefficient and inequitable allocation of resources from the Mining Fund became evident, as the municipalities with the greatest development lags did not receive the majority of resources. These were instead concentrated in the more developed municipalities. A more equitable criterion would have been to allocate funds based on the number of people with three or more social deprivations.

Lastly, it is essential to amend the tax law, including changes to the income tax law, to enable the state to generate more revenue from the exploitation of important and strategic minerals. The goal is to benefit the population of all municipalities in mining regions not just those directly involved in the activity while maintaining a balance that does not discourage investment. In this way, mining can evolve into an industry that is both environmentally responsible and supportive of productive communities.

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RESEARCH

# An approach to the concept of Agricultural Associativity in the context of rural development

## Aproximación al concepto de Asociatividad Agropecuaria como desarrollo rural

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## Abstract

The associative approach is recognized as a tool for rural development, as well as a socio-business strategy to enhance human capabilities, connect markets, and create economies of scale for small and medium rural producers, leading to increased competitiveness in the agricultural sector. The aim of this article is to analyze the origin and evolution of the concept of associativity and the processes it involves. A qualitative, descriptive methodology was employed through a structured literature review using a documentary design, seeking to interpret the ideas presented by other authors. The contribution of this research is academic in nature, as it explores the state of the art regarding the topic.

**Keywords:** Agri-businesses, social capital, cooperation, producers, rural sector.

**JEL Classification:** M1, O1.

## Resumen

El tema asociativo es reconocido como herramienta de desarrollo rural, además como una estrategia socio-empresarial para perfeccionar las capacidades humanas, articular los mercados y crear economías de escala para pequeños y medianos productores rurales, conducente a la competitividad del sector agropecuario. El objetivo del artículo se plantea en términos de analizar el origen y evolución del concepto de asociatividad y los procesos que en ella se presentan. Para ello, se utilizó una metodología con enfoque cualitativo de carácter descriptivo, por medio de una revisión bibliográfica estructurada con diseño documental, que busca la interpretación de las ideas expuestas por otros autores. El aporte de esta investigación es de carácter académico, en tanto que estudia el estado del arte de la temática en cuestión.

**Palabras claves:** Agroempresas, capital social, cooperación, productores, sector rural.

**Clasificación JEL:** M1, 01.

## 1. Introduction

Globalization creates an uncertain outlook for the population, demanding dynamism, transformation, adaptation, exchange of practices and cultures, and international access to business networks. This scenario requires interaction among countries

in social, economic, technological, political, and environmental matters. Small rural producers are not exempt from this context or from the changes it entails for agricultural development (Thorne, Chong, Salazar, & Carlos, 2015). Latin America must prepare to face the challenges of governmental, academic, business, and technological transformations, and thus calls for the pursuit of innovative paradigms that promote justice, equity, sustainability, and competitiveness (Echeverri & Ribero, 2002).

The modernization of the rural sector requires the design and implementation of processes aimed at improving the living standards of producers, in terms of education, employment, value-added production, productive reconversion, and integration into national and international markets. In this regard, Bertolini (2012) notes that agricultural ventures operate based on the association of the actors involved in the process, generating benefits such as: availability of infrastructure, technology adoption, access to inputs and financing, training, and management of information and communication.

In this sense, proposals are based on new models that integrate agricultural production units, supported by new information and communication technologies, in order to overcome individualism and backwardness in rural areas, and to redefine rural work practices to achieve high levels of profitability, competitiveness, and sustainability (Sanabria, 2022).

For this purpose, the academic, business, and governmental communities have shown interest in studying associativity, generating publications related to this topic. In Brazil, Chile, Peru, Ecuador, Argentina, Colombia, Mexico, Bolivia, Japan, Germany, Italy, Spain, Canada, and the United States, research and experiences have been identified that propose new trends, guidelines, and models that promote the integration of producers and the strengthening of agribusiness organizations (Serna & Rodríguez, 2016).

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In this context, research is conducted on the theoretical production developed around associativity in the rural sector, aiming to answer the research question: How has the conception of rural associativity evolved in both global and national contexts? Therefore, this article documents the relationship between human beings and rural development and analyzes various theoretical frameworks from the origin and historical evolution to its impact on the formation of agribusiness networks.

In the first section, it was established that the objective of the article is exploratory-descriptive in nature, guided by the questions: What is known about agricultural associativity in rural development? What are its characteristics?

The methodology involves a structured and refined literature review, with a qualitative, descriptive approach and documentary design that seeks to collect, analyze, and interpret data from secondary sources in order to understand the studied topic, avoid researcher bias, and prioritize objectivity (Tranfield, Denyer, & Smart, 2003). The article is organized into four sections: first, the concept is explored through a literature review; second, the methodology is defined; third, agricultural associativity is contextualized within rural development; and finally, the conclusions are presented.

## 2. Literatura review

*2.1 Genesis of the concept of Associativity*

This section presents Table 1 as an evolutionary timeline of the origin and development of associativity. The outline draws on contributions from various authors (Ardila, 1965; Colombian Association of Cooperatives, 2015; Barreriro, 2014; Battisti et al., 2020; Corragio, 2012; Dávila et al., 2018; FAO, 2004; Holmes, Arango, & Pérez, 2022; Kasmir, 1999; Liendo & Martínez, 2001; Mondragon Corporation, 2015; Monje, 2011; Ottaviano et al., 2002; Ramos, 2015; Ramírez, Herrera, & Londoño, 2016; Piketty, 2021; Pineda, 2017; Serna & Rodríguez, 2015; Uribe, 1993; Uribe, 2011).

Since primitive times, associativity has been recorded as a human and social activity, a form of community interaction (Aristotle, 1873), and it arises from the need to come together in various ways to

**Table 1.** Historical evolution of the concept of Associativity

| PERIOD | CHRONOLOGY | AUTHORS | CONTRIBUTIONS |
|---|---|---|---|
| EARLY APPROACHES TO THE CONCEPT OF ASSOCIATIVITY | 5th century B.C. ñ 3rd century A.D. | Uribe | Early manifestations of groupings among artisans and agricultural producers during the beginnings of civilization in Egypt, Athens, and Babylon. |
| | 12th century | Uribe | In China, the first savings and credit cooperatives were created. |
| | 16th century 1590 | Colombian Association of Cooperatives (ASCOOP) | Pre-Columbian American tribes Incas, Mayas, and Aztecs organized themselves into mingas, indigenous resguardos, encomiendas, and convites as collaborative work structures. |
| | 17th century | Monje | In response to inequality in Europe, new forms of solidarity- and equality-based business organization (work associations) emerged. |
| | 18th century 1730 1750 | RamÌrez, Herrera and LondoÒo | In the United States, the first associative forms were created. |
| | (1789 ñ 1792) (1750 ñ 1850) | Serena and Rodriguez | French Revolution: Declaration of Human Rights<br>Industrial Revolution: Scientific and technological advances<br>Private property and capitalism |
| | 1830 | Pineda | Robert Owen<br>Father of British socialism and pioneer of cooperativism. |
| | 1844 | Uribe<br>Monje | Cooperativism is born in England with the Rochdale Cooperative, marking a turning point (Principles of Cooperativism). |
| | 1873 | Aristotle | First content stating that man is a social being, inclined toward cooperation and community interaction. |
| | 1895 | RamÌrez, Herrera and LondoÒo | The International Cooperative Alliance (ICA) is founded.<br>Cooperative principles. |
| CONTRIBUTIONS TO THE CONCEPT IN RECENT CENTURIES | 1911 | Ardila | The collective experience called the Kibbutz is created as a means of protection and mutual collaboration. During the Russian Revolution, the kolkhozes were established. |
| | 1950 | Kasmir | Mondragon Cooperative Group, in Guipuzcoa (MondragÛn),located in the Autonomous Community of the Basque Country. |
| | 1957 1963 | Uribe | Caribbean Cooperative Confederation<br>Organization of Cooperatives of the Americas |
| | 1990s | Coraggio | Associativity arises in Brazil.<br>Associative experiences take place in Peru, Colombia, and Ecuador. |
| | 2015 | Luttuada, Nogueira Urcola | Associative forms of family farming in rural development in Argentina. |
| | 2016 | Arbel·ez | Associativity for the development of rural territories. |
| | 2016 | RodrÌguez and RamÌrez | Application of business strengthening processes to producer associations in Colombia. |
| | 2017 | FAO | Associativity among family farmers applied to the Andean Quinoa Producers Network (Argentina, Bolivia, Chile, Peru, and Ecuador). |
| | 2018 | Espinoza Lastra and GÛmez L. | Theoretical construction and methodological proposal to calculate associative capacities (Ecuador). |
| | 2018 | D· vila et al | Promotion of the hybrid combination between market and non-market economies. |
| | 2020 | Battisti et al. | Foundation of the social and solidarity economy in economic production. |
| | 2021 | Picketty, | Reducing structural inequalities of economic, social, and political nature in society. |
| | 2022 | Holmes, Arango y PÈrez | Community cohesion among beneficiaries and development of social capital and organization. |

**Source:** Own elaboration.

achieve objectives and means of subsistence such as food and social coexistence that would not be attainable individually. Cooperation has developed significantly, creating different social models "since the beginning of human life, when people began to group together to protect themselves from the unknown forces of nature and from attacks by other men who, like them, were trying to survive" (Serna & Rodríguez, 2016:3).

Uribe (2011) suggests that cooperation has been useful in addressing economic problems since the earliest stages of civilization. For instance, Egyptian artisans organized themselves for trade and to preserve their benefits; in Athens and Rome, from the 5th century B.C. to the 3rd century A.D., farmers and artisans formed guilds to defend their interests and honor the dead through funeral and insurance societies; in Babylon, Undestabings were formed as associations for the production and marketing of agricultural products; in China, around the 12th century, savings and credit cooperatives were born; in Slavic and Germanic towns, agrarian and labor congregations were created; and Armenian communities formed groups for dairy processing (cheese production).

In 1590, the pre-Columbian tribes (Incas, Mayas, and Aztecs) organized themselves into mingas, indigenous resguardos, encomiendas, and convites, based on Catholic religious traditions, emphasizing collective ownership and labor in rural areas. Likewise, the organizational, social, cultural, and economic practices of the Chibcha and Muisca indigenous communities are highlighted (Colombian Association of Cooperatives, 2015; Ramírez, Herrera, & Londoño, 2016).

In this exploratory line, two key events laid the foundation for cooperative and associative philosophy: the French Revolution (1789–1792), which elevated individual interests related to "politics and society, resulting in the Declaration of Human Rights" (Serna & Rodríguez, 2016:4), and the Industrial Revolution (1750–1850), marked by scientific and technological advances, the formation of private property, and the foundations of capitalism. This new organization led to injustice and chaos in labor relations and state repression; this situation promoted the cooperation and association of workers (unionism) (Uribe, 2011). In response to this crisis, Robert Owen proposed an alternative economic system to capitalism, based on associated labor as a means to improve the quality of life of its participants (Pineda, 2017).

From this perspective, there is a recognized need to build a just, equitable, and sustainable society that reduces deep structural economic and social inequalities, reflected in the distribution of land and income, through processes of collaboration, community ownership, and cooperative labor (Piketty, 2021).

In Latin America, agricultural associativity has strengthened in recent decades as an alternative solution to the challenges that manifest in the low standard of living of the rural population. It is therefore considered a pillar of rural development frameworks. Rural associativity is studied from two angles: a social perspective, based on cooperation, mutual aid, solidarity, and teamwork; and an economic perspective that prioritizes productive projects and the creation of successful agribusinesses (Liendo & Martínez, 2011).

In Brazil, associativity emerged at the end of the 20th century with the goal of increasing the income of the most vulnerable populations, enabling them to improve their quality of life (Coraggio, 2012). In Peru, Ecuador, and Colombia, associative experiences have developed aimed at transitioning from a capitalist economy to a social economy, serving as a catalyst for national economic and social development (Ramos, 2015).

In Colombia, Dávila et al. (2018:89) identified two schools of thought that have influenced the construction of knowledge around associativity: the Latin American and the European. In this regard, the associative economic approach was born within the cooperative movement, from which a theoretical and legal framework has developed, providing an economic, social, cultural, and ethical foundation for the emergence of new associative models, based on principles of solidarity, justice, equity, and democracy.

In summary, the social economy is expressed in solidarity through experiences supported by socio-economic movements and structures and by social capital, using a different mode of production that is collectively managed, with the goal of empowering the beneficiary community (Battisti et al., 2020; Holmes, Arango & Pérez, 2022).

*2.2 Conceptualization*

The concept of associativity originates in prehistoric times and is polysemic in nature. Since individuals began to form groups and promote collectivism within small nomadic tribes, it has served as a voluntary expression and a form of social engagement (Uribe, 2011).

Initially, the associative notion is approached from a socialist perspective rooted in sociology; from the beginning of human life, opposing situations emerged that required people to unite in order to survive. However, the foundations of society have been altered over time. Since ancient times, individualism has been imposed as a model of domination, and later, the feudal system laid the groundwork for the emergence of capitalism.

Nonetheless, between the 18th and 19th centuries, Engels (2009) criticized the capitalist system, labeling it a predator of the human species, concerned solely with profit and capital accumulation. This situation led to rebellion and the emancipation of the oppressed in response to social inequality, giving rise to Utopian Socialism. In this regard, Marx (2004), as a precursor of the socialist movement, offered a critique of power relations, private property, and domination traits of capitalism combined with economic liberalism, surplus value, and labor exploitation. He explained the origins of capital and its reproduction mechanisms, which involve violence, cruelty, and inequality in the distribution, appropriation, and control of economic resources, with the state's consent.

In a second phase, the concept is studied from the perspective of collectivism, which emphasizes individuals subordinated to the group in pursuit of the common good. This idea materialized in antiquity through collective struggles for subsistence and was grounded in collective ownership. However, during the feudal and slave periods, private property prevailed, which was further reinforced under capitalism. In contrast, a new collective model emerged based on wage labor, the socialization of production, and the rise of the proletariat. This situation shaped collectivism as a principle of socialism that promotes equality, non-exploitative labor, and the harmonious development of society (Rauch, 2005).

Additionally, some biblical collective experiences are recalled, such as in the early church of Jerusalem, where people donated their possessions to help those in need (Acts 2:44–45), even though they were not obligated to offer gifts for the benefit of the collective. Likewise, in 2 Corinthians 8:12–14, Paul encourages the Corinthians to support the church in Jerusalem economically to achieve equality. Similarly, religious practices illustrate associativity through foundations and organizations focused on educational, social, spiritual, health, and financial well-being (Casado, 1999).

Villar (2017) proposes a form of collectivism in which ownership is communal, labor is collective, and profits are equitably distributed in order to eliminate the dominance of land accumulation and the exploitation of workers.

Following this line of thought, Dávila et al. (2018) assert that associativity in Latin America is guided by an ethical-moral approach, shaped by the integration of economics and ethics, as promoted by the Catholic Church in its vision of a fairer and more equitable society. This is supported by Razeto (2009) in his Economic Theory of Solidarity, based on solidarity and cooperation, and by Guerra (2002), through his Socioeconomic Proposition of Solidarity, a tool for analyzing economic experiences in Latin America. Thus, from the perspective of the Solidarity Economy, rural associativity is conceptualized as a form of collective development, organized as an enterprise with the goal of meeting the members' needs and achieving collective benefit. This materializes in producer associations formed to withstand competition, improve bargaining power, and enhance offerings.

Liendo and Martínez (2011), for their part, consider rural associativity as a means of participation through which productive units combine their capacities to face challenges derived from globalization. These challenges include connecting to national and international markets, adopting new production and information technologies, and dealing with the small size of their farms.

In this conceptual approach, Dávila et al. (2018) identified in their research an economic approach grounded in Popular Economy or Labor Economy, distinct from capital-based systems. This model recognizes workers' needs and expectations and their ways of organizing (Álvarez & Gordo, 2007; Coraggio, 2009).

In recent times, associativity has emerged as an agent of intervention in labor, social, poverty, and development-related conflicts between the state and individuals. This has led to the formation of a new cooperative order, aimed at promoting associative entities that challenge injustice, inequality, solidarity, mutual aid, and democracy in labor, social, and economic activities that shaped cultural and philosophical change (Piketty, 2021).

As a corollary of this review, it is important to note that there is no unified conceptual definition of the term associativityin the literature. Nevertheless, Bustamante (2007:9) defines it as "a form of cooperation that involves actors of different natures around collective processes, which arise from the understanding that 'alone we cannot move forward'; of social or cultural nature, it enables the activation and channeling of dispersed and latent forces toward the achievement of a common goal."

In the same vein, Poliak (2001) describes associativity as a strategy for collective participation, specifically related to enterprises of a particular nature (agricultural), channeling cooperative efforts to achieve common goals and facilitate problem-solving. From this perspective, grouping is proposed as a way to concentrate and increase production, reduce fixed unit costs, improve bargaining power, and optimize available resources through economies of scale. This view is supported by Ottaviano et al. (2002), who affirm that these types of organizations improve benefits for agricultural producers in areas such as: the incorporation of new technologies, human capital training, market entry and positioning, access to information, and the improvement of production processes and product quality.

The practice of associativity is characterized by the establishment of trust, relationships, and cohesion among producers; confidence in the cooperative process; the setting of common goals and objectives; and holistic management through a systems approach, which considers all key success factors for sound business direction. This includes the participation of members in financial, marketing, human talent, and production activities, as expressed by Pérez & Múnera (2007) and reaffirmed by Déniz, León, & Palazuelos (2008).

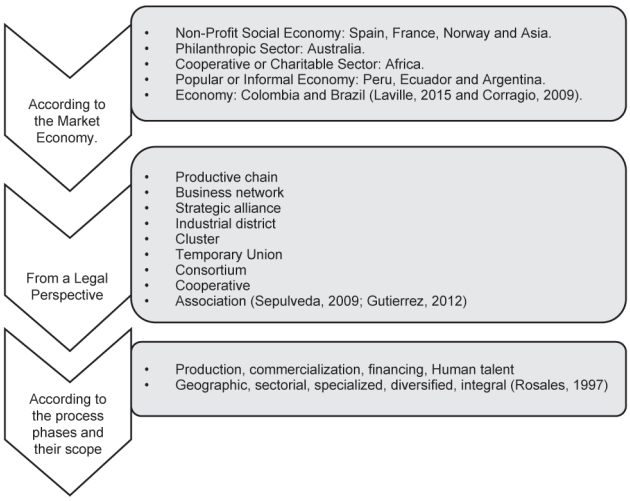
On the other hand, Francés (2008) proposes several characteristics of associativity, including the presence of a shared idea and business project among the group, aimed at identifying an opportunity or solving a problem; a strong sense of belonging and commitment among all members; loyalty to the values, principles, and objectives of the community; and a willingness to face, as a team, the risks inherent in this type of business structure. It also involves coordinating efforts to achieve success and undertaking a solidarity-based project with common goals, shared risks, member autonomy, mutual assistance, and reciprocal commitment (SEPYME, 2011), as illustrated in Figure 1.

**Figure 1.** Characteristics of Associativity


**Note:** Own elaboration based on Déniz, De León, and Palazuelos (2008); Francés (2008); Pérez and Múnera (2007); SEPYME (2011).

Associative forms based on cooperation, mutual aid, collaboration, participation, and teamwork have an alternative legal designation and framework to the market economy operating in each nation, and they present different legal meanings (Dávila et al., 2018), as shown in Figure 2.

**Figure 2.** Classification of associative forms



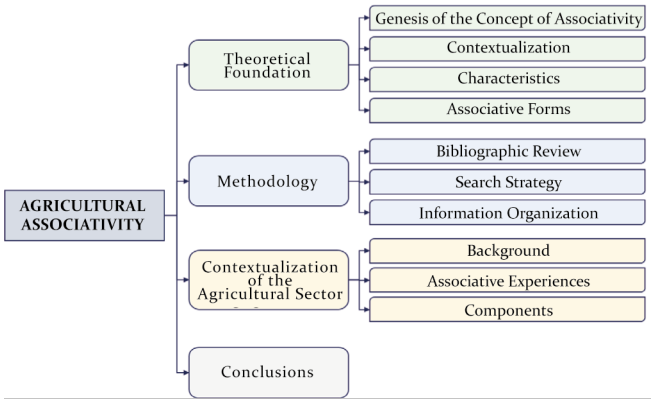

**Note:** Own elaboration.

## 3. Methodology

A qualitative research with a descriptive approach and a documentary design was carried out. This approach seeks to explore, study, and interpret secondary data to understand the topic under examination, avoiding researcher bias and ensuring objectivity (Tranfield, Denyer, & Smart, 2003). The review was developed in three phases: in the first stage, a bibliographic search was conducted using sources registered in scientific databases such as Scopus and Web of Science, referring to scientific articles, theses, books, institutional papers, and conference presentations, complemented by a search using Google Scholar. Once the databases were established, the search conditions were determined according to the exploratory-descriptive objective of the review, guided by the search descriptors "agricultural associativity" and "rural development."

In the third phase, the information was organized through a logical, sequential, and rational outline that facilitated understanding, based on the criteria of filtering, ordering, labeling, integrating, and prioritizing (Maeda, 2006), as presented in the following mind map.

**Figure 3.** Mind Map




**Note:** Own elaboration.

In the final stage, the application to the agricultural sector with a particular focus on rural development was analyzed, combined, and discussed, written in a methodical and sequential form, based on the background and subsequent ideas.

## 4. Contextualization in the agricultural sector

The agricultural sector worldwide faces various challenges aimed at increasing competitiveness and productivity, a situation that requires its evolution through the implementation of innovative practices for the organization and creation of agribusinesses capable of generating employment and contributing to economic growth (Melgarejo, Vera, & Mora, 2013), which would reduce poverty, and achieve sustainability, food security, and sovereignty in countries (OECD, 2014).

In this perspective, as a result of the research, it is inferred that agricultural associativity emerges as an element contributing to rural development and the generation of policies and projects for small and medium producers who ally to face the conflicts stemming from the globalization process and originated from universal ancestral agricultural collaborative experiences (González, 2018).

Thus, the agricultural business associative ideology originated in Europe during the 19th century and materialized in various cooperative expressions: 1) Germany promoted agricultural development based on solidarity collaboration, embodied in an agricultural credit cooperative, where savings and credit operations, supply of inputs, and common capital derived from surpluses were carried out; 2) Rome promoted community exploitation of land, either agricultural or livestock; 3) Italy, France, and Switzerland in the Juna region showed traces of associative activity in the dairy sector; and 4) Slavic countries such as Serbia and Russia also developed collective experiences (Zabala, 2016). Similarly, these solidarity practices were introduced to Canada and the rural sector of the United States, building a strong movement across the region, formalizing cooperative-friendly regulations in the early 20th century (1909).

Additionally, the International Labour Organization (ILO, 2001: 53) presented a report on the contribution of cooperatives to optimize the living and working conditions of agricultural producers and agroindustrial workers; likewise, the Economic Commission for Latin America and the Caribbean (2006), Unda (2008), Ibáñez et al. (2015), Contreras, Palma & Reyes (2009), and the SAC (2010) have conducted research on agricultural associativity processes in different nations; a situation reflected in Table 2.

Based on these approaches, emphasis is placed on the interest in promoting the associative culture in the agricultural sector through processes of integrating small and medium producers, contributing to

the articulation with new markets; increasing negotiation capacity with different interest groups (suppliers of inputs and services, marketers, and consumers); formalizing labor, enhancing human and business capacities; and, in general, improving the quality of life of the rural population.

**Table 2.** Rural Associative Experiences Around the World

| Countries | Practices |
|---|---|
| Belgium | 75% of milk production and commercialization |
| Netherlands | 85% of fruit and vegetable commercialization |
| Luxembourg | 95% of seed and plant production |
| Denmark | 90% of ham production |
| Greece | 50% of animal feed and wine production |
| Germany | 80% of milk and cereral commercialization |
| Italy | 60% of fat and cereal production and commercialization |
| France | 70% of cereal production and 90% of agro-industrial fruit production |
| Spain | Olive oil commercialization |
| Poland | Formation of agricultural farms and agricultural circles |
| Russia | Food supply through kolkhoz (collective farms) |
| Israel | Collective farms.<br>Agricultural collectivization. Kibbutz |
| Algeria | Technical exploitation and modernization of the country |
| Turkey | Use of productive land and complementary services |
| India | Agricultural coperatives and collective agro-industrial societies |
| Canada, United States and Brazil | Agricultural associativity, agricultural creditn cooperatives, services, supply, commercialization, and agricultural transformation |
| Bolivia | Agricultural cooperatives, economic transformation of the country |
| Ecuador | Agricultural production and commercialization Peasant Economic Organizations (OEC) |
| Peru | Associativity for agricultural production with state support, aimed at increasing competitiveness for small producers. PARA project |
| Argentina | Agricultural service and commercialization cooperatives |
| Mexico | Growth, profitability, and sustainability as agricultural policy |
| Chile | Introduction of information technology, associative business development in commercialization |
| Colombia | Strategies for promoting and strengthening agro-associativenenterprises as an integrative element for small and medium producers to achieve sector competitiveness |

**Note:** Own elaboration based on: Economic Commission for Latin America and the Caribbean (2006); Contreras, Palma & Reyes (2009); Ibáñez et al. (2015); ILO (2001); SAC (2010); Unda (2008).

This means that associative practices will focus on the development of human beings as active members of society and their processes of fair, equitable, supportive, and sustainable growth and development. This argument is complemented by Ferrando (2015: 184), who considers that "the factors that favor the associativity of small producers are framed in teamwork, greater economic benefits, optimization of quality, access to markets, capture of financial resources, and cost reduction."

On this ideology, Moyano (1988) considers that the particularities of the countryside demand the creation of associative forms due to the mode of production employed, characterized by a high level of individualism and dispersion, cultivation of the same products leading to oversupply and therefore low prices; therefore, peasant organization favors the possibility of solving this problem.

From this perspective, the agricultural sector, particularly in developing countries, can consolidate by implementing associativity as an integrating element for small and medium producers, who by their nature require the support of different actors to ensure their competitiveness. The national economy should be based on the rural sector, adapting to changes generated by global processes in the economic, social, political, technological, and environmental context, which demands the reorganization of production, commercial, manufacturing, and consumption processes of products and services, granting a leading role to development (Elizondo, 2015).

Following this line of analysis, associativity can be defined as a teamwork process aimed at achieving common goals established by the collective, through principles and values of trust, solidarity, commitment, participation, and leadership, which enable achieving effects that would not be possible individually in the areas of production, marketing, and management (Amezaga, Rodríguez, Núñez, & Herrera, 2013).

This thought is complemented by Villar (2017), who points out that associativity is an element that contributes to expanding the associative business capacities, structured into two groups: socio-organizational (social capital, organizational planning, and territorial integration) and business (economic, productive, technological, and market orientation), which allow strengthening collaboration networks among producers.

In agreement with what has been stated, (Ibáñez, Cabrera, & Martínez, 2015) express that associativity depends on dimensions such as: values (cooperation, reciprocity, transparency, openness, and freedom) and principles (commitment, participation, and achievement of objectives). This argument is validated by Narváez et al. (2009), who assert that the values for forming an associative organization are: transparency, reciprocity, freedom, and openness.

Moreover, the expression of associativity is related in the scientific literature to the notions of social capital, culture, teamwork, in the non-economic component, and competitiveness and economic development, in the economic component (Guerrero & Villamar, 2016) factors considered the foundation for the economic and social progress of countries, motivated by the pursuit of achieving common goals through cooperation and the integration of efforts among producers, aimed at inserting their products into national and international markets.

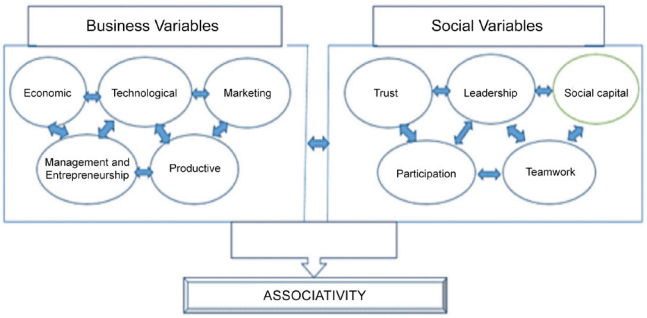
Thus, producer associations represent a collective exercise by farmers who have homogeneous production and commercialization objectives. They compete with each other but simultaneously cooperate and favor the attainment of social and economic benefits for all their members (Brasier et al., 2007).

They also constitute a key tool for obtaining price and market information, allow the absorption and exchange of knowledge, and at the same time facilitate the formation of links and social relationships with all members of the organization (Katungi et al., 2008).

We agree with Berdegué (2000) in stating that rural associativity is related to a process of voluntary incorporation and free adhesion, where producers and companies group together to achieve collective interests related to their productive operation (marketing, technology, entrepreneurship, and business management) and social (cooperation, social capital, and trust); factors necessary to build associative processes articulated with public and private institutions that generate individual and collective benefits. This concept aligns with Vargas et al. (2019), who assert that in the rural sector, collaboration among agro-entrepreneurs combines their particular capacities to improve their benefits around markets and their economic and social progress.

Next, the variables involved in the rural associativity process are graphically presented (Figure 4).

**Figure 4.** Components of rural associativity




**Note:** Own elaboration based on Amézaga, Rodríguez, Núñez y Herrera (2013); Berdegué (2000); Ibáñez, Cabrera, Celerina y Martínez (2015) y Villar (2017).

Associativity in the agricultural sector generates a synergistic effect by maximizing the strengths of all its participants and minimizing their weaknesses through the articulation of the links in the value chain. In other words, integration is the key to achieving profitability, competitiveness, and sustainability in rural producers by aligning their efforts to reach common goals (Mielgo, 2005).

Focusing on Colombia, associativity in the agricultural sector has been understood as an opportunity for growth, seeking to strengthen relationships among participants with common objectives and benefits in both social and economic spheres; in other words, this activity is projected as the future of agricultural development.

The Presidential Agency for Cooperation-Colombia (2016) sees it as "a key strategy for sustainable rural development," in generating social capital and building regions, with the goal of improving the productive, commercial, and social capacity of small producers. In this regard, the country has received contributions and international cooperation practices aimed at creating, strengthening, and developing the human, economic, and environmental capacities of the most disadvantaged rural population through productive alliances, actor integration, and the improvement of production chains.

Similarly, the National Planning Department-DPN (2014) considers it a key element in creating scenarios that optimize the quality of life in rural communities, as it facilitates organization, productivity improvement, cost reduction, product

distribution in markets, achieves economies of scale, increases bargaining power, and engages producers; a definition in sync with the one provided by the Ministry of Agriculture (2018:1) aimed at "strengthening productivity, competitiveness, and sustainability to promote comprehensive social development in the territory and improve the living conditions of rural inhabitants.

An equivalent argument is made by Estrada (2016), who asserts that collective production and management stimulate the development of the productive, social, and business capabilities of the community in rural territories, complemented by the government to openly contribute to the formulation of policies expressed in territorial organization, innovation, and the acquisition of products and better income for small producers. Therefore, in the municipality of Vélez, a certification initiative for the traditional snack was launched, with the aim of obtaining the "Denomination of Origin Bocadillo Veleño." This process is supported by the Swiss-Colombian intellectual property project COLIPRI (2013-2016), which is a cooperation initiative between the Colombian and Swiss governments" (p.134).

Another experience of cooperative participation that arose within the community is related to "artisanal fishing in the northern Pacific region of Chocó, contributing through a participatory and consensual process to marine planning and sustainable fishing" (Estrada, 2016, p.136). This initiative involves external actors such as the Inter-Institutional and Community Group for Artisanal Fishing (GIC-PA) and the Exclusive Zone for Artisanal Fishing (ZEPA), as governmental and academic collaborators (Estrada, 2016).

In this endeavor, it is necessary to formulate innovative associative models that respond to global economic, social, technological, and environmental transformations, going beyond a focus solely on maximizing economic profit, and instead embracing a comprehensive, sustainable, and socially responsible approach. The intention is to take advantage of the opportunities that the agricultural sector offers to small-scale producers through collaboration and integration into national and international markets.

n this line of reasoning, small producers must understand and be empowered to assume the role they play in the rural development of the country, using the associative strategy to generate social capital as an instrument of territorial progress through community tasks and responses to social, economic, and environmental challenges particularly those related to climate change and unequal access to markets. These are further compounded by the small size of their farms, individual labor, and mutual distrust.

## 5. Conclusions

The scientific literature records various findings regarding the historical development of associativity, particularly in the agricultural sector, and the analysis of elements that influence rural development. However, knowledge gaps remain that have hindered the implementation and formulation of policies that would significantly impact the rural development of agricultural communities in Colombia and other Latin American countries (Holmes, Arango, and Pérez, 2022).

In order to provide useful insights to academia and individuals involved in the subject, a thorough literature review was conducted, highlighting the key aspects that should be addressed in cooperative processes of community organization (Figure 5), throughout professional training, research, knowledge creation, and work performance.

**Figure 5.** Word Cloud: Rural Associativity.


**Note:** Own elaboration.

Now then, to face the challenges posed by a globalized world, it is necessary to develop the social talent for cooperation that humans possess, as an innate condition since the earliest manifestations of community organization through family ties, clans, or tribes for managing the search for food as a survival and territorial sustenance strategy (Poveda, 2019).

Particularly in the context of the agricultural sector, small producers group together as a response to the problems caused by internal and external competition. This grouping becomes a strategy to minimize the deficiencies present in rural areas, especially among smallholders with minifundio-type lands. By combining their small-scale productions, they gain leverage in transactions with intermediaries, succeed in reducing large price fluctuations, learn and share knowledge among members, absorb technology and innovation, benefit from market opportunities, and collectively face environmental threats (Salas, 2016).

In this line of analysis, the importance of associativity is inferred as a response to the social and economic shortcomings of rural populations. It takes the form of community-based groups centered on solidarity, teamwork, mutual aid, collaboration, and trust. It also promotes socio-economic projects that foster investment initiatives to generate income for producers in a competitive, profitable, and sustainable environment (Giraldo, López & Cardona, 2020).

In this context, associativity is conceived as a broad concept applied across various scenarios. Originating in ancient times, it has evolved in line with advances in all sectors of society. In the rural sector in particular, this business model should be central to designing an agri-business prototype that connects small and medium producers with distributors, processors, and consumers, through public-private partnerships (State–Business–Academia). These partnerships are key to managing agricultural solidarity organizations, supported by information and communication technologies, technical and marketing assistance (knowledge transfer and exchange), and the formation of marketing networks since today, it is impossible for a single individual to manage all activities in the production and commercialization process.

Thus, a successful case at the Andean level is the "Andean Network of Quinoa Producers", which brought together quinoa producer associations from Argentina, Chile, Peru, Ecuador, and Bolivia. This network was established to improve management in production, processing, and commercialization of quinoa and to enhance socio-economic conditions (FAO, 2017). In Colombia, Giraldo, Lopera, and Cardona (2020) describe the dynamics of community associations and rural development policies in Pereira, with the goal of identifying the positive impacts generated in three cooperatives. As the municipality's policies were implemented, new entrepreneurship ideas emerged, and productive and social projects were developed.

However, we must ask ourselves: What is the new role of associativity? Answering this question requires identifying the new productive paradigms and the opportunities underlying globalization. It involves acting on key aspects of business dynamics: strategic management, risk monitoring, technological modernization, establishing a managerial approach, strengthening human capacities, and implementing technological and administrative restructuring (Gatto, 1999). All of these should aim at regional, institutional, and sectoral development in collaboration with the market, the state, and academia.

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UNIVERSIDAD DE SONORA

Interdisciplinary Faculty of Economic and Administrative Sciences

RESEARCH

# Analysis of inclusive tourism from a critical theory perspective: A look at the mexican case

## Análisis del turismo inclusivo desde la teoría crítica: una mirada del caso mexicano

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## Abstract

The objective of the text is to analyze the concept of Inclusive Tourism through the contrasts of reality. The Critical Theory provides the methodology which is based on the "verification of differences", i.e. in the confrontation and conflict of the affirmed reality and the real reality of the phenomenon in question. The so-called "inclusive tourism", as a typology of tourism, has seen fit to raise awareness in both public and private organizations, and even academia, making visible sectors of the population that could hardly have access to the practice of tourism, in almost any of its modalities and forms. Tourism is undoubtedly an economic practice and why not say it, even elitist, so it is hardly inclusive.

**Keywords:** Inclusive tourism, Critical Theory, Human right, Mexico, Marketing strategy

**JEL Code:** L83

## Resumen

El objetivo del texto es analizar el concepto de Turismo Inclusivo mediante los contrastes de la realidad. La Teoría Crítica proporciona la metodología la cual se basa en la "constatación de diferencias", esto es, en la confrontación y conflicto de la realidad afirmada y la realidad real del fenómeno en cuestión. El llamado "turismo inclusivo", como tipología de turismo, ha tenido a bien concientizar tanto a organismos públicos, como privados, e inclusive la academia, visibilizando sectores de la población que difícilmente podrían tener acceso a la práctica del turismo, en casi cualquiera de sus modalidades y formas. El turismo, es sin duda una práctica económica y por qué no decirlo, hasta elitista, de modo que con dificultad es inclusivo.

**Palabras clave:** Turismo inclusivo, Teoría Crítica, Derecho humano, México, Estrategia de marketing

**Codigo JEL:** L83

## 1. Introduction

It is well known that tourism, as an economic activity, carries the responsibility of ensuring the well-being of regions or places with tourist potential; however, natural phenomena (earthquakes, hurricanes, volcanic eruptions, etc.) and more recently global public health issues (SARS-CoV-2) have severely impacted this activity, with significant consequences. Tourism has gradually managed to recover due to protective measures required by international official bodies.

Nevertheless, it is not only natural or public health issues that prevent people from visiting tourist destinations; economic and physical barriers also

make it impossible. This paper addresses this issue, with the aim of:

Analyzing the concept of Inclusive Tourism through the contrasts of reality, to identify both theoretical and practical challenges of this type of tourism.

The specific objectives that will help achieve this aim are:

1) Describe the concept(s) of inclusive tourism.

2) Describe the events in Mexico related to inclusive tourism.

3) Contrast the realities of inclusive tourism.

After an exhaustive review of the specialized literature on Inclusive Tourism, it was discovered that the scientific community has yet to reach a consensus on the concept of inclusive tourism, which represents a significant theoretical gap on the subject.

It is precisely due to this theoretical gap or research problem that the hypothesis of this study is that if there is a conceptual consensus on inclusive tourism, then its practice will make sense and benefit both users and tourism service companies, thus justifying its conceptual existence.

Critical Theory provides the methodology used for this analysis, which is based, according to Bonß (in Leyva, 2005), on the "identification of differences", that is, the confrontation and conflict between the affirmed reality and the real reality of the phenomenon in question, to contribute to the construction of the theoretical body, in this case, of tourism. This means that criticism should be made to construct, not the other way around.

Such contradiction or contrast of realities arises in the context of lived experience, that is, in social praxis, which comes from arguments, in this case, of a theoretical-conceptual nature. The affirmed reality refers to official arguments, which – generally – serve to convince or manipulate various actors to follow an established model that should not be questioned. On the other hand, the real reality refers to processes that do not take official arguments for granted, generating the contrast or conflict between both realities.

To illustrate the two realities, the example of the new Felipe Angeles airport will be used. According to the affirmed reality (the official perspective, in other words, the federal government), it is a world-class airport capable of competing with the best in the world. However, the real reality exposes the lack of both road access, complementary services (taxis or buses), and options, meaning that it does not have enough air routes.

Although the Critical Theory of the Frankfurt School was born in a particular context, its arguments serve for studies like the one presented here, since it is necessary to critique and deconstruct the reality of the phenomenon from its concept to later transform it socially.

As tourism researchers, it is necessary to question the existence and proliferation of a large number of tourism typologies, which only describe the activities tourists engage in, so that this critique contributes the basis for the formal continuity of tourism knowledge.

The so-called "inclusive tourism," as a typology of tourism, has made public and private organizations, as well as academia, more aware, highlighting sectors of the population that would have difficulty accessing tourism in almost any of its forms and modalities.

Through the documentary review, it was found that it lacks a homogeneous concept accepted by the scientific community, as it presents argumentative flexibility, allowing derivations and complicating its conceptual properties.

Historically, it has been the case that both economically vulnerable people and those with physical or intellectual disabilities belong to groups or segments that are disadvantaged in terms of labor, educational, recreational, and tourism opportunities, among others, which hinders social and human development, making them almost invisible to official entities and society. Culturally, this leads to marginalization and segregation due to their difficult integration into economic and even leisure activities.

In the social context, the issue of inclusion has been raised in the form of the well-intentioned need for

integration or visibility of the segment in question, opening some labor-related spaces or opportunities.

In terms of the political framework, both inclusion and inclusive tourism have gained relevance in official discourse. Through entities such as infrastructure policies or the World Tourism Organization (UNWTO), there is a stated urgency to adapt both city and building facilities (in terms of accessibility, such as the implementation of ramps) and tourism products and services (special rooms, special beach wheelchairs, etc.). Similarly, the idea of enjoying rest and leisure, expressed as the right to tourism, is emphasized, where "everyone" can enjoy tourism resources, and along with this, the creation of "social" or "inclusive" programs involving vulnerable sectors of society is promoted.

## 2. Methodology

The methodology employed for this study will be qualitative and documentary in nature. However, it will also be necessary to incorporate statistical evidence from official sources to empirically contrast the reality of inclusive tourism in Mexico.

Critical Theory from the Frankfurt School, in turn, provides a research method inspired by Hegelian-Marxist postulates, which leads to interdisciplinarity (Hernández, 2013).

According to representatives of the Frankfurt School, the method must "fulfill the task of accounting for its object of study and result in a theory that reveals social contradictions" (Hernández, 2013: 3–4). This means that both the method and the theory share the responsibility of uncovering contradictions arising from the object of study.

For Hernández (2013: 4), "The epistemic-ontological emphasis of this methodology necessarily leads to a critique of ideologies," where the research focuses, according to the author, on "destroying any illusion constructed as scientific discourse, philosophical system, political or cultural model" that attempts to evade or obscure contradictions.

In summary, the Critical Theory of the Frankfurt School offers a framework aimed at overcoming "the simplicity, idealistic stereotypes, and rigidity of conventional conclusions and interpretations regarding the progress of scientific knowledge in the social sphere" (Gamboa, 2011: 48).

## 3. Theoretical framework

The Frankfurt School's Theory is founded on the rejection of any justification of the socio-historical reality, as it considers it to be unjust and oppressive. Instead, it advocates for the search for a new, more rational and humane reality.

Critical Theory, according to Gamboa (2013: 48), was conceived and developed to foster an understanding of the historical and cultural situation of society, with the firm objective of "generating actions aimed at its transformation".

Such understanding enables the interpretation of the problems of modernity, "which contemporary capitalist society faces due to the changes and transformations it has undergone" (Gamboa, 2011: 49), thus prompting a call to awareness among the social groups capable of enacting societal transformation.

At this point, traditional theory—understood as that which serves the natural sciences and later contributed to the "physicalization" of society—fails to perceive social issues. On the contrary, by employing scientific methods, it remains committed to the pursuit of economic progress and development. Therefore, it became necessary to propose a theoretical stance that would be critical, one that, in the words of Hernández (2013: 4), "must assume and account for these oppositions".

Hence, the fundamental task of Critical Theory has been to uncover contradiction by grounding itself in its temporal context and the human condition throughout history.

The primary concern of the Frankfurt School's Critical Theory is thus the revolutionary reconstruction of society in the interest of human emancipation. In other words, it seeks to lift the veil—cultural, intellectual, scientific, etc.—that certain interests impose on society to conceal realities that may be uncomfortable.

Finally, theory must address the economic, historical, cultural, and psychological aspects that influence various events. Consequently, society must be explored not only through positivist tools that provide economic explanations, but also through an interdisciplinary approach—drawing on philosophy and psychology, for instance—not only to contrast but also to understand and achieve transformation.

## 4. Conceptual approach to inclusive tourism

This tourism type has shifted attention towards demographic sectors for whom tourism and its practice become secondary due to economic, mobility, and even cognitive limitations. However, it is essential to begin by delving into its concept, which can easily lead to conceptual confusion regarding its scope and limitations.

The term "inclusive", according to the RAE (2022: n/p), is the adjective "that includes or has the virtue and capacity to include". This implies that the community can integrate or include any individual regardless of their origin, economic situation, etc. When applied to tourism, it is defined by www.autismomadrid.es (2013: n/p) as:

> Tourism that enables equal opportunities for all people to fully engage in tourism activities in a safe, comfortable, autonomous, and standardized manner, also seeking economic profitability, benefiting both people with disabilities and sector businesses.

In this regard, Quintero and Núñez (n/d) state that it is "the tourism that seeks to adapt environments, products, and services so that all people can access, use, and enjoy them on equal terms, safely, comfortably, autonomously, and in a normalized way".

Del Real (2018) adds that it is "the one that uses universal accessibility and design for all as necessary strategies and tools to make tourism a reality for all people".

The previous definitions agree on the premise that tourism should be "for everyone", as stated in Article #7 of the World Ethical Code for Tourism (2001: 112), which notes that "The right to tourism for all must be understood as a consequence of the right to rest and leisure..." Additionally, Article #24 of the Universal Declaration of Human Rights affirms: "Everyone has the right to rest, to enjoy leisure time, to reasonable limitations on working hours, and to periodic paid holidays". (UN, 2015: 50).

Sánchez et al. (2000: 230) uphold the previous idea and describe the population segments that inclusive and accessible tourism should reach, merging them into a single group:

> People with physical, sensory, and intellectual disabilities, as well as other population groups such as citizens of the destination, elderly people, foreigners, individuals with strollers, pregnant women, those with temporary disabilities, people with injuries, obese individuals, very tall or very short people, people carrying loads, children, companions of people with disabilities, and those with allergies, among others.

In this sense, Correa et al. (2020) argue that there is conceptual synonymy between Inclusive Tourism and Accessible Tourism, stating that it refers to the conditions and characteristics that tourism establishments must offer for users with disabilities.

The fusion of Accessible Tourism and Social Tourism is what Molina and Cánoves (2010) call Inclusive Tourism or, more specifically, "Tourism for All", emphasizing the need to facilitate access for economically and socially disadvantaged groups.

In summary, inclusive tourism shows conceptual flexibility, allowing it to merge with accessible tourism, both agreeing on the premise of making tourism resources and services available to unconventional population segments for the enjoyment of tourism activities. However, it is worth noting Correa et al. (2020) focus not on the individuals but on tourism service companies with infrastructure or facilities for clients with disabilities.

Thus, inclusive, accessible, and tourism for all represent synonyms, as all three embrace the same idea of equal opportunities, also benefiting the destination and the tourism service businesses involved.

## 5. About different abilities and tourism in Mexico

Empirical evidence on the different types of disabilities is essential to reflect on their current status concerning tourism activities and their inclusion in the tourism phenomenon.

According to the World Health Organization (WHO, 2021), over one billion people, or 15% of the global population, have some form of disability, requiring specialized medical attention. This also involves human rights issues, as individuals with disabilities suffer or are victims of violence, abuse, prejudice, and, as a result, social, economic, labor, and even emotional marginalization. This means that they face not only architectural or informational barriers but also social ones.

According to the Population and Housing Census (INEGI, 2020), there are just over six million people with disabilities in Mexico, representing nearly 5% of the total population. This number increases to over 20 million people, or 16.5% of the national population, when considering those with limitations in performing daily activities such as walking, hearing, communicating (11.1%), or those with mental conditions (0.6%) (see Table 1). More than half of these individuals are women.

**Table 1.** Percentage of the population with disabilities by activity difficulty, 2020

| DISABILITY | PERCENTAGE |
|---|---|
| Walking, climbing, or descending | 48% |
| Seeing, even with glasses | 44% |
| Hearing, even with hearing aids | 22% |
| Bathing, dressing, or eating | 19% |
| Remembering or concentrating | 19% |
| Speaking or communicating | 15% |

Source: INEGI, Population and Housing Census 2020.

It should be clarified that the sum of the percentages in Table 1 exceeds 100% because some individuals have more than one disability.

In terms of age distribution, 40.9% (the largest group) are over 60 years old; 29.8% are adults between 30 and 59 years old; 9.8% are between 18 and 29 years old, and 9.1% are under 17 years old (INEGI, 2020).

In contrast, in the population without disabilities, the largest group is between 30 and 59 years old. As this population ages, the disability rate is expected to rise.

In Mexico, there are some tourist destinations already positioned or in the process of positioning themselves regarding accessibility in products or services, with conditions for adapting facilities (architecture, urban planning, equipment, and furniture), services (staff awareness, policies, and information in various formats for different types of disabilities), and transportation (local, air, and specialized) as minimum requirements for the enjoyment of resources (SECTUR, 2016).

However, there are still few tourist destinations in Mexico with the necessary conditions for accessible tourism development: Cuastecomates in Jalisco, Playa Delfines and Playa Las Perlas in Cancun, Playa Caribe in the municipality of Solidaridad, Bahía Papanoa in Guerrero, Playa Bonita and Playa Puntilla in Campeche, Playa La Entrega in Oaxaca, Kino Mágico in Sonora, and Playa Miramar in Tamaulipas (Morales, 2019).

These destinations are a reality today, thanks to the efforts of both local governments and private investments. However, there are still few destinations that offer this accessibility for the large number of people with disabilities. The services offered are primarily for individuals with mobility issues, providing ramps and special beach chairs, but other types of disabilities are often overlooked.

It is also justifiable that hotels—regardless of their star rating—are unlikely to invest heavily in modifying or adapting their facilities to make them accessible, focusing mainly on ramps. This could be expanded to include signage, menus in braille or sign language, furniture for shorter individuals or those with obesity, staff training, and other measures to meet the needs of all types of disabilities.

## 6. Tourism: For everyone?

As previously mentioned, inclusive or universal tourism responded to the United Nations' call regarding the human right to leisure and paid vacations.

This may be a human right worth claiming in countries where the poverty index is zero, ensuring that everyone has the economic means and time to explore the world or at least part of it.

In Latin America, and particularly in Mexico, this right exists only on paper and is accessible to few due to the large number of marginalized Mexicans living in poverty.

**Table 2.** Multidimensional poverty measurement

| Indicator | Percentage | Millions of people |
|---|---|---|
| Population in poverty | 43.9 | 55.7 |
| Population in moderate poverty | 35.4 | 44.9 |
| Population in extreme poverty | 8.5 | 10.8 |
| Educational backawardness | 19.2 | 24.4 |
| Lack of access to health services | 28.2 | 35.7 |
| Lack of access to social security | 52.0 | 66.0 |
| Lack of access to housing spaces | 9.3 | 11.8 |
| Lack of access to nutritious, quality food | 22.5 | 28.6 |

Source: CONEVAL estimated based on INEGI, 2020.

The idea of the right to tourism and free time to explore the world's beauty is poetic, utopian, and even romantic, at least in Mexico, as the numbers do not support this. As shown in Table 2, high poverty rates prevent millions from exercising their right to travel for leisure. It's important to acknowledge that tourism, as a practice, is an economic activity where not only people move but also money.

Mexico City launched the "Colibrí Viajero" program, aimed at implementing the "for everyone" ideology. The program offers low-cost tours coordinated by the Institute for Dignified Aging. According to the program's website, it was created "to guarantee the right to tourism and inclusion of vulnerable populations in tourist activities through leisure actions..." (SECTUR-CDMX, 2022). These lines contradict the United Nations as the program is not truly for everyone, not just in economic terms but also in age, as it focuses on a specific age group.

Now, considering the informal labor sector, which is economically active yet lacks formal registration or social security, individuals in this segment also have the right to tourism but cannot exercise it because they "live day by day". They cannot afford to take vacations, especially unpaid ones.

Tourism is undoubtedly an economic and, one might say, elitist practice, where certain social strata compete to see who has visited the most distant or expensive destinations. Therefore, it is difficult to argue that tourism is for everyone; or, to put it bluntly, tourism is not inclusive.

We can tell a homeless person they have the right to tourism, but it will be of no use if they have no money to back that right, no matter how noble the intentions of the official or governmental body inviting people to enjoy tourist destinations.

Now, while we reflect on economically and health-challenged groups, what about other social groups that are less attended to? When considering the creation of products or services for everyone, what about vegans, LGBTQ+ individuals, or Muslims? There are few food and beverage establishments offering options for vegans or other diets.

While some destinations are already recognized as part of "Pink Tourism", this does not mean tolerance is widespread, as social prejudices and stigmas persist. Religious groups also need to be included, such as Muslims, Jews, Christians, and others.

To truly be for everyone, the idea of building tourist clusters should be considered, accounting for economic conditions, health, size, sexuality, religious beliefs, and age. This raises the question: Is it possible to create products and services for everyone? As a business, it is undoubtedly a good idea, offering maximum profitability by targeting the entire market.

## 7. The problem of inclusive tourism: A marketing issue

Tourism, as a field of study, has classified or named various activities tourists engage in, such as religious tourism, adventure tourism, cheese tourism, or inclusive tourism.

Many of these tourism types have been designed to position destinations, like romantic tourism, where the Mexican state of Morelos has a strong offering

and, thanks to marketing, a high demand.

Another advantage of these tourism types is the diversification of products or services at destinations. For example, inclusive tourism, where already recognized and established destinations offer alternatives to underserved market segments, such as the Playa Delfines in Cancun, Quintana Roo. Morales (2019: s/p) notes that the sensitization of destinations should be viewed as a "commercial tactic" due to the profitable market niche, as "people with disabilities spend on average almost 30 percent more on travel than tourists without special needs".

Similarly, Correa et al. (2022: 48) argue that inclusive tourism "is adopted as part of the family of services, with the full aim of attracting greater economic flow to Mexico's tourism sector, a market that is still untapped and with great potential".

Here, a question arises: Is the need for visibility and sensitization toward certain demographic segments driven by economic motives, to increase the profitability of tourism products and services?

It is obvious to recall the importance that image holds for any tourist destination, as its future economic success depends on it. But what happens if that image cannot be seen or heard?

The Government of Mexico created the Inclusive Tourism Seal "to certify all those tourism service providers that incorporate accessibility criteria into their daily operations and organizational culture, so that national and international tourists with disabilities can enjoy our destinations" (SECTUR, 2017: s/p). This program recognizes companies that meet indicators such as:

- External facilities;
- Internal facilities;
- Rooms and bathrooms;
- Signage; and
- Attention and information services.

The Ministry of Tourism itself registered the companies granted the seal, and of the 32 tourism service companies, 30 are located in the municipality of León, Guanajuato (SECTUR, 2020). It is evident that both the municipal government and the private sector are making efforts in response to this call. Nevertheless, this initiative makes the destination more accessible than inclusive, due to the distinction between the two concepts.

## 8. Final considerations

Talking about Inclusive Tourism, it is not limited to the installation of ramps, which is the main mistake made to meet certain minimum requirements. To truly say that tourism is inclusive, we must consider, technically, half of the human population: senior citizens, people of short stature, those with obesity, pregnant women, and even parents with strollers.

This can be justified due to the ambiguity of the concept, which allows for interpretation—often to the benefit of certain groups, who act for the spotlight and social visibility, rather than considering the real transformation that is needed.

Both inclusive tourism, accessible tourism, and tourism for all respond to the urgent need to make forgotten social groups visible. While these groups have the right to tourism, it is the tourism industry itself that closes off recreational possibilities for them. Ironically, this is another reason why the issue has been brought to the attention of both public and private organizations, driven by the economic benefits generated from this segment, which helps enhance both the destination's image and the products or services designed for them.

Thanks to Critical Theory and its methodology, the significant contrast between the concept of inclusive tourism and its related terms, the official discourse, and what actually happens as a result of the proposed concept has been revealed. This means that neither the concept, nor the discourse, nor the practice are coherent with each other, as it has been shown that tourism for all is not actually for everyone, at least not in Mexico, due to marked social, economic, educational, and other differences. This makes the right to tourism and leisure an unattainable and utopian idea for the large number of Mexicans living in poverty.

If only the installation of ramps in tourism services and infrastructure at destinations were considered, the severe delay or lack of attention for this social group would still be evident. Therefore, it would not be accurate to describe a country as being concerned about people who use wheelchairs, whether temporarily or permanently.

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RESEARCH

# Evaluation of the perception of the quality of television services in the Isthmus Oaxaqueño, México

## Evaluación de la percepción de la calidad de los servicios televisivos en el Istmo Oaxaqueño, México

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## Summary

The present work was carried out in the five largest populations of the Isthmus of Tehuantepec Mexico, the objective of the article is to evaluate the perception of the quality of services offered by pay television. The specific objectives sought to identify the quality components that determine the satisfaction of external customers of television companies and identify the factors that influence their behavior when to hire the service; the results showed that 57.44% of the clients are satisfied with the services provided, the basic features of the elements were determined that result in customer satisfaction, the percentage of approval by elements evaluated are: tangibility 60.81%, reliability 57.82%, response 55.15%, security 57.83% empathy 56.04% approval, 920 people were surveyed and 31.18% of them they do not hire a television service. The findings found indicate that people are satisfied with the service provided by the television stations.

**Keywords:** Quality, SERVPERF, services.

**JEL Code:** C52, O14, I31

## Resumen

El presente trabajo se realizó en las cinco poblaciones más grandes del Istmo de Tehuantepec México, el objetivo del artículo es evaluar la percepción de la calidad de los servicios ofrecidos por las televisoras de paga. Los objetivos específicos buscaban identificar los componentes de calidad que determinan la satisfacción de los clientes externos de las empresas televisoras e identificar los factores que influyen en su comportamiento a la hora de contratar el servicio; los resultados arrojaron que el 57.44% de los clientes están satisfechos con los servicios brindados, se determinaron los rasgos básicos de los elementos que dan como resultado la satisfacción del cliente, el porcentaje de aprobación por elementos evaluados son: tangibilidad 60.81%, fiabilidad 57.82%, respuesta 55.15%, seguridad 57.83%, empatía 56.04% de aprobación, se encuestaron a 920 personas y el 31.18% de ellos no contratan un servicio televisivo. Los hallazgos encontrados señalan que las personas están satisfechas con el servicio brindado por las televisoras.

**Palabras claves:** Calidad, SERVPERF, servicios.

**Código JEL:** C52, O14, I31

## Introduction

Companies are generally in constant and unforeseen changes in all their guidelines, these can be of a type: social, economic, cultural, and political. These changes are due to the technological and social advances that society experiences over time and consequently, they bring about phenomena and question of great interest for the conduct of any investigation.

Based on these considerations, this study seeks to contribute to all those organizations that offer a television service, because customer service is far most the best expression of this market, to build satisfied customers.

Every service provider company must continuously define and measure customer satisfaction, as service quality is a concept of particular importance for companies, since after receiving a service, customers compare it with what was expected. The expected service is formed based on previous experiences, feedback, and opinions from friends and similar institutions, as well as advertising. If the perceived service doesn't meet the expected level, customers lose interest. However, if the perceived service meets or exceeds expectations, customers are likely to return. In this scenario, the quality of service can be considered a subjective concept, dependent on customer opinions and resulting from their perception of the service provision compared to pre-consumption impressions (Lazzari and Moula, 2014).

Companies focus their attention on the constant measurement of their customers' satisfaction level. In marketing terms, the assessment of quality is understood as an aspect linked to the experiences that arise from using or enjoying a product or service. This is established as a key factor in the customer's future actions, including loyalty.

To ensure customer satisfaction, a company must ensure the quality of its products and services. In this context, quality alone leads to contented customers, representing a mindset that goes beyond simply troubleshooting for them (Horovitz, 1998). For this reason, it's essential to assess customer satisfaction in every interaction with the company, on a transactional basis. This evaluation of satisfaction or dissatisfaction can be advantageous as it's directly linked to specific experiences or actions, enabling the identification of areas for improvement in a more precise and effective manner. Customers can experience varying levels of satisfaction; if the performance of the product or service meets expectations, the customer will be satisfied, while if it exceeds those expectations, the customer will be highly pleased (Lamb, Hair y McDaniel, 2011).

This study assesses how viewers perceive the quality of television services using the Service Performance (SERPERF) model. In recent times, businesses have come to realize that the contentment consumers feel toward their products and services presents a significant competitive edge in the market. This advantage enables them to retain customer preference and maintain a strong market position. Ensuring customer satisfaction has become a challenging endeavor for companies, given that consumers have grown increasingly demanding. Simultaneously, they exhibit curiosity and discrimination while prioritizing product quality attributes, such as reliability, responsiveness, empathy, tangible features, safety, and other related factors.

Maintaining user satisfaction poses another formidable challenge due to the intense competition that an organization may face within a specific market. This study employs the SERVPERF model to assess how television services, namely Sky, Dish, Megacable, and open television, are perceived in the Isthmus of Oaxaca region. The central inquiry of this research is as follows: How do customers evaluate the quality of television services available in the Oaxaca region of the Isthmus of Tehuantepec? To address this query, twelve supporting questions were utilized, and a total of 920 surveys were conducted among users residing in major cities within the Isthmus of Tehuantepec, Oaxaca, such as Ixtepec, Juchitan, Tehuantepec, Salina Cruz, and Matias Romero. The primary objective of this study is to ascertain users' perceptions regarding the quality of television services provided in the Isthmus of Oaxaca.

The proposed hypothesis suggests that, overall, the perception of customers regarding the quality of television services among the population of the Isthmus of Tehuantepec in Oaxaca is unfavorable. Building on the aforementioned premise, this paper comprises an introduction, a theoretical framework, an explanation of the research methodology, subsequent presentation of attained results, and finally, the provision of conclusions and reflective insights on the study's findings.

## Theoretical framework

The globalized and complex context in which companies operate today requires changes in their customer service. Adapting to new circumstances is presented as an unavoidable challenge if we want to guarantee the survival and prosperity of the Company. The companies have recognized that

the satisfactory perception that the client has of their goods and services represents an important competitive advantage for the market because it allows them to maintain their preference and continue to take possession of that market, maintaining that satisfaction in the clients for the companies has it has been a difficult effort to achieve because since the consumers are increasingly demanding, curious and discriminating when prioritizing the quality characteristics of the product through values such as reliability, responsiveness, empathy, tangible elements, security, among other things.

Customers service id for organizations one of the great demands that needs adequate attention to achieve an impeccable provision of the same. Due to its relevance, companies make a great effort to deliver to their clients this set of activities that imply their nature, to make the user feel pleased and find it consistent with the value invested for its acquisition some factors that influence the delivery of customer service, which must be reviewed to establish how to intervene, to improve these actions. For this reason, the present work focuses on the perception of the quality of television services offered in the Oaxaca Isthmus through the SERVPERF model, these services are Sky, Dish, Megacable, and open television through values such as reliability, responsiveness, empathy, tangibles, and security.

Companies need to understand how to offer a service that meets their requirements. From the point of view of the authors Montoya and Boyero (2013), they establish that the service consists of the set of experiences resulting from the contact between the organization and the client, for which it is considered the best way to generate and adequate relationship, upon which their survival and success depend. Leppard and Molyneux (2000) argue that the company must understand the point of view of each user, in terms of their particular interpretation of customer service, since it depends on the different realities of each one. According to them, for some consumers it consists of having access to the service when they need it, considering formal aspects such as compliance with agreed hours, providing receptivity by listening to their needs, respecting the fulfillment of appointments, offering favorable demonstrations, among others. For their part, Aguilar and Vargas (2010) consider that the service consists of a process or set of actions that generally surrounds the moment of purchase, for that reason they are intangible goods that are consumed at the moment of their production.

There are characteristics inherent to the services, which are in the same way typical of customer service and some are described below:

1. Intangibility: According to the authors Zeithaml and Bitner (2002), it represents the most outstanding difference between products and services, since these are not tangible physical goods, palpable, possible to be seen or tasted, an advantage that tangible products have. For this reason, the services cannot be experienced before their use, some difficulties that the intangibility implies in terms of the marketing of the services, are that they cannot be inventoried, they are processed according to the behavior of the demand, and they are susceptible to being imitated. Because they are not patented, they do not have the possibility of being demonstrated at the moment and it is difficult to issue verbal opinions to clients.

2. Comprehensive: All the members of the organization are responsible for the production of the service, since each one intervenes in the final result that is delivered to the client, according to Serna (1999). It is for this reason that harmony is very important in the processes of the company from one area to another, internal communication, compliance with the times established in the general chain of the organization, because they work as an integrated group.

3. Simultaneous production and consumption: García (2016) points out that, regarding the marketing of services, three limitations are observed: first, there is difficulty in generating them massively; secondly, its quality depends on the way it is developed at the moment in front of the client, who tends to get involved, positively or negatively, generating in some cases difficult users. In addition, for Serna (1999), the service is a process where the provider is also part of its production and, therefore, cannot be separated from it.

4. Perishable: The services, considering their very nature, cannot be preserved, stored, returned, or resold. Once obtained, they are consumed and,

therefore, exhausted. Serna (1999) states that customer service is produced and consumed instantly.

5. Satisfaction: As Serna (1999) explains, the service is produced and consumed instantly. Therefore, to a great extent, their satisfaction will depend on the way in which that opportunity is taken advantage of, as well as the efficiency with which it is produced and offered to the user.

6. Added value: From the point of view of Zeithaml and Bitner (2002), a tendency prevails in the users of the services, in terms of involving the attributes or components of the same when they discuss its value because for them it is important what received based on what was paid.

Regarding the SERVPERF model, the model was born as a result of the investigations carried out by Cronin and Taylor (1992) in eight service companies. The proposal was to validate an alternative method to assess perceived service quality and the significance of the relationships between service quality, customer satisfaction, and intentions to repurchase.

Based on a series of questionnaires, they contrasted the measurement of quality made through the discrepancy between expectations and perceptions of consumers and that made only with the perceptions or attitudes of the same. The 22 items proposed by SERVQUAL were used, suggesting on the one hand to apply SERVQUAL and on the other to measure quality only with the perception test proposed by this model. As discussed in the literature review and according to the tests carried out by Cronin and Taylor (1992), the SERVPERF scale seems to closely conform to the implications on attitudes and satisfaction.

In this way, it is stated that SERVPERF will have a better acceptance because the measurement exclusively of the perception of performance reflects more accurately the reality of the service provided.

As a result, they obtained that:

1. The quality of service is an antecedent of customer satisfaction.

2. Customer satisfaction has a significant effect on customer purchase intention.

3. Service quality has less effect on purchase intention than customer satisfaction.

They deduce that the SERVQUAL model of Parasuraman, Zeithaml and Berry (1988), is not the most adequate to measure the quality of the service due to the deficiencies analyzed.

Assuming that service quality and satisfaction are different constructs, the most common acceptance of the differences between both elements is that perceived service quality is a form of attitude, a global evaluation, while satisfaction is the measure of a specific transaction. The treatment of expectations as expected is based on the consumer's experiences with a specific type of service organization.

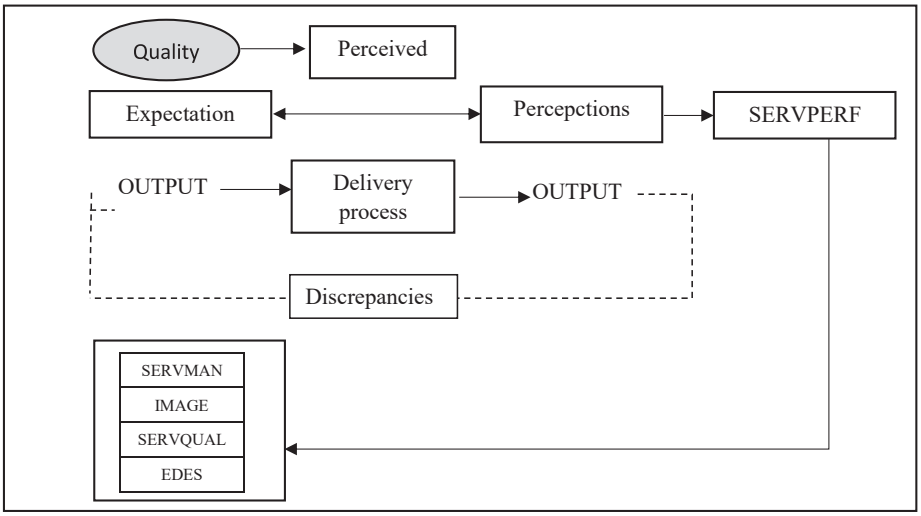
Hence, Cronin and Taylor (1992) state that the service literature has confused the relationship between consumer satisfaction and service quality. This distinction is important for both service managers and researchers because providers need to know whether or not what consumers expect corresponds to the level of provision, or whether or not they are satisfied with the highest perceived quality. The importance of this result has been a serious effort to clarify the relationship between satisfaction and service quality.

Frías (2007) points out that the relationship between service quality, customer satisfaction, and purchase intentions is still unexplored. Figure 1 brings together the fundamental differences between the paradigms that support one or the other model.

In 1992, Joseph Cronin and Steven Taylor strongly criticized the SERVQUAL model because they considered that the scale does not fit all classes of services, and suggested that service quality should be measured based on attitudes. Thus, as a result of their research, an alternative scale called Service Performance (SERVPERF) emerged. As seen in Figure 2, this model is based on perceptions of service quality from the five dimensions of service quality: reliability, responsiveness, empathy, tangibles, and safety. Although the authors are based on the Service of Quality model (SERQUAL), they only focus on measuring perceptions, excluding expectations because they consider that they are external factors that can bias the perception of service beneficiaries (Álvarez, 2015).

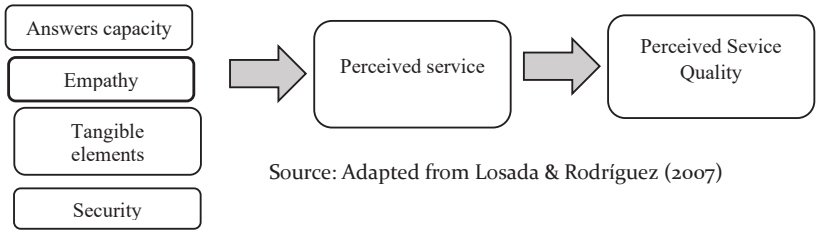
Figure 2 refers to the performance of the provider in the service encounter, which allows the quality of the service to be objectively measured. In the representation, you can see the five dimensions proposed by Cronin & Taylor that group the 22 items defined to assess perception.

**Figure 1.** Paradigms that support Quality Management in Services.




Source: Frías (2007)

**Figure 2.** Graphic representation of the SERVPERF model




Source: Adapted from Losada & Rodríguez (2007)

## Methodology used

Ibarra and Casas (2015) argue that the Servperf model is optimal for achieving the research objectives because the interviewee takes less time to answer the questionnaire since they are only asked once for each item; interpretation and analysis work is simple. In addition, although the opposite might be thought, with this model no information is lost, since the incorporation of a question on global satisfaction related to the service or product makes it possible to analyze the contribution of the remaining items to the level of global satisfaction achieved. On the other hand, the specific aspects that are subject to assessment must be the result of a prior study of expectations, carried out by applying qualitative techniques.

As explained before, the SERVQUAL and SERVPERF models incorporate 22 items, although this number can be considered as the maximum number of attributes to introduce in the quality analysis to be carried out. According to the theory, it is advisable to manage between 10 and 12 items, because it is convenient that the number of items is adapted to the specific needs of each study (Jaráiz and Pereira, 2014). Taking into account the above considerations, a 12-item instrument was designed to be applied in the study (Table 1) similar to that of Calabuig, Quintanilla, and Mundina (2008), Rodríguez et al. (2003), Torres and Luna (2017) applied an adapted model of the SERVPERF of 12 items to assess the perception of the quality of television services. The first two questions measure the tangible elements, the next two the reliability criterion, questions five and six the responsiveness, questions seven and eight assess the security dimension, questions nine and ten assess empathy. Question 11 allows us to know the company that provides the television service, and question 12 qualifies the quality of the signal. The respondent's age, sex, marital status, educational level, and occupation were also documented.

Likewise, each dimension variable was constructed with the average of the variables within each criterion. Regarding the scale, the long numerical one (0 to 10) was used, since it incorporates advantages over others, such as the Likert scale, which, despite being easy to understand, is not very precise in

terms of the score assigned to each element. In the scale used, zero represents the minimum degree of assessment by the user of banking services and 10 is equivalent to the maximum degree of assessment. The convenience of using the numerical scale 0-10 with respect to 1-10 lies in the fact that its midpoint is number five, in addition to the fact that sometimes clients who are very dissatisfied with the service want to value zero and it makes it possible to obtain percentages of the scale directly (Jaráiz and Pereira, 2014). The connection between this scale and the one employed in education is readily apparent, wherein grades 6, 7, 8, 9, and 10 signify passing marks, while scores below 5 indicate failure. Consequently, we will establish a correlation using the terms adequate, satisfactory, commendable, outstanding, and exceptional, respectively.

The quantity of customers to be included in the survey was established using a simple random sampling approach for proportions, with the aim of maintaining a maximum margin of error in estimation of 5% (e = 0.05) and a confidence level of 95% [100(1 – α) % = 95%], while assuming an exceedingly large population. The formula employed for determining the sample size aligns with equation 1:

$$n = Z21{-}\alpha/2\ pq\ /\ e2 \qquad \text{Equation 1}$$

Where Z21−α/2 represents the 1 − α/2 quantile of the standard normal distribution, e stands for the highest acceptable error, p signifies the probability of possessing the sought-after characteristic, and q = 1 − p. Since the precise value of probability p is unknown, the decision was made to account for the maximum variance, which arises when p = q = 0.5. For a confidence level of 95%, the quantile Z21−α/2= 1.96. By employing the computations using equation 1, the smallest required sample size for estimating proportions is obtained; for instance, the sample size needed to estimate the proportion of users perceiving the service as excellent is 920 users. Likewise, since there are five more populated cities in the region studied (Ixtepec, Juchitán, Tehuantepec, Salina Cruz, and Matías Romero), it was planned to obtain at least 920/5 = 184 surveys per population, thus ensuring representativeness by city. The information collection was carried out on business days. It is noteworthy that, although the information was collected according to simple random sampling for proportions since in the first instance the proportions of the different ratings that users gave to the service received would be estimated, the analysis of the random sample collected was more It was broad and included a subpopulation study according to age, sex, marital status, degree of study and occupation of the respondent. To evaluate the reliability of the instrument used (table 1), Cronbach's alpha (Cronbach, 1951) was used, which is determined by equation 2:

$$\alpha = \mathbf{K} \left(1 - \sum_{i=1}^{k} S_i^2 / S_t^2\right) / \mathbf{(K\text{-}1)} \qquad \text{Equation 2}$$

Where $S_i^2$ is the variance of item *i*, $S^2_t$ is the variance of the totals and k is the number of items. If the items are combined additively and measure the unobservable characteristic in the same direction, then the items are strongly correlated and thus we have a reliable instrument. In such a case the coefficient α tends to the value 1. In contrast, α tends to zero if the items are independent or weakly correlated. This indicates that the instrument is not reliable, since it extracts information via unrelated questions, leading to erroneous conclusions.

Taking into account the above considerations, a 12-item instrument was designed to be applied in the study (Figure 3). The first two questions assess tangible elements, the next two reliability, the next two responsiveness, question seven and eight the security dimension, question nine and ten empathy, question 11 lets you know the company that lends you the television service, and 12 rates the quality of the signal. The respondent's age, sex, marital status, educational level and occupation were also documented.

**Figure 3.** Items of the perception survey about the quality of television services

| |
|---|
| 1. The company's employees have a neat appearance |
| 2. The physical facilities of the company are visually attractive |
| 3. The company performs the service well the first time |
| 4. When a customer has a problem, the company shows a sincere interest in solving it |
| 5. Company employees provide prompt service to their customers |
| 6. The employees of the company are always willing to help their customers |
| 7. Company employees are always friendly to customers |
| 8. Employee behavior conveys trust to your customers |
| 9. The company cares about the best interests of its clients |
| 10. The company has convenient working hours for all its clients |
| 11. What phone service do you use? |
| 12. How do you rate the quality of the signal? |

Souce: Self made

## Results

Table 1 shows the characteristics of the respondents by municipality and sex, in total there were 920 participants 528 men and 392 women in the 5 most populated cities of the Oaxacan Isthmus, Mexico. Table 2 shows the total education in percentage, 36.73% of participation are those who studied high school, this is the highest percentage followed by 23.69% who studied secondary school. Table 3 shows the structure of the sample by age group in percentage, the highest participation group is between 20 to 29 years of age with 29.02%, followed by the group of 30 to 39 years of age with 25.67 %. Table 4 presents the structure of the sample by occupation in percentage, people with a job obtained the largest percentage, this being 49.67%.

**Table 1.** Participation by gender

| City | Man | Woman |
|---|---|---|
| Juchitán | 121 | 70 |
| Salina Cruz | 127 | 86 |
| Tehuantepec | 127 | 73 |
| Matías Romero | 86 | 70 |
| Ixtepec | 67 | 93 |
| Total | 528 | 392 |

Source: Self made

**Table 2.** Total education in percentage

| Education | None | Elementary | Junior High | High School | University | Master degree/ Doctorate |
|---|---|---|---|---|---|---|
| % | 0.65 | 18.15 | 23.69 | 36.73 | 19.13 | 1.63 |

Source: Self made

**Table 3.** Structure of the simple by age group in percentage

| Age | 18-19 | 20-29 | 30-39 | 40-49 | 50 or more |
|---|---|---|---|---|---|
| % | 0.32 | 29.02 | 24.67 | 21.84 | 24.13 |

Source: Self made

### Instrument reliability

The results achieved when calculating Cronbach's alpha with the 12 items of the applied instrument, a value of 0.982 was obtained and Cronbach's alpha based on the typified elements is .970, this leads us by the hand to think that the instrument designed to measure the perception of the quality of television services is reliable. Now, by dimension, Cronbach's alpha was 0.985 for the tangible element, .978 for the reliability, responsiveness, and security elements, and for the empathy element. According to Hernández Sampieri et al. (2010, p. 302), alpha values greater than 0.5 correspond to an instrument with medium reliability, and values greater than 0.75 refer to acceptable reliability. For our research, the five measured elements obtained values greater than 0.75.

### Results on the perception of the quality of television services throughout the region

Based on what is stated in the methodology regarding the measurement of the results obtained from the respondents, tables 5 to 9 show the five dimensions of the quality of television services by region: tangible element, reliability element, responsiveness, security element, and empathy element. Table 10 presents the average of the five elements.

The tangible element (Table 5) 60.81% of the participants gave a passing grade against 3.46% disapproval, 35.6% do not have a television at home; the reliability element (Table 6) presents 57.82% approval against 6.43% disapproval, 35.74% do not have a TV at home; In terms of response capacity (Table 7), 55.15% approved the service provided and only 9.19% disapproved, 35.64% do not have TV; Regarding the security element (Table 8), it obtained 57.38% approval and 6.96% disapproved, 35.64% do not have TV; Regarding the empathy element (Table 9), 56.04% approved the service and only 8.30% failed it, 35.64% do not have TV; Finally, the average obtained (Table 10) of the five elements, 57.44% approved the service and only 6.87% disapproved, 35.64% do not have a TV at home.

**Table 4.** Structure of the simple by occupation in percentage

| Occupation | Housewife | Employee | Professional | Student | Entrepreneur | Retired | Unemployed | Other |
|---|---|---|---|---|---|---|---|---|
| % | 16.84 | 49.67 | 6.52 | 7.06 | 5.54 | 5.89 | 4.34 | 4.13 |

Source: Self made

**Table 5.** Average of the 5 elements

| | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Tangible | 3.46% | 60.81% | 35.71% |
| Reliability | 6.43% | 57.82% | 35.74% |
| Response capacity | 9.19% | 55.15% | 35.64% |
| Security | 6.96% | 57.38% | 35.66% |
| Empathy | 8.30% | 56.04% | 35.64% |
| Average | 6.87% | 57.44% | 35.67% |

Source: Self made

Analyzing the perception of the quality of television services by city surveyed, we can see that in terms of the tangible element by city (Table 6) Tehuantepec and Ixtepec more than 64% of the participants give it passing grades, in Matías Romero 42%. of the participants do not have a TV at home; Regarding the reliability element (Table 7) Tehuantepec and Ixtepec, more than 60% of the respondents give it passing grades; Regarding the response capacity element (Table 8), Tehuantepec and Salina Cruz, more than 58% of the participants give passing grades; Analyzing the security element (Table 9) 50% of all respondents give passing grades, in the case of Salina Cruz only 2.11% give failing grades; Finally, regarding the empathy element (Table 10) Tehuantepec, Salina Cruz, Ixtepec and Juchitán, more than 54% of those surveyed give passing grades, only 3.5% of those surveyed in Salina Cruz give failing grades.

**Table 6.** Tangible element tangible by city

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 2.88% | 58.64% | 38.48% |
| Salina Cruz | 0.94% | 62.21% | 36.85% |
| Tehuantepec | 2.50% | 65.00% | 32.50% |
| Matías Romero | 3.21% | 54.17% | 42.63% |
| Ixtepec | 7.81% | 64.06% | 28.13% |

Source: Self made

**Table 7.** Reliability element by city

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 6.28% | 55.24% | 38.48% |
| Salina Cruz | 2.82% | 59.86% | 37.32% |
| Tehuantepec | 4.75% | 62.75% | 32.50% |
| Matías Romero | 7.37% | 50.32% | 42.31% |
| Ixtepec | 10.94% | 60.94% | 28.13% |

Source: Self made

**Table 8**. Response capacity by city

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 9.95% | 51.83% | 38.22% |
| Salina Cruz | 3.99% | 58.92% | 37.09% |
| Tehuantepec | 6.50% | 61.00% | 32.50% |
| Matías Romero | 9.62% | 48.08% | 42.31% |
| Ixtepec | 15.94% | 55.94% | 28.13% |

Source: Self made

**Table 9.** Security element by city

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 3.40% | 58.38% | 38.22% |
| Salina Cruz | 2.11% | 60.80% | 37.09% |
| Tehuantepec | 4.75% | 62.75% | 32.50% |
| Matías Romero | 8.01% | 49.68% | 42.31% |
| Ixtepec | 16.56% | 55.31% | 28.13% |

Source: Self made

**Table 10.** Empathy element by city

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 6.81% | 54.97% | 38.22% |
| Salina Cruz | 3.52% | 59.39% | 37.09% |
| Tehuantepec | 6.25% | 61.25% | 32.50% |
| Matías Romero | 10.26% | 47.44% | 42.31% |
| Ixtepec | 14.69% | 57.19% | 28.13% |

Source: Self made

Table 11 shows the TV service used in percentage used by respondents throughout the region of the Oaxaca Isthmus, first with 45.69% of respondents Megacable and second with 31.18% use open TV, third with 12.88 % use SKY, in fourth place with 6.38% use Dish and those who do not have a TV are 3.87% of the respondents; Table 12 shows the TV service used by city, with the respondents from Tehuantepec and Ixtepec occupying the first place with 53%, they are the ones that most use the service offered by Tele Cable and in second place with 47% of the respondents are those from Salina Cruz using Cable TV.

**Table 11.** Television service used

| Public Access | 31.18% |
|---|---|
| Megacable | 45.69% |
| SKY | 12.88% |
| Dish | 6.38% |
| None TV | 3.87% |

Source: Self made

Regarding the quality of the television signal offered in the region, table 13 presents the results, 79.15% gave passing grades and only 16.97% gave failing grades, 3.87% of those surveyed do not have a television; the results obtained by city: we can point out that more than 82% of those surveyed in Juchitán, Salina Cruz, and Tehuantepec gave passing grades as a good sign, only 22.93% of those surveyed in Matías Romero gave failing grades, these being the city with the most problems in the received television signal.

**Table 12.** Television service used

| City | None TV | Public Access | Megacable | SKY | Dish |
|---|---|---|---|---|---|
| Juchitán | 3.14% | 37.17% | 43.46% | 12.04% | 4.19% |
| Salina Cruz | 2.83% | 33.96% | 47.64% | 8.96% | 6.60% |
| Tehuantepec | 2.00% | 31.00% | 53.00% | 8.00% | 6.00% |
| Matías Romero | 7.64% | 33.12% | 31.21% | 22.29% | 5.73% |
| Ixtepec | 3.75% | 20.63% | 53.13% | 13.13% | 9.38% |
| Average | 3.87% | 31.18% | 45.69% | 12.88% | 6.38% |

Source: Self made

**Table 13.** Signal quality

| City | < = 5 | >= 6 | Does not apply |
|---|---|---|---|
| Juchitán | 14.14% | 82.72% | 3.14% |
| Salina Cruz | 13.68% | 83.49% | 2.83% |
| Tehuantepec | 16.00% | 82.00% | 2.00% |
| Matías Romero | 22.93% | 69.43% | 7.64% |
| Ixtepec | 18.13% | 78.13% | 3.75% |
| Average | 16.97% | 79.15% | 3.87% |

Source: Self made

## Conclusion

As per all gathered data, 64.95% of those surveyed hire a television service, this percentage is distributed as follows: 45.69% Megacable, 12.88% Sky and 6.38% Dish, 31.18% use the open television service and 3.87% do not have a television this is 35.05% of those surveyed do not hire a television service.

Consumers who do not complain about poor service received may choose to go with the competition and carry out a negative communication process with respect to the company.

In the analysis of the perception of the quality of the services of the five elements evaluated, the tangible element obtained an approval rating greater than or equal to six, with 60.81% approval, the responsiveness element only 55.17% gave a rating greater than or equal to six. In general, we can state that television service customers approve of what companies offer them since the general average obtained is 57.44% of those surveyed gave a rating greater than or equal to six.

The failing result of less than five was obtained from the five elements evaluated, the tangible element reached 3.46%; in the reliability element, 6.43% of the respondents qualified with failing evaluations less than or equal to five.

Regarding the analysis by city, the participants in Tehuantepec always gave the highest ratings in the five elements: the tangible element 65%, the reliability element 62.75%, the responsiveness element 61%, the security element 62.75% and, the empathy element, 61.25% gave scores greater than or equal to six.

Carrying out the analysis of the poorly evaluated city, Matías Romero gave the lowest scores: the tangible element, the reliability element, the responsiveness element, the security element, and the empathy element reached 42.30% of the participants giving lower scores or equal to five.

To remain among the consumers' preference, the quality of customer service is one of the key points, 79.15% of those surveyed gave ratings greater than or equal to six, approved the quality of the television signal received, stating that they are satisfied with the service offered.

Ibarra and Casas (2015) said that the importance of quality acquired in services has allowed broadening the spectrum of the term of the dimension of excellence, which in response to the fulfillment of the requirements and needs of the clients, as well as to the correct orientation of the results obtained after an evaluation, in order to contribute to the continuous improvement of the processes and procedures that give meaning to the service that companies provide to their clients and/or users.

The measurement of excellence in services has made it possible to contribute to the achievement of the strategic objectives of organizations that

participate in a specific sector, as part of the large service industry.

The current globalization of markets has led companies to a growing and dynamic competition and therefore has profoundly changed business practice. The customer is the predominant figure and is required to be satisfied with the service offered, so you have to provide the product that he wants. The client is a source of strategic information on the quality of the product or service; therefore, knowing in depth the needs of the consumer, as well as finding the best way to satisfy them with appropriate strategies in a time of changing markets, are vital issues for the survival and prosperity of organizations.

The perception of the quality of the services according to the five elements evaluated indicate higher levels of satisfaction than dissatisfaction, however, improvement processes must be developed since clients always demand better services, for this reason, it is necessary to adopt service approaches to the customer with a long-term vision and incorporate quality models aimed at exceeding customer expectations.

Cruz, González y Valenzo (2021) suggest that enhancing organizational competitiveness can be achieved by focusing on customer satisfaction, which plays a crucial role in shaping models that gauge the alignment of company products and services with customer expectations. Our research highlights that the assessment of service quality across the five key dimensions indicates higher satisfaction levels rather than dissatisfaction. However, it is imperative to instigate improvement processes, as customers consistently strive for optimal service experiences.

Ramos et al. (2020) state that the Servperf model provides a means to assess the quality level of service-oriented companies, leveraging client feedback to devise effective strategies that mutually benefit both the company and its customers. In our scenario, the residents of Matías Romero require alternative strategies due to their negative evaluations of the provided service.

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RESEARCH

# Sustainable and responsible consumption: concepts and analysis from the consumer behavior

## El consumo sustentable y responsable: conceptos y análisis desde el comportamiento del consumidor

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## Abstract

This article analyzes the development of the concepts of responsible and sustainable consumption through the systematic review of articles published on both terms, from the consumer's perspective, in Scopus, Science Direct, Scielo, JSTOR ebooks, Redalyc and Google Scholar, from 2000 to 2020. The scientometric analysis was the methodological procedure that allowed the selection of 43 articles out of a total of 1,641 published in said databases, under the criteria of interest, and to carry out the mapping of concepts through the VOSviewer software design program, to proceed to the conceptual analysis of the terms sustainable consumption and responsible consumption. In results, the descriptive phase focused on quantifying the scientific production on the concepts of interest by geographical area of the study, date of publication and general theme addressed. In the conceptual analysis, the similarities and differences identified in the definitions of both terms are presented, the predominance of research on sustainable consumption was demonstrated, but an emerging interest in these works to study the responsibility exercised by the consumer through their acts of consumption. Everything seems to indicate, by way of conclusion, that in studies of consumer behavior in the economic field there is a conceptual paradigm shift in favor of sustainable consumption.

**Keywords:** sustainable consumption, responsible consumption, consumer behavior.

**JEL code:** D11, M30, Q56.

## Resumen

En este artículo se analiza el desarrollo de los conceptos consumo responsable y consumo sustentable a través de la revisión sistemática de artículos publicados sobre ambos términos, desde la perspectiva del consumidor, en Scopus, Science Direct, Scielo, JSTOR ebooks, Redalyc y Google Scholar, del 2000 al 2020. El análisis cienciométrico fue el procedimiento metodológico que permitió seleccionar 43 artículos de un total de 1,641 publicados en dichas bases de datos, bajo los criterios de interés, y realizar el mapeo de conceptos por medio del programa de diseño software VOSviewer, para proceder al análisis conceptual

de los términos consumo sustentable y consumo responsable. En resultados, la fase descriptiva se centró en cuantificar la producción científica sobre los conceptos de interés por zona geográfica del estudio, fecha de publicación y temática general abordada; en el análisis conceptual, se presentan las similitudes y diferencias identificadas en las definiciones de ambos términos, se observó el predominio de investigaciones sobre consumo sustentable pero un interés emergente en estos trabajos por estudiar la responsabilidad ejercida por el consumidor a través de sus actos de consumo. Todo parece indicar, a manera de conclusión, que en los estudios de comportamiento del consumidor en el campo económico se presenta un cambio de paradigma conceptual en favor del consumo sustentable.

**Palabras clave:** consumo sustentable, consumo responsable, comportamiento del consumidor.

**Código JEL:** D11, M30, Q56.

## 1. Introduction

The recurrent use of the term *sustainable consumption* is often linked to the emergence of another key concept, *sustainable development*, which is defined as a process that "meets the needs of the present generation without compromising the ability of future generations to meet their own needs." This definition was outlined in the Brundtland Report, *Our Common Future* (UN, 1987: 67), a document resulting from the multilateral forum convened by the *World Commission on Environment and Development* (WCED).

According to Ocampo, Perdomo-Ortiz, and Castaño (2014), when the term sustainability was first formalized, it did not explicitly refer to sustainable consumption or responsible consumption, even though both terms were used in consumer studies. In the 1960s and 1970s, the concept of responsible consumption was used to refer to practices that were "environmentally friendly," especially in market segmentation studies focused on product placement. It was in the latter decade that growing environmental concerns permeated international forums and agendas, prompting a reevaluation of the industrial production model, as well as the associated production and consumption processes. At the 1992 Rio de Janeiro Summit, the harmful nature of the Western economic development model was once again highlighted, as it was rooted in production and consumption processes that disrupted the natural balances sustaining those production and consumption patterns (UNCED, 1992). The summit urged national governments to promote greater environmental awareness and responsibility among both the public and businesses, to transition toward more sustainable production and consumption patterns (UNCED, 1992). However, the definition of Sustainable Production and Consumption (SPC) was established two years later, at the *Sustainable Consumption Symposium*, adopted by the United Nations thereafter (UN, 1995), in reference to sustainable development:

> The use of services and related products that respond to basic needs and contribute to a higher quality of life, while minimizing the use of natural resources and toxic materials, as well as waste emissions and pollutants during the product or service life cycle, in order to avoid compromising the ability of future generations to meet their own needs (PNUMA, 2010: 12).

While some authors point out important differences between the terms sustainable and sustainable (Gómez and Garduño, 2020; Gómez, 2014; Naredo, 2004), for the purposes of this document, sustainable consumption and responsible consumption are used interchangeably, given that most of the reviewed documents were in English, and according to the Cambridge University translator, there are no differentiated terms for sustainability and sustainability in English. In both cases, the term used is "sustainability." When translating sustainability in the university dictionary, it is presented as a synonym for sustainability and defined as "the quality of something that can last over time without depleting its resources or harming the environment" (Cambridge, 2021a). Similarly, when translating sustainability, it also indicates that its English term is sustainability, its synonym is sustainability, and it is defined as "the quality of something that has the potential to be maintained indefinitely without causing harm to the environment" (Cambridge, 2021b).

The definition of SPC proposed at the Oslo

Symposium is referenced by various authors in the field of economics (Csigéné, Görög, Harazin, and Baranyi, 2015; Escupirán Villanueva, 2014; Pekkanen, 2020; Qu, Li, Jia, and Guo, 2015; Salgado and Beltrán, 2011); others have generated their own definitions, adding their experiences in research, for example, in environmental sciences, sociology, and environmental policy (Barr, Gilg, and Shaw, 2011; Evans, 2011; Gierszewska and Seretny, 2019; Spaargaren, 2003; Spaargaren and Mol, 2008); also in the educational field (Benavides and Sánchez, 2020; González, Meira, and Gutiérrez, 2020; Sauvé and Villemagne, 2015; Tinjacá, 2020). The interdisciplinary nature of the phenomenon and the various analytical perspectives of each disciplinary field seem to have facilitated the emergence of definitions suited to each academic and research practice (Piligrimiene, Žukauskaite, Korzilius, Banyte, and Dovaliene, 2020). Among the reviewed works, there is a predominance of an indistinct use of the terms sustainable consumption and responsible consumption, but there are nuanced differences that are important to clarify in this document, particularly because of their implications in social intervention programs that aim to shape an informed, connected, and environmentally-conscious citizenship in favor of SPC.

In addition to the introduction, the document includes a conceptual section, a methodological one, a results section, and conclusions. The purpose of the theoretical conceptual section is to show the relevance of conceptually defining the terms responsible consumption and sustainable consumption. The methodological section describes the scientometric analysis of scientific production, including selection criteria for the sample and characteristics of the selected units. In the results section, the main definitions of responsible and sustainable consumption are presented, along with their similarities and differences, as well as the evolution of the elements of the sustainable consumption concept in chronological terms. Finally, a conclusions section highlights the most important points of the review of consumer behavior studies in relation to the conceptual handling of the terms responsible consumption and sustainable consumption.

## 2. The first approaches to consumers in the framework of consumption theories and marketing

It is important to clarify that the term "responsible consumption" predates "sustainable consumption" in Consumption Theory. Fisk (1973: 24), an important pioneer of this line of research, defines responsible consumption as "the rational and efficient use of resources in relation to the global human population," emphasizing the global scope of human consumption by linking it to the consumption of non-renewable resources, a practice that eventually affects the resource reserves of a given country. Analysts of responsible consumption have identified four phases or stages in the research line of socially responsible consumption, starting in the 1960s (Ocampo et al., 2014): a) the initial stage; b) the incorporation of environmental and sustainability issues; c) the development of consumer behavior measurement scales; d) consumption as a collective phenomenon and corporate social responsibility.

The first stage occurred precisely in the 1960s, when the concept of socially responsible consumption began to be used within the framework of Consumer Psychology. Studies focused on market segmentation processes for product placement. The second stage, from the 1970s to the 1990s, saw growing environmental concern and sustainability appearing on international forums and agendas. During this period, studies focused on analyzing attitudes, also within the field of Consumer Psychology. The third stage, from the 1990s to the 2000s, was characterized by the development of responsible consumption measurement scales from the perspective of consumer behavior. The fourth stage, from 2000 to 2012, focused on understanding and characterizing the effects of Corporate Social Responsibility and addressing responsible consumption as a collective phenomenon, making the definition and studies of consumption even more complex.

Although Ocampo et al. (2014) provide an extensive and detailed review, it focuses more on "socially responsible consumption" rather than "responsible consumption," meaning it is a particular perspective linked to society/community, with the main goal

of identifying scales for its measurement. There remains a need to explore research on responsible consumption and sustainable consumption since the emergence of these concepts in 1994 and onward, particularly in consumer behavior studies from the perspective of economics.

Another research area is consumer studies from the marketing perspective. These studies focus on analyzing individual consumption behavior and its determinants (Peter and Olson, 2006). Consumer behavior is defined as "the actions exhibited when seeking, buying, using, evaluating, and disposing of products and services that they expect will satisfy their needs" (Schiffman, 2011: 5). In other words, it refers to how consumers (families or households) make decisions to spend their available resources (time, money, effort) on items related to consumption (what to buy, why, when, where, and how often), evaluate the products after purchase, and how they dispose of the products or their packaging. This type of study highlights three interconnected categories or variables through a system of reciprocal connections: affections and cognition; behaviors; and environment. In this way, any of these variables can be either the cause or effect of a change in the others. Affections and cognition include all psychological and cognitive processes such as emotions, feelings, and attitudes. Consumer environment refers to social and physical stimuli that influence consumer actions, while consumer behavior itself encompasses observable (evident) and non-observable behaviors.

It is precisely in marketing where consumer responsible behavior tends to be associated with green, ethical, and sustainability-oriented consumption, depending on the motivations and intentions of the consumer (Martin, Peattie, and Galí, 2013; Ocampo et al., 2014; Pascual, Peñalosa, and López, 2016; Sánchez, 2014). However, according to Martin, Peattie, and Galí (2013), consumer behavior is not always motivated by social or ethical concerns. The authors emphasize that such aspects are often absent in sustainable consumption behavior, which integrates economic, social, and environmental aspects, making the study of sustainable consumer behavior more complicated, as it tends to vary by consumption category, consumer context, consumption stages, and type of product.

The studies described here allow us to argue the relevance of the present research to distinguish the similarities, differences, and/or points of convergence between the concepts of responsible consumption and sustainable consumption by observing the following: a) responsible consumption has been studied since the 1960s; b) sustainable consumption was conceptualized starting in 1994, and since then, this perspective has been incorporated into studies; c) there is a confusing and imprecise handling of consumer responsibility, as seen in Acedo (2019), Acuña-Noraga and Severino-González (2018), and Muñoz (2017), or the imprecise use of terms. For example, Ocampo et al. (2014) analyze instruments used to study socially responsible consumption and even refer to sustainability but overlook the concept of "sustainable consumption."

## 3. Methodology

### Scientometric analysis

Scientometrics refers to "the measurement and quantitative analysis of scientific production to investigate the development, structure, dynamics, trends, and relationships of scientific practice, among other research opportunities" (Cardona-Román and Sánchez-Torres, 2017: 10). The methodological procedure described in this section follows the five phases of scientometric analysis proposed by Michán and Muñoz-Velasco (2013): 1) retrieval, 2) migration, 3) analysis, 4) visualization, and 5) interpretation.

The entire process is guided by the following research questions: What are the main similarities and differences between the concepts of responsible consumption and sustainable consumption? And has there been an evolution in the perspective of analyzing these concepts? In the retrieval phase, the sources and resources were delineated for the search and selection of reference documents based on the prior research questions. The systematic review process was limited to studies on responsible consumption and sustainable consumption from 2000 to 2020. A systematic review is defined as "a form of research that gathers and provides a summary on a specific topic (aimed at answering a research question), conducted according to a pre-established design" (Aguilera Eguía, 2014: 359). The search design included five steps (Table 1)

**Table 1.** Basic design for searching interest products published

| | Search criteria | Details |
|---|---|---|
| 1º. | Specify topic and products of interest | Documents on sustainable consumption or responsible consumption in books, theses, articles, and papers. |
| 2º. | Databases consulted | Scopus, Science Direct, Scielo, JSTOR ebooks, Redalyc, and Google Scholar. |
| 3º. | Search descriptors | Consumo responsable \| consumo sustentable \| consumo sostenible \| *sustainable consumption* \| *responsible consumption* AND consumidor \| *Consumer* AND comportamiento \| *behaviour* AND aliment$ \| comida \| \| *groceries*. |
| 4º. | Document selection criteria | a) studies on consumer behavior;<br>b) students in economic disciplines;<br>c) focused on food;<br>d) consumer perspective. |
| 5º. | Temporal period and geographical coverage | From 2000 to 2020 and all countries. |

Source: Own elaboration.

During the migration phase, the information from the results obtained in each database was extracted. It is important to clarify that Scopus, Science Direct, and Scielo allow exporting results to Excel and RIS files, while the rest do not, so the data from these platforms were manually captured into Excel.

In the analysis phase, the main trends from the quantitative results of the review by database and search criteria (language, country of origin, descriptors, etc.) were highlighted. The visualization phase was developed using special software support to clearly show the groupings of interest for the study. In this case, VOSviewer 2021 was used. The interpretation phase corresponds to the conceptual and/or theoretical analysis of the content of the selected documents. Both the visualization and interpretation phases focused on the meanings and dimensions of the concepts of sustainable consumption and responsible consumption, and were complemented by a second, more detailed review of a sample of selected base documents according to three criteria: a) studies focused on consumer behavior (even from a multidisciplinary perspective that integrates the economic approach); b) the subject of study is the consumer; and c) studies addressing sustainable behavior in food either entirely or partially.

To select the documents for the in-depth review, abstracts from the documents retrieved from the databases were read, which allowed identifying studies truly focused on consumer behavior and including multidisciplinary studies, provided they had an economic focus. A total of 100 documents were downloaded and read in greater detail to select those that would participate in this article. Of these, 96 focused on the consumer as the subject of study, and 45 studied sustainable behavior in food entirely or partially. The latter assigned a category to this type of product. Finally, 43 articles were selected that met all three selection criteria.

## 4. Analysis of results

### 4.1 Sustainable consumption from the perspective of consumer behavior: Scientometric study data

During the analysis process, a total of 1,641 results were obtained. For the purposes of this study, these constitute the study universe (Table 2). All the abstracts from documents retrieved through Scopus, Redalyc, Science Direct, Scielo, and JSTOR ebooks were read. In the case of Google Scholar, since it does not allow filtering by discipline or language, the information was organized by relevance, and the first 300 abstracts were reviewed to identify variables, future research opportunities in the field, and to harmonize the search with the other databases.

**Table 2.** Results obtained by database

| Database | Number of results obtained |
|---|---|
| Google scholar | 883 |
| Redalyc | 341 |
| Scopus | 269 |
| ScienceDirect | 137 |
| Scielo | 9 |
| JSTOR ebooks | 2 |
| **Total** | **1,641** |

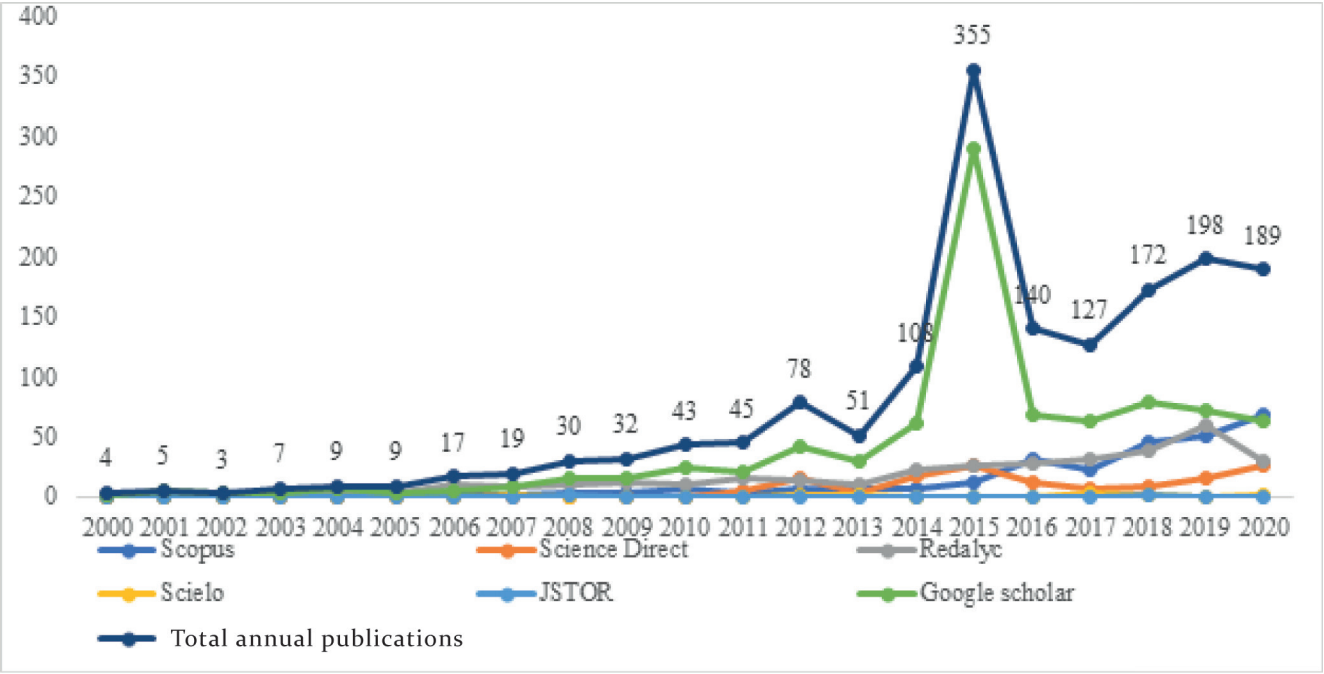
Source: Own elaboration.

The overall results of the search show a growing interest over the years in studying sustainable consumption (Figure 1). The increase in published works on sustainable consumption from the perspective of economic sciences appears to begin in 2014, possibly as a result of international efforts aimed at motivating and promoting sustainable consumption and production (SCP) across all sectors. One such effort was the World Summit on Sustainable Development (WSSD) convened by the UN in 2002, which led to the Johannesburg Plan of Implementation, calling for a shift from conventional to more sustainable consumption and production patterns, and initiated the international Marrakech Process (UNDP, 2007). Furthermore, during the 2015 UN General Assembly, Sustainable Development Goal (SDG) 12: Responsible Consumption and Production was formally proposed (UNDP, 2020). This explains the peak in publications in that year.

By geographic region, 51.5% of the publications come from eleven countries in the Americas (notably Brazil, Colombia, Mexico, and the United States), 37.0% from 24 European countries (mainly the United Kingdom, Germany, Italy, the Netherlands, Sweden, and Spain), 9.2% from 17 Asian countries (including China, South Korea, Taiwan, Malaysia, Indonesia, and Thailand), 1.6% from two countries in Oceania (Australia and New Zealand), and 0.7% from Africa (South Africa). A total of 74% of the works are written in English and 26.6% in Spanish.

As outlined in the methodology, to visualize the review results and guide the corresponding analysis, the software VOSviewer (2021) was used. This program uses data mining to generate bibliometric maps, or clusters of information, that help visualize the most frequently addressed concepts in the selected publications. In this study, only three databases (Scopus, ScienceDirect, and Scielo) allowed exporting searches in RIS format (a standardized tag format for citation software developed by Research Information Systems, Inc.), which is required by VOSviewer to group review results from the three databases into a single document. Once the data from the three databases was consolidated, a keyword co-occurrence analysis was conducted. The fractional counting method was used, with a minimum occurrence threshold of 10 times per keyword. This yielded 3,241 keywords, of which 83 met the minimum threshold. This process enabled the identification of six interrelated clusters: 1) consumption behavior, 2) consumer behavior,

**Figure 1.** Comparison of results obtained in the search




Source: Own elaboration.

3) sustainability, 4) sustainable consumption, 5) sustainable development, and 6) circular economy (Figure 2).

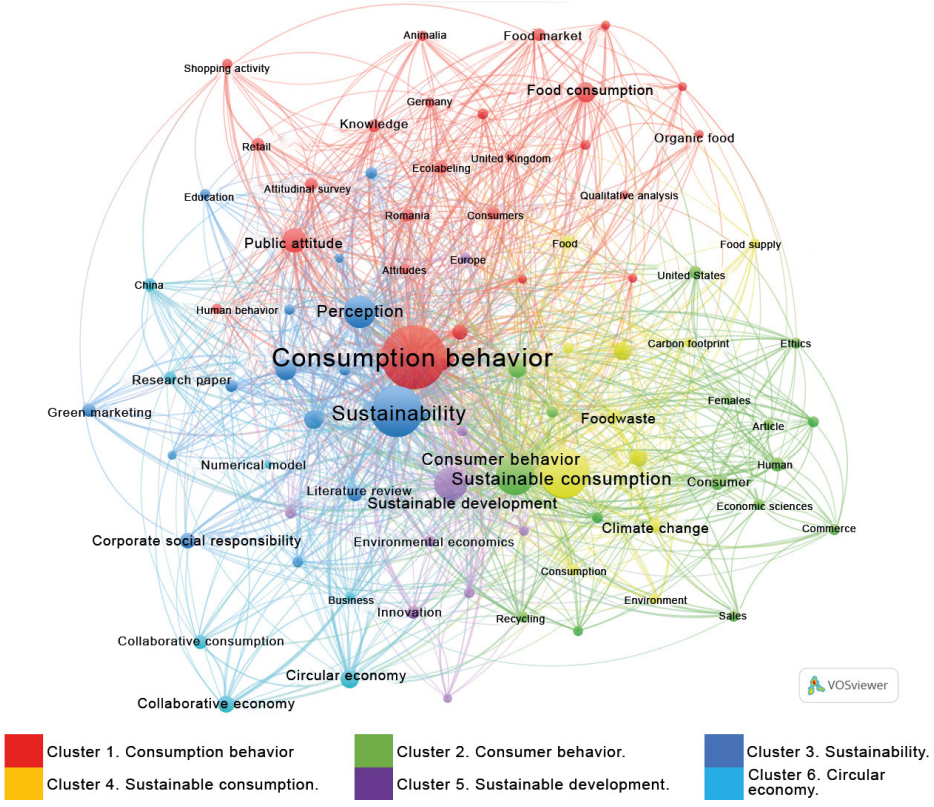
Cluster 1, **consumption behavior**, is composed of 25 items, highlighting the study of food from three perspectives: the psychological perspective of consumer attitudes, followed by food purchasing behavior (purchase description, preferences, and opinions toward food), and finally, human and social behavior, including topics related to social behaviors and lifestyles. Cluster 2, **consumer behavior**, includes 16 items. It addresses consumer decision-making and behavior, incorporating ethics and environmentally protective actions such as waste reduction and recycling, as well as the role of women in such consumption. Cluster 3, **sustainability**, consists of 15 items and refers to sustainability within the business sector. In the administrative field, corporate social responsibility stands out; in marketing, there are empirical studies on consumer perceptions of different marketing strategies and their willingness to pay; and in education, consumer education to promote sustainable consumption. Cluster 4, **sustainable consumption**, includes 11 items. It focuses on the environmental impacts of food consumption and production to mitigate climate change, emphasizing the reduction of the carbon footprint and food waste. Cluster 5, **sustainable development**, contains 9 items and details the conceptual framework of the term, with approaches from both environmental economics and environmental policy standing out. Cluster 6, **circular economy**, is composed of 7 items and covers various topics, such as collaborative consumption and the sharing economy.

It is important to note that the clusters are limited to English-language databases, as these were the only ones that allowed information to be exported in the required format for the software. Although "responsible consumption" was included as a descriptor, it was not significant in the clustering and only "social responsibility" appears in the third cluster. Since the difference between these two concepts is primarily manifested in Spanish-language literature, a deeper review of the concept in both languages was conducted to identify differences in meaning and dimensions.

### 4. 2 In-depth review of the selected literature

The documents that met the selection criteria for

**Figure 2.** Concept map: "Responsible consumption and sustainable consumption"




Source: Own elaboration.

the in-depth review were published between 2009 and 2020, with 67.4% published from 2018 onward, and can thus be considered recent or cutting-edge. Based on the populations studied, the publications refer to research conducted in 27 different countries: 50.0% correspond to European countries, 21.7% to Asian countries, 17.4% to the American continent, 2.2% to Oceania, and 8.7% are general studies that do not analyze subjects from a specific region.

*Concept of sustainable consumption from the perspective of consumer behavior*

The first part provides a systematic overview of the different ways in which various authors have used the concepts of responsible consumption, sustainable consumption, and sustainable use. In general, there is a lack of clarity in distinguishing between the terms. In the second part, after reviewing the publications on sustainable consumption in chronological order, the conceptual development within the paradigm of consumer behavior is analyzed, with an emphasis on the origins of the concept and the elements that have evolved or specialized over time.

*Use of the concepts of responsible consumption and sustainable consumption*

Although the review focused on studies about sustainable consumption, it is noteworthy that some authors define only responsible consumption without mentioning sustainable consumption, even when their analyses address sustainability in the consumption process. This is evident in articles published in Spanish, whereas those published in English consistently refer to the term "sustainable consumption" (Table 3).

In the study by Bianchi, Carmelé, Tubaro, and Bruno (2014), responsible consumption is presented as a three-component attitude (cognitive, affective, and behavioral), and this type of consumption is divided into ethical, ecological, and social or solidarity-based categories. Muñoz (2017), for his part, presents various definitions of responsible consumption to highlight the three most important

**Table 3.** Use of terms sustainable, sustainable consumption, and responsible consumption in the literature.

| Use of terms sustainable, sustainable, and responsible | Authors |
|---|---|
| English-language documents using only the term *"sustainable consumption".* | (Bryła, 2019; Corsini, Laurenti, Meinherz, Appio, y Mora, 2019; Dabija, Bejan, y Grant, 2018; Dong et al., 2020; Geiger, Fischer, y Schrader, 2017; Gierszewska y Seretny, 2019; Goryńska-Goldmann, 2019; Gustavsen y Hegnes, 2020; Kreuzer, Weber, Off, Hackenberg, y Birk, 2019; Lamberz, Litfin, Teckert, y Meeh-Bunse, 2019; Südaş y Özeltürkay, 2015) |
| English-language documents using only "*sustainable consumption*". Referring to consumers' interest in "*sustainable and/or socially responsible production"* and "*environmentally responsible*". | (Hanss, Böhm, Doran, and Homburg, 2016; Piligrimiene *et al.*, 2020) |
| Only uses the term "sustainable consumption". | (Salgado and Beltrán, 2011) |
| Only refers to responsible consumption. | (Bianchi *et al.*, 2014) |
| Differentiates and conceptualizes responsible consumption. | (Martin *et al.*, 2013) |
| Uses the term responsible consumption and analyzes sustainable habits but does not explicitly use the term sustainable consumption. | (Muñoz, 2017) |
| Uses all three terms: responsible consumption, sustainable consumption, and sustainable consumption. Does not clarify differences between sustainable and sustainable, but focuses on "socially responsible sustainable consumption" and "socially responsible behavior of the sustainable consumer" | (Acuña-Noraga and Severino-González, 2018) |
| Uses responsible consumption and sustainable consumption without distinction. Does not use sustainable consumption. Refers to responsible or ecological consumers, not sustainable consumers. | (Acedo, 2019) |

Source: Own elaboration.

aspects in the behavior of responsible consumers (knowledge, choices, and consumption habits). Without mentioning the term sustainable consumption, he analyzes sustainable habits in consumer groups, which he refers to as consumers with sustainable habits. According to Acedo (2019: 207), responsible consumption means "making purchasing decisions taking into account the social and environmental consequences resulting from the extraction of raw materials and the production, distribution, use, and disposal of a specific product or its packaging." Although this definition is similar to that of sustainable consumption because it refers to the dimensions of sustainability (environmental and social consequences), it does not emphasize the long-term durability of the production and consumption process, nor does it make explicit the impact of such consequences on future generations. The study makes a distinction regarding the ecological consumer, defined as "a person highly aware of the environment who seeks to reduce their ecological impact through their consumer behavior" (Acedo, 2019: 9).

It is worth noting that even before the cited works, the definition of responsible consumption by Fisk (1973) already referred to the consumer's conscious role within the consumption chain and to the fact that such actions could be motivated by personal or collective reasons. In the same work, the author identified four characteristic motivations of the responsible consumer and linked them to specific types of consumption: ethical motivations with ethical consumption, environmental motivations with ecological consumption, social motivations with social consumption, and sustainable motivations with sustainable consumption. This brief systematic review of publications on the concept of responsible consumption suggests that this concept encompasses or includes sustainable consumption.

*Chronological review of concept of sustainable consumption*

The term sustainable consumption was outlined at the Oslo Symposium (1994), and the concept was referenced in many subsequent publications (Csigéné, Görög, Harazin & Baranyi, 2015; Escupirán, 2014; Pekkanen, 2020; Qu, Li, Jia & Guo, 2015; Salgado & Beltrán, 2011). However, it was from 2017 onwards that some authors began to analyze the definitions of the term and contribute their own insights and experiences to its conceptual development (Table 4).

After reviewing the works published on sustainable consumption in a chronological and sequential manner, it was possible to observe how certain aspects of the original definition remained the same, while others evolved. Among the unchanged elements from 1994 to the present are the emphasis on avoiding risks related to environmental conservation and the satisfaction of basic needs through the consumption of goods and services. On the other hand, evolving aspects include the behavior of consumers during the different stages of consumption, particularly in relation to the product life cycle. Below is an outline of these changes.

From 1994 to 2017, emphasis was placed on avoiding environmental risks and ensuring that the satisfaction of needs for future generations would not be jeopardized. In studies published between 2017 and 2019, this call to protect the ability to meet future generations' needs is reiterated, along with the urgent need to highlight the co-responsibility of current generations in the consumption process. As is known, the Oslo Symposium's definition encompasses both sustainable production and consumption, so the most evident changes in studies appear when exploring consumer behavior during the different phases of consumption.

A notable shift occurs from references to the product life cycle—particularly prevalent until 2015—toward a paradigm shift that incorporates the stages of consumption as proposed by Geiger et al. (2017), a paradigm that persists through 2020 (Awais et al., 2020; Helm & Subramaniam, 2019; Piligrimiene et al., 2020; Purnomo et al., 2019). Acedo (2019) includes the action of "not buying," although this approach was not taken up by other authors, it can be inferred in references to the satisfaction of "basic needs" from the original definition. Regarding the consumer's role in the process, there is a transition from merely the "use of goods and services" to a more conscious and active role, especially in definitions from 2018 onwards, which emphasize the consumer's responsibility in their decision-making and everyday actions (Acedo, 2019; Acuña-Noraga & Severino-González, 2018; Gierszewska & Seretny, 2019; Piligrimiene et al., 2020).

Thus, sustainable consumption is now understood as the actions carried out by consumers to meet their basic needs, while also considering that future generations will be able to meet theirs. This concept includes the three dimensions of sustainable development (economic, social, and environmental) across all phases of consumption (acquisition, use,

**Table 4.** Chronological overview of publications on Sustainable Consumption and its dimensions.

| Definition of Sustainable Consumption | Needs Satisfaction | Future generations | Risk avoidance →Environmental protection | Product lifecycle → Phases of consumption | Use → acts |
|---|---|---|---|---|---|
| Definition of Sustainable Production and Consumption developed by the Norwegian Ministry of Environment, Oslo Symposium, 1994:"The use of related services and products that respond to basic needs and provide a better quality of life, while minimizing the use of natural resources and toxic materials, as well as emissions of waste and pollutants during the lifecycle of the service or product in order not to jeopardize the ability to meet the needs of future generations" (UNEP, 2010: 12). Definition cited by several authors (Csigéné et al., 2015; Escupirán, 2014; Pekkanen, 2020; Qu et al., 2015; Salgado & Beltrán, 2011). | Meeting basic needs through products and services | Without jeopardizing the needs of future generations | Minimizing use of resources and emissions to avoid risks | Product or service lifecycle | Use of products or services |
| Integrates sustainability in economic, social, and environmental aspects. Sustainable marketing acknowledges that consumer behavior is not always driven by ethical or social concerns (Martin et al., 2013). | | | | | Acts motivated or not by ethics |
| "The consumption behavior of private households aimed at contributing to the sustainable development of society."(Südaş y Özeltürkay, 2015: 177). | Consumption by private households | Society | Sustainable development | | Contribution |
| "The individual acts of satisfying needs in different areas of life through the acquisition, use, and disposal of goods and services, without compromising the ecological and socioeconomic conditions of all people (currently living or in the future) to meet their own needs." (Geiger et al., 2017: 5). Recovered from several authors (Awais, Samin, Gulzar, Hwang y Zubair, 2020; Helm y Subramaniam, 2019; Purnomo, Daulay, Utomo y Riyanto, 2019). | Meeting needs in various life areas through goods and services | Of all people (now and future) | Without compromising ecological and socioeconomic conditions | Acquisition, use, and disposal | Individual acts |
| "The behavior that human beings adopt when facing purchasing decisions, in such a way that the satisfaction of needs—whether for goods or services of present generations—can be sustainable over time from an economic, social, and environmental perspective. This requires raising awareness about the importance of consuming natural and sociocultural resources, and furthermore, promoting changes in the patterns that shape the consumption paradigm; in this way, excessive or unnecessary consumption can be reduced" (Acuña-Noraga & Severino-González, 2018: 304). | Satisfaction of needs for goods and services | Present generations being sustainable over time | Awareness of the importance of consuming natural and sociocultural resources<br>Reducing excessive or unnecessary consumption | Purchasing | Decision-based behavior |
| "It involves consuming those products or services that we truly need and that contribute to the conservation of the environment."(p. 8) "The culture of sustainability not only involves implementing responsible consumption by buying different products or ceasing to purchase certain brands; it also entails adopting a new lifestyle in which environmental protection is present in all daily activities" (Acedo, 2019: 7). | Truly necessary products and services | | Contribution to environmental conservation<br>Environmental protection | Buying different products or avoiding certain brands | Resposible consumption<br>New lifestyles<br>Daily activities |
| "The act of satisfying one's own needs and those of others without compromising current and future generations in their ecological and consumption systems" (Kreuzer et al., 2019). | Satisfying individual and others' needs | Current and future generations | Without compromising ecological and consumption systems | | Non-compromising action |
| "Consumers use goods prudently, showing moderation and responsibility toward future generations" (Gierszewska y Seretny, 2019: 198). | | Responsibility toward future generations | | | Use with prudence, moderation, and responsibility |
| "An environmentally responsible consumption process that involves the purchase, use, and disposal of goods and services" (Piligrimiene et al., 2020: 4). | | | Environmentally responsible consumption | Purchase, use, and disposal | Responsible process |

Source: Own elaboration.

and disposal of goods and services), as well as the active and participatory role of the consumer at each stage of the process through their actions and behaviors.

## 5. Final reflections

Let us recall that the systematic search for bibliographic information was carried out using two descriptors—responsible consumption and sustainable consumption—considering only articles published in Spanish or English between 2000 and 2020. In the first year of the search, the term sustainable consumption had only been proposed six years earlier at the Oslo Symposium. Therefore, in early studies on consumer behavior, the first term used to describe the conscious role of the consumer in the consumption chain—and the rational and efficient use of resources with respect to global society—was responsible consumption. Starting with the first operational definition of Sustainable Production and Consumption (SPC) developed at the Oslo Symposium in 1994, research began incorporating the term sustainable consumption, and the use of the term responsible consumption began to decline.

The results of this review, based on language, showed differences: while English-language publications refer only to sustainable consumption, Spanish-language articles use both terms (including responsible consumption), but without delving into their definitions—only one of the reviewed articles suggests that sustainable consumption may be motivated by the intention to be responsible. Furthermore, the early studies that referred to the responsible consumer did not consider all three dimensions of sustainability (economic, social, and environmental), whereas all studies on sustainable consumption do reference consumer responsibility. In fact, the most recent articles explicitly discuss it and analyze its operational expression in consumer behavior. This may be explained by the fact that it was not until the late 20th century that consumer behavior studies began to incorporate the concept of sustainable or sustainable consumption and intergenerational responsibility as part of it.

The review showed a greater prevalence of sustainable consumption studies compared to responsible consumption ones. The concept mapping confirms this: the word responsibility appears in only one of the six identified clusters. The reviewed works incorporate measurement scales for individual consumer behavior and the factors that influence sustainable consumption (environmental, social, and economic). Some also explore sustainable consumption as a collective phenomenon, and corporate social responsibility as a complementary strategy to sustainable production and consumption. Conceptually, these works maintain elements of the original definition of responsible consumption (satisfying basic needs and avoiding environmental risks) and integrate responsibility into the act of consumption across different phases (acquisition, use, and disposal), along with intergenerational commitment from the consumer's perspective. From an initial focus on the "acts" of the consumer through product "use," studies from 2018 onward show a greater interest in analyzing the consumer's active and co-responsible role with their environment.

The systematic review of articles published so far this century on responsible and sustainable consumption, within the field of consumer behavior, makes it possible to affirm that, at the conceptual level, sustainable consumption studies refer to three key aspects:

a) Intergenerational co-responsibility inherent in consumption;

b) The phases of sustainable consumption (acquisition, use, and disposal of resources);

c) The conditioning factors of this practice (ethical, environmental, social, and sustainable dimensions).

Although the term responsible consumption is used less frequently at the conceptual level, the most recent works assign a central role to the responsibility exercised by the consumer through their acts of consumption. These consumer behavior studies addressing sustainable consumption, and using consumer responsibility in consumption acts as a construct or analytical category, could constitute an important line of research and open up a range of possibilities for designing strategies and programs aimed at promoting the adoption of sustainable consumption.

## Acknowledgments

We thank CONACYT for the support provided to carry out the doctoral research project on which this article is based.

**Appendix 1.** Details of the composition of the concept map clusters "Responsible consumption on which this article is based"

| Cluster | Label | Links | Ocurrences | Cluster | Label | Links | Ocurrences |
|---|---|---|---|---|---|---|---|
| 1 | **Consumption behavior** | 82 | 290 | 3 | **Sustainability** | 81 | 198 |
| | Public attitude | 72 | 51 | | Perception | 76 | 84 |
| | Food consumption | 52 | 39 | | Marketing | 63 | 39 |
| | Psychology | 46 | 24 | | Questionnaire | 55 | 36 |
| | Attitudinal survey | 42 | 19 | | Literature review | 48 | 23 |
| | Consumers | 42 | 13 | | Market conditions | 35 | 10 |
| | United Kingdom | 41 | 16 | | Strategic approach | 35 | 14 |
| | Eco-labeling | 40 | 15 | | Empirical analysis | 34 | 15 |
| | Knowledge | 40 | 19 | | Willingness to pay | 33 | 16 |
| | Lifestyle | 40 | 10 | | Education | 31 | 13 |
| | Human behavior | 39 | 14 | | Corporate social responsibility | 28 | 23 |
| | Organic farming | 39 | 11 | | Survey method | 28 | 10 |
| | Attitudes | 38 | 14 | | Green marketing | 27 | 15 |
| | Romania | 38 | 15 | | Spain | 27 | 11 |
| | Germany | 36 | 13 | | Italy | 26 | 10 |
| | Food market | 35 | 19 | 4 | **Sustainable consumption** | 80 | 170 |
| | Preference behavior | 35 | 13 | | Consumer behavior | 51 | 33 |
| | Qualitative analysis | 35 | 11 | | Environmental impact | 50 | 28 |
| | Retailing | 35 | 14 | | Food waste | 42 | 25 |
| | Social behavior | 29 | 10 | | Food | 39 | 16 |
| | Animalia | 28 | 11 | | Climate change | 38 | 20 |
| | Food quality | 28 | 10 | | Regression analysis | 38 | 12 |
| | Organic foods | 27 | 10 | | Carbon footprint | 35 | 16 |
| | Food product | 23 | 10 | | Consumption | 29 | 13 |
| | Shopping activity | 23 | 13 | | Environment | 28 | 10 |
| 2 | **Consumer behavior** | 74 | 116 | | Food supply | 25 | 10 |
| | Decision making | 59 | 29 | 5 | **Sustainable development** | 80 | 94 |
| | Consumer | 46 | 21 | | Innovation | 39 | 20 |
| | Human | 43 | 18 | | Environmental economics | 37 | 15 |
| | Recycling | 42 | 18 | | Environmental policy | 36 | 12 |
| | Article | 39 | 14 | | Conceptual framework | 32 | 13 |
| | United States | 39 | 13 | | Policy formulation | 32 | 14 |
| | Consumer attitude | 37 | 14 | | Europe | 29 | 12 |
| | Food industry | 37 | 13 | | Technology adoption | 29 | 10 |
| | Environmental protection | 35 | 12 | | European Union | 27 | 11 |
| | Economic sciences | 33 | 11 | 6 | **Circular economy** | 40 | 31 |
| | Female | 33 | 10 | | Business | 37 | 17 |
| | Ethics | 32 | 14 | | China | 32 | 18 |
| | Waste management | 28 | 11 | | Numerical model | 32 | 10 |
| | Sales | 27 | 13 | | Research work | 30 | 13 |
| | Trade | 23 | 11 | | Collaborative economy | 21 | 22 |
| | | | | | Collaborative consumption | 19 | 11 |

Source: Own elaboration.

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Interdisciplinary Faculty of Economic and Administrative Sciences

RESEARCH

# Evaluation of Digital Leadership in University Students

## Evaluación del Liderazgo Digital en Estudiantes Universitarios

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## Abstract

Digital leadership is crucial in today's environment, where technology plays a fundamental role. Studying digital leadership among university students is highly important, as they represent a generation immersed in the digital era and are expected to be future leaders. The objective of this study was to assess the digital leadership of undergraduate students enrolled in a business administration program at a public university located in northwestern Mexico. This was done through a questionnaire measuring digital skills, confidence, freedom of expression, team discussion, and organizational planning. A quantitative, descriptive, and cross-sectional study was conducted with undergraduate business administration students at a public university in Mexico. A questionnaire proposed by Nurabadi et al. (2022), consisting of 18 items grouped into five dimensions, was adapted and used. The results revealed average scores of 3.49 for digital skills, 3.79 for confidence, 3.63 for freedom of opinion, 3.93 for team discussion, and 2.60 for organizational planning. In conclusion, it is necessary to develop digital skills, foster confidence, promote collaboration and freedom of expression in digital leadership among university students, and improve strategic planning in the digital environment. These findings provide valuable insights for educational institutions and those responsible for training digital leaders, with the aim of preparing students for a digitalized and competitive world.

**Keywords:** Organizational planning, digital leadership, university students, digital skills.

**JEL Code:** M15, I23, D83.

## Resumen

El liderazgo digital es crucial en el entorno actual, donde la tecnología desempeña un papel fundamental. Estudiar el liderazgo digital en estudiantes universitarios es de gran importancia, ya que representan una generación inmersa en la era digital y se espera que sean líderes en el futuro. El objetivo del estudio fue evaluar el liderazgo digital de estudiantes universitarios en un programa de licenciatura en administración en una universidad pública ubicada en el noroeste de México, a través de un cuestionario que mide habilidades digitales, confianza, libertad de expresión, discusión en equipo y planeación organizacional. Se realizó un

estudio cuantitativo, descriptivo y transversal en estudiantes de licenciatura en administración de una universidad pública en México. Se adaptó y utilizó un cuestionario propuesto por Nurabadi et al. (2022), que consta de 18 ítems agrupados en 5 dimensiones. Los resultados revelaron habilidades digitales promedio de 3.49, confianza de 3.79, libertad de opinión de 3.63, discusión en equipo de 3.93 y planeación organizacional de 2.60. En conclusión, es necesario desarrollar habilidades digitales, fomentar la confianza, promover la colaboración, libertad de expresión en el liderazgo digital de los estudiantes universitarios, así como mejorar la planeación estratégica en el entorno digital. Estos hallazgos proporcionan información valiosa para instituciones educativas y responsables de formación de líderes digitales, con el objetivo de preparar a los estudiantes para un mundo digitalizado y competitivo.

**Palabras clave:** Planeación organizacional, Liderazgo digital, estudiantes universitarios y habilidades digitales.

**Código JEL:** M15, I23, D83.

## 1. Introduction

Leadership is a crucial factor in the success of any organization. It refers to a person's ability to influence and guide others toward a common goal. An effective leader can motivate team members to work together, achieve objectives, and overcome challenges. In the business world, leadership is essential for directing and guiding employees in the achievement of organizational goals. Effective leaders can inspire their teams to be more innovative, creative, and productive, which in turn can improve the quality of the products and services offered by the company.

A successful leader can also foster a positive and collaborative work culture, which can enhance the work environment and increase employee retention. Additionally, leaders can identify and develop talent within the organization, leading to greater efficiency and competitiveness.

Leadership refers to the typical behaviors exhibited by a leader with the aim of guiding subordinates to achieve organizational goals (López & Beltrán, 2020). As confirmed by Castaño, Hernández, and Torres (2019), an efficient leader is someone who achieves products and services fully compatible with the resources used, and an effective leader is one who chooses the right things to do.

As noted by Castro (2018), one characteristic of a leader is listening to their followers and providing positive feedback. The challenge lies in how to enable people to achieve the organization's mission since the leader does not delegate responsibility, but does delegate authority (Arroyo, 2017).

Leadership is not about gaining followers like on today's social networks; it is about helping people give their best, both in their professional and personal relationships. According to Zuzama (2017), there are various leadership styles. See Table 1.

In this regard, leadership through digital means is closely related to leadership styles, as digital leaders must be able to adapt their leadership styles to a digital environment.

In the digital environment, organizations face a vast amount of data that needs to be analyzed and utilized for strategic decision-making. In this context, digital leadership plays a key role in information management and in promoting a data-driven culture. According to Araujo et al. (2021), digital leaders are capable of navigating data complexity, identifying relevant patterns and trends, and making informed decisions. They also foster organizational agility, allowing for quick and effective adaptation to market changes.

In a digital setting, collaboration and innovation are fundamental elements for organizational success. Digital leadership promotes collaboration across teams and departments by encouraging communication and idea exchange through digital platforms. According to He et al. (2019), digital leaders are able to create a collaborative work environment where diversity of thought is valued and creativity is encouraged. Furthermore, they drive innovation through experimentation and the implementation of new technologies.

### *1.1 Digital leadership*

Digital leadership is defined as the ability to lead and manage effectively in a constantly evolving digital environment, using specific skills and knowledge to leverage digital technologies and available tools to guide teams and organizations online, and to make informed decisions based on data analysis (Kahai et al., 2017).

**Table 1.** Leadership Styles

| | Authoritarian | Democratic | Laissez-faire |
|---|---|---|---|
| Decision-making | 1. Leadership is based on authoritarianism. The leader makes the decisions, and the members execute them. | 1. Leadership is based on identification with the group and the leader's expertise. All planning is subject to group discussion, which the leader encourages and supports. | 1. The leader exerts virtually no leadership. Full freedom is given for individual decision-making, and the leader only intervenes in extreme cases. |
| Future Outlook | 2. The group's future is uncertain, as only the leader decides, and it is never clear what they will do next. | 2. From group discussion emerges a certain perspective for the future. In case of doubt, the leader usually proposes possible alternatives to help clarify things. | 2. The leader is "available," would provide information, materials, or opinions "if necessary," but does not intervene on their own initiative. The future remains uncertain. |
| Participation in Execution | 3. Rarely participates in immediate tasks unless it is to teach how something is done. The leader's role is to command and organize. | 3. Acts as "a member of the group" in the work. Organizing tasks takes up time and energy. | 3. Often behaves like "just another worker" on the team. |
| Intervention | 4. Usually decides which tasks each member will do and assigns their teammates. | 4. Members are generally free to choose tasks and collaborators. | 4. Does not assign specific tasks to anyone. Maintains a passive attitude" everyone should figure it out themselves." |
| Feedback/Evaluation | 5. Tends to be very personal, sometimes arbitrary, in praise or criticism of members' work. Gives significantly more feedback than the other leadership styles, reinforcing their authority. | 5. The leader is very objective in giving praise or criticism. | 5. Rarely comments on members' performance unless asked directly. "If they want to know my opinion, they'll ask." Makes no effort to evaluate or guide. |

**Source:** Own elaboration, based on Zuzama (2017).

Digital leadership has become a critical success factor for organizations in the era of technological transformation. Digital leaders play a fundamental role in facilitating change, adopting digital technologies, promoting a data-driven culture, encouraging collaboration and innovation, and making informed decisions in a highly complex environment. As Davenport and Westerman (2018) highlight, digital leadership is not only important for organizations, but it also has a significant impact on employee motivation and engagement. By being digital leaders, individuals may feel more empowered and valued as part of an organization at the forefront of technological transformation.

Digital leadership requires specific skills and competencies, such as adaptability, emotional intelligence, strategic thinking, and digital literacy. It is essential for leaders to be willing to learn and continuously update themselves, as the digital environment evolves rapidly.

The importance of digital leadership is multifaceted. First, most organizations are moving toward greater digitalization, and digital leadership is essential to navigate this ever-changing environment (Marthans et al., 2021). Second, digital technologies and available tools are an integral part of digital leadership and can be used to enhance efficiency, collaboration, and innovation within organizations.

Third, digital leaders possess specific skills and competencies, such as the ability to use digital technologies and make data- and analysis-based decisions, which are increasingly vital in today's business environment (Kahai et al., 2017). Finally, digital leadership can improve organizational performance by fostering a culture of innovation, collaboration, and continuous learning. A digital leader possesses several important characteristics (Khan, 2016):

1. Ability to adapt to change: A digital leader must be able to adapt to a constantly evolving environment and anticipate the potential consequences of technological changes.

2. Knowledge of digital technology: A digital leader should have a strong understanding of digital technology and available tools in order to apply them effectively in leading and managing online teams and organizations.

3. Remote leadership skills: A digital leader must be able to lead and manage teams remotely, leveraging available technologies and tools to achieve necessary collaboration and efficiency.

4. Strategic vision: A digital leader must be capable of developing a clear and strategic vision for the organization in the digital environment, anticipating possible opportunities and challenges, and making informed decisions based on data and analysis.

5. Digital competencies: The digital leader must possess specific skills in the use of digital technologies, such as cybersecurity, data analysis, and digital marketing, to lead and manage effectively in the digital setting.

6. Culture of innovation and collaboration: A digital leader must promote a culture of innovation, collaboration, and continuous learning within the organization, using the available technologies and tools to enhance efficiency and productivity.

Digital leadership acts as a facilitator of change and innovation within organizations. As noted by Davenport and Westerman (2018), leaders are equipped to understand and seize the opportunities provided by emerging technologies, and they have the capacity to inspire and motivate their teams to adapt and embrace change. In this sense, digital leadership becomes a key element in driving transformation and ensuring competitiveness in the market. It also plays a crucial role in an organization's ability to fully leverage the opportunities offered by digital transformation facilitating change, making data-driven decisions, promoting collaboration and innovation, and motivating employees. Digital leaders can guide their organizations toward success in an increasingly digitalized environment.

*1.2 Leadership and management*

Any organization that wants to be at the forefront largely depends on the digitalization of its processes. Many of these are carried out online, providing advantages in terms of sustainability, time reduction, cost savings, and actions that contribute to achieving strategic goals. Additionally, one must consider the constant economic, political, and social changes associated with globalization (Castrejón & Peña-Estrada, 2019). The most impactful structural effect is the deep slowness of governance bodies and procedures within organizations.

The implementation of new strategies in supervision, task management, and decision-making within traditional organizations has led to what has been called "governance" since the 1990s (Chacón, Rodríguez & Alonso, 2019). Some "bosses" in organizations believe that strategies used two decades ago will work permanently, but today's technology has rendered them ineffective (Agudelo & García, 2018).

A fundamental part of all economic activity is operations within companies. One key element for maintaining market presence is properly developing leadership at the managerial level, as the leader is a servant whose sole mission in life is to help, guide, and support others on their path to organizational success (Naranjo, 2015). In a study on total quality factors in management, it was found that leadership is vitally important when analyzing relational models with structural equations, particularly in the quality and senior management departments (Linares et al., 2011).

Organizational efficiency can increase productivity and thus improve competitiveness. To achieve this, leadership is needed that provides true direction and creates an environment in which organizational design and all cultural factors are consistent with one another (Sethibe, 2018).

*1.3 Digital leadership in Higher Education*

Digital leadership has emerged as a crucial component in the era of digital transformation and globalization. With the rapid technological evolution and the incorporation of digital tools in various aspects of everyday life and the business world, digital leadership has become essential for the success and sustainability of organizations in the 21st century.

In the context of higher education, the development of digital leaders is of utmost importance to prepare university students and future professionals to face the challenges of an increasingly digital and competitive world. In particular, the field of management requires leaders who understand and effectively use digital technologies to lead teams and make strategic decisions.

However, the evaluation of digital leadership in the educational field has been the subject of increasing interest in academic literature. Previous research has shown that digital leadership is the use of an organization's digital assets to achieve business goals at both the organizational and individual levels (Dimitrios et al., 2013; Thomson et al., 2016).

In the specific context of Mexico, a developing country with a growing adoption of digital technologies it is essential to explore and evaluate the level of digital leadership among university students. Especially in the northwestern region of Mexico, where the economy has been undergoing significant changes due to the influence of digital technologies across various industries, digital leadership becomes a vital skill for workforce development and economic growth (INEGI, 2021; OECD, 2020).

Therefore, the present study aims to assess the digital leadership of undergraduate management students at a public university located in northwestern Mexico. By identifying the strengths and weaknesses in students' digital leadership, this study seeks to provide valuable information for designing and implementing digital leadership training strategies in the educational context, with the aim of preparing future leaders to face the challenges of a digital society.

Likewise, this study will contribute to the academic literature on digital leadership in educational contexts, since much of the research has focused on the business field and has paid less attention to the development of digital leaders in the university context. By better understanding the level of digital leadership among management students in northwestern Mexico, this study can fill a gap in knowledge and offer new perspectives for future research and curriculum development.

*Objective*

To assess the digital leadership of undergraduate management students at a public university located in northwestern Mexico, using a questionnaire that measures digital skills, confidence, freedom of expression, team discussion, and organizational planning.

## 2. MATERIALS AND METHOD

Through a quantitative, descriptive, and cross-sectional study, digital leadership was evaluated in undergraduate management students at a public university located in northwestern Mexico. The research design was non-experimental, as studies were conducted without manipulating the variables, at a single specific point in time referred to as cross-sectional where the phenomenon is observed in its natural environment for later analysis (Bravo, 2020).

*2.1 Instrument*

The questionnaire developed by Nurabadi et al. (2022) to evaluate digital leadership among students was used as a base, adapted into Spanish, and expanded with a dimension on digital skills to create 18 items grouped into five dimensions. The first dimension includes two items on organizational planning; the second-dimension groups two items on team discussion; the third dimension includes three items on freedom of opinion; the fourth contains four items related to confidence; and the fifth dimension includes seven items related to digital skills. Students in their eighth semester or beyond were asked to evaluate each item on the questionnaire online using a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree.

*2.2 Population and Sample*

The target population of the present study consisted of undergraduate management students in at least their eighth semester of study at a public university in northwestern Mexico. The goal was to assess digital leadership in students close to graduation specifically, 468 individuals enrolled in the January–August 2023 semester.

The type of sampling used was probabilistic, employing a sample size calculation method for finite populations. It is important to note that sample size is closely related to the representativeness desired in the study population. In this sense, there is no ideal sample size it simply needs to be large enough to be representative (Badii, Castillo & Guillen, 2017).

However, it is known that the more homogeneous the elements of a population are, the easier it is to obtain representative samples with a smaller number of elements. For this particular study, the populations were considered homogeneous. Based on this, the sample size for each university was calculated accordingly.

$$\text{Sample size} = \frac{\frac{z^2 p(1-p)}{e^2}}{1+ \left(\frac{z^2\, p\, (1-p)}{e^2 N}\right)}$$

Where: $N$ = population size; $e$ = margin of error; $z$ = $z$-score for a 95% confidence level; and $p$ = probability of occurrence. The parameters are defined as follows: $z$ = 1.96, p = 0.50, $e$ = 0.05, and $N$ = 468. Based on these parameters, the sample size of undergraduate management students is $n$ = 212.

To measure the reliability of the digital leadership assessment instrument, Cronbach's alpha statistic was used and calculated using SPSS version 24, resulting in a value of .948, which is considered acceptable. This indicates that the items in the questionnaire are highly correlated with each other, suggesting high internal consistency within the set of items.

## 3. Results

The most relevant research findings are presented below. First, the sample is described; then, a percentage frequency distribution by item and dimension is provided; and finally, the results are analyzed. The evaluated sample of 212 students was composed of 97 students (46%) in the eighth semester and 115 students (54%) in the ninth semester or beyond. The latter category includes irregular students who have taken more than nine semesters due to various reasons. Table 2 presents the percentage distributions by item and dimension.

*3.1 Dimension analysis*

For the analysis of the dimensions, using a five-point Likert scale, responses considered to show some level of agreement were options 4-Agree and 5-Strongly agree.

Organizational Planning: This dimension shows responses leaning towards disagreement for both items, indicating that undergraduate business students rarely use digital media to form online student groups, with only 21% of responses indicating some degree of agreement, and a low 23% agreement for organizing work meetings.

Team Discussion: The items in this dimension were positively evaluated by students. 81% agreed that online meetings result in problem-solving, and 69% agreed that attendance and participation in online meetings are adequately managed.

Freedom of Opinion: This dimension was also positively rated by students. 47% agreed that online meetings allow members to express their opinions and assess actions taken. Another 47% agreed that online meetings are a means to consider suggestions, and at least 41% agreed that they provide an opportunity for sincere expression.

Trust: This was the highest-rated dimension according to business students. 46% strongly agreed that success is achieved through joint efforts within a team, and 43% strongly agreed that digital media are valuable learning tools for improving performance in companies.

Digital Skills: This dimension assessed various tools that someone with a degree of digital leadership should be able to use. It was the most varied in terms of response distribution. The tools students felt most confident using were social media (58% strongly agreed), online communication tools like Zoom and Teams (57% strongly agreed), and artificial intelligence tools like Watson, Google Cloud, and others (27% strongly agreed).

A second tier included marketing automation tools, online security tools, and reputation monitoring tools, each with around 29%, 29%, and 25% agreement respectively.

The third and lowest tier included tools like project management platforms, which had 26% disagreement, and reputation monitoring tools, with 25% disagreement.

## 4. Discussion

Regarding the organizational planning dimension, low scores were observed. Interestingly, despite most respondents having experienced online education during the COVID-19 pandemic, they still prefer in-person meetings for formal work and team-building. This highlights the importance of social interaction for students, helping them develop

**Table 2.** Percentage distributions for the evaluation of digital leadership

| Digital Leadership Assesment | | Strongly disagree | Disagree | Neither agree/ Nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| DIMENSION | ITEM | 1 | 2 | 3 | 4 | 5 |
| Organizational planning | As a student, I actively participate in the formation of online student organizations or groups | 23% | 24% | 33% | 17% | 4% |
| | I participate in developing work plans for student organizations through online meetings with my teams | 21% | 24% | 32% | 16% | 7% |
| Team discussion | When we face problems, we collaboratively create solutions during online meetings | 8% | 3% | 9% | 24% | 57% |
| | Members of the organization attend online meetings | 11% | 7% | 13% | 42% | 27% |
| Freedom of opinion | I believe that online meetings are a means to listen to members' opinions and evaluate the correctness of actions taken | 10% | 8% | 13% | 47% | 22% |
| | Online meetings serve to consider members' suggestions for the organization | 9% | 7% | 16% | 46% | 22% |
| | Online meetings offer a chance for team members to express themselves sincerely | 10% | 7% | 19% | 41% | 24% |
| Trust | A digital leader gives all members the freedom to express their stance during meetings or discussions | 9% | 6% | 18% | 44% | 23% |
| | Leaders in the digital age are confident in the changes continuously occurring within the organization | 9% | 7% | 22% | 43% | 19% |
| | I believe that success is achieved as a result of the collective efforts of team members | 8% | 5% | 12% | 29% | 46% |
| | Digital tools are a learning resource to achieve good performance | 9% | 4% | 13% | 31% | 43% |

| Digital Leadership Assesment | | Strongly disagree | Disagree | Neither agree/ Nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| Digital skills | I can use social media management tools such as Facebook, Instagram, Twitter, and others | 8% | 2% | 9% | 21% | 58% |
| | I can use online project management tools like Asana, Trello, Jira, or others | 12% | 26% | 26% | 26% | 9% |
| | I can use online communication tools like Teams and Zoom | 9% | 4% | 7% | 23% | 57% |
| | I can use marketing automation tools like Hubspot, Marketo, or others | 13% | 23% | 25% | 29% | 10% |
| | I can use online reputation monitoring tools like Brandwatch, Mention, or others | 16% | 25% | 27% | 25% | 8% |
| | I can use online security tools like Norton, McAfee, or others | 10% | 17% | 25% | 29% | 19% |
| | I can use artificial intelligence tools such as IBM Watson, Google Cloud AI, Amazon Web Services AI | 11% | 12% | 16% | 33% | 27% |

**Source:** Own elaboration (2023)

communication, empathy, and collaboration skills.

The team discussion dimension was positively rated. Online meetings can promote participation among shy or introverted individuals who may not feel comfortable speaking in public. Features like chat or raise-hand functions make these platforms more accessible, allowing all members to contribute more comfortably.

The freedom of opinion dimension was also well-rated, reflecting students' belief that online meetings provide a safer and more accessible space for expressing opinions. Virtual environments may reduce intimidation and encourage more honest expression. Real-time discussion enables dynamic idea exchange, leading to deeper conversations and better understanding of different viewpoints.

In terms of trust, the high ratings suggest that digital leaders should inspire confidence in their ability to lead responsibly and utilize technology effectively. According to Graham et al. (2015), trust is crucial for building lasting and effective relationships with employees, clients, and stakeholders. It fosters active participation, enhances productivity, and improves employee satisfaction.

Finally, the digital skills dimension reveals both strengths and areas for improvement. Students show strong proficiency in communication tools like Zoom and Teams and in social media, likely due to their experience during the pandemic and their digital-native background. Their familiarity with AI tools can be attributed to curriculum design, specifically courses on intelligent business strategies.

However, weaknesses were noted in the use of tools for marketing automation, online reputation monitoring, and project management. These findings indicate a need to integrate such tools into the curriculum to further strengthen students' digital competencies.

## 5. Conclusions

Today's world has seen technology transform how companies and organizations operate and interact with customers. In this context, digital leadership has become increasingly important as leaders must guide their teams in effectively adopting and using digital technologies. Digital leadership has gained great relevance among young people due

to the rapid pace of technological change and the deepening digitalization of society and business. Understanding the underlying reasons for this is essential.

Firstly, adapting to the current environment is essential. In a fast-evolving technological landscape, future leaders must be skilled in understanding and adapting to changes a key ability for effective leadership.

Innovation is another crucial factor. The technological boom drives innovation across all sectors. Digitally skilled young leaders can identify opportunities to innovate in products, services, and processes, giving their organizations a strong competitive edge.

In communication, effective use of modern tools is vital. From social media to collaborative platforms, today's communication landscape is dynamic and multifaceted. Young leaders must master these tools to communicate effectively with teams, peers, and clients.

Global collaboration is another key advantage. Technology enables cross-border interaction, allowing emerging leaders to form diverse international teams and manage global projects with greater efficiency.

Empowering teams is also critical. Digital leadership involves enabling team members to leverage digital tools to improve productivity and operational efficiency.

Decision-making in the digital era involves data analysis and application. Digitally literate young leaders are better positioned to gather, analyze, and use data in strategic and operational decisions, leading to more informed outcomes.

Continuous learning is a necessary response to technological evolution. Young leaders committed to lifelong learning are more likely to stay updated and master emerging skills.

Finally, creativity is enhanced by digital competencies, equipping young leaders with new tools for problem-solving and innovative thinking.

Digital leadership also contributes to the principles of inclusion and diversity. Digital platforms provide a suitable foundation for promoting inclusion and diversity, and young leaders can serve as catalysts for pluralistic and equitable environments within their respective spheres of influence.

In summary, digital leadership encourages young leaders to embrace the challenges inherent to technological modernity and to seize the opportunities it offers. This approach empowers the younger generation to successfully navigate the ever-changing digital landscape, fostering effective leadership, innovation, and strong guidance toward a technology-driven future.

In the educational sphere, schools and particularly universities have become a launching pad for the development of digital leadership. In this regard, educational leaders must be capable of effectively integrating technology in both the classroom and school administration in order to enhance student learning and institutional performance. School leaders must also be prepared to address challenges posed by technology, such as data privacy and security.

Moreover, digital leadership in schools can better prepare students for the workforce, where the ability to use digital technologies is increasingly important. Educational leaders can support students in developing digital skills and in understanding how technology can be used effectively to solve problems and improve people's lives.

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UNIVERSIDAD DE SONORA

Interdisciplinary Faculty of Economic and Administrative Sciences

RESEARCH

# Income inequality for employees with higher education during the pandemic in Mexico

## Desigualdad de ingresos para los trabajadores con educación superior durante la pandemia en México

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## Abstract

The COVID-19 pandemic affected employability in different measures, especially workers with a basic educational level and women, contrary to this, employment increased for workers with a higher level, the increase being greater for women. In this study we will analyze how the pandemic affected workers with higher education, identifying inequality by sex, age group and professional training, in addition to measuring the impact on the income of the Economically Active Population (EAP). The data for the analysis comes from the National Occupation and Employment Survey (ENOE), for the years 2019 to 2021. The methodology used is the technique of random imputation of missing data (MAR), the Gini inequality index (IG), and the Mincer income equation. The main results show that the inequality between men and women decreased from 3% to 1.2% in the period of the beginning of the confinement, in addition it is distinguished that it favors women with higher level studies. Regarding age, the gap grew as the age of the interviewee increased; On the other hand, for workers with higher education, inequality decreased for those with a master's degree. Finally, in terms of admission, during the course of the pandemic as in the areas of Humanities, Social Sciences and Behavioral Studies, Information Sciences, Business and Administration, Mathematics and Statistics, and Veterinary Medicine, admission was better for women.

**Key words:** higher education; pandemic; data imputation; Gini index; income equation.

**JEL Code:** I21, J31, I12

## Resumen

La pandemia del COVID-19 afectó la empleabilidad en diferentes medidas, especialmente a los trabajadores con nivel educativo básico y a las mujeres, contrario a esto, el empleo aumentó para los trabajadores con nivel superior, siendo mayor el aumento para las mujeres. En este estudio analizaremos cómo afectó la pandemia a los trabajadores con educación superior, identificando la desigualdad por sexo, grupo de edad y formación profesional, además de medir el impacto en los ingresos de la Población Económicamente Activa (PEA). Los datos para el análisis provienen de la Encuesta Nacional de Ocupación y Empleo (ENOE), de los años 2019 a 2021. Las metodologías

utilizadas son la técnica de imputación aleatoria de datos faltantes (MAR), el índice de desigualdad de Gini (IG), y la Ecuación de ingresos de Mincer. Los principales resultados muestran que la desigualdad entre hombres y mujeres disminuyó del 3% al 1,2% para el inicio del confinamiento, además, se distingue que favorece a las mujeres con estudios de nivel superior. Con respecto a la edad, la brecha fue creciendo a medida que aumentaba la edad del entrevistado; en cambio, para los trabajadores con educación superior, la desigualdad disminuyó para los que tenían maestría. Finalmente, en cuanto al ingreso, durante el transcurso de la pandemia como en las áreas de Humanidades, Ciencias Sociales y Estudios del Comportamiento, Ciencias de la Información, Negocios y Administración, Matemáticas y Estadística, y Medicina Veterinaria, el ingreso fue mejor para mujeres.

**Palabras clave:** Educación superior; pandemia; imputación de datos; índice de Gini; Ecuación del ingreso.

**Código JEL:** I21, J31, I12

## 1. Introduction

The COVID-19 pandemic had a significant impact on Mexico's economy and in particular on the labor market. As the country implemented containment measures, such as social distancing and the closure of certain industries, economic challenges emerged that unequally affected workers with higher education. This research problem focuses on analyzing income inequality among workers with higher education during the pandemic in Mexico.

The importance given to the study of inequality in employment and in the income received for work will help to promote a just society that provides opportunities for the development of employees.

It is a fact that gender inequality and other types of discrimination such as those of race, gender, social class, etc. have persisted for a long time as causes of a social structure whose institutions are based on cultural or social stereotypes, thereby creating inequality of opportunities.

The COVID-19 pandemic provoked social and economic changes, including changes in employment and the income of employees, and had repercussions in the third quarter of 2020 when the Economically Active Population fell to 51 million, amounting to a loss of 7.8 million jobs.

It should be noted that, according to a publication by the government's labor observatory OLA (2023), there are economic activities in the Mexican labor market where more than half of the jobs are held by women, as in education, health, tourism, personal services and commerce, with 64.1%, 57.4%, 53.6% and 50.7 % respectively. These activities belong to the tertiary sector of the economy, which was one of the hardest hit during the pandemic, with activity in the third quarter of 2020 reduced by 6.5% from the same period in 2019, a situation that might in some way have affected the employment of women.

Further, in a previous study, Contreras et al. (2022) identified those whose employability was most affected after the pandemic as young people, and men. These findings were obtained after studying employees according to their educational level, and in this context, the most badly affected were women who had only basic studies, whereas for those with higher levels of education, employment increased by 4%.

This leads us to the objective of the present study which is to estimate how the pandemic affected employees with higher education, identifying possible inequality according to sex, age group and professional training, as well as measuring the impact on income, differentiated by sex and professional training. And as specific objectives: estimate inequality around the sociodemographic characteristics and level of education of the EAP in the period of analysis; identify if there were changes in inequality given the sociodemographic characteristics and level of education of the EAP, in the immediate period, first quarter of 2020, quarter after the pandemic, third and fourth quarters of 2020 and first quarter of 2021; detect income inequality by areas of professional training and measure the impact of income inequality during the pandemic on workers according to the area of professional training.

Data for the analysis are taken from the national occupation and employment survey, Encuesta Nacional de Ocupación y Empleo (ENOE), for the years from 2019 to 2021. Although the data of greatest interest in the study comes from 2020 when the pandemic began, this survey was used because the ENOE is the main source of information on the labor market in Mexico since it offers data

on the workforce, occupation, labor informality, underemployment and unemployment. The ENOE is the country's largest ongoing statistical project, providing national figures for each of the 32 states and 39 cities. Data from 2019 was used as a comparative reference.

Prior to analysis, using the technique of MAR (missing at random), we sought to correct the deficiency of data in the data base caused by the omission of information on the variable income, which those questioned tend not to provide, and then, to estimate the inequality, we used the GINI index (GI), and finally, to measure the impact on income we used two Mincer equations, one for men and one for women, having chosen the EAP for employees with higher education qualifications.

The results are intended to identify the groups that tend to be the most vulnerable, with the aim of finding the causes of economic inequality in the face of contingencies, which in this case concerned health, and may provide information for making public policy proposals that would be more effective in reducing inequality.

The present work continues with a second section, containing a review of the literature; in the third part the objectives and hypothesis of the study are presented; in the fourth an account is given of the methodology used; in the fifth, the main results are presented; and finally, the paper ends with a discussion and the conclusions.

## 2. Review of the Literature

To investigate the central issue of this study, which is the income inequality of workers with higher education during the pandemic, we consider human capital theory, which suggests that investment in education and training can increase productivity and, therefore, workers' income. Furthermore, this theory proposes sociodemographic characteristics, such as educational level, work experience, and skills, as key components of human capital.

In this sense, Becker 2009 proposes that the economic agent has rational behavior, invests for himself and that the investment is made based on a maximizing calculation subject to a budget constraint in a perfectly competitive market. His approach is based on the idea that people who invest in their education and training do so like companies invest in machinery or equipment.

In this order of ideas, it is recognized that the COVID-19 pandemic provoked big social and economic changes, which the labor market was not able to escape. A number of studies on the subject have pointed out that so far there is no evidence for permanent changes to conditions of employment. In their study, Campos-Vázquez et al. (2020) analyzed texts on the skills and personal characteristics required for jobs and the wages offered, and found that there was a reduction in the number of jobs offered but not in the demand for employment; the structure of the demand for labor changed temporarily: with a greater demand in April for low wage labor, for occupations requiring a low level of education and for unskilled workers, but from May to July demand rose again to the same levels as before the pandemic. During this period there was no increase in working from home, and the abilities and personal characteristics required did not change during the pandemic.

With regard to per capita income, CONEVAL (2020a), reported a reduction of 12.33% in real labor income in Mexico between the third and the first quarters of 2020, and of 4.8% between the first quarters of the years 2020 and 2021. For his part, Monroy (2021), points out that the greatest reduction in income was for the lowest income population and that this caused an increase in income inequality.

Following the same line of thought, Cruz, Fajardo, Hernández and Fuertes (2021), studied the tendency of inequality in employment income in countries of Latin America and the Caribbean, through a prospective analysis of how the COVID-19 pandemic would affect the incomes of employees, and its repercussions on poverty and inequality. One of the conclusions they came to is that the incidence of poverty might increase by 25% to 33%, while income distribution would worsen, with the Gini coefficient rising from 0.473 to 0.498 for average incomes. The most affected were those people who were already in situations of vulnerability before the pandemic, especially informal, independent or unpaid workers and those working in small businesses or in sectors that found themselves restricted by lockdown measures, for example in commerce, services and construction.

The impact of social isolation was analyzed by Beccaria and Maurizio (2020), who observed

that the economic activities considered essential and therefore not included in the restrictions, amounted to only a third of private employment and roughly a quarter of the total. In certain productive sectors the impact was greater: with around 75% of industrial employment and approximately half of the employment in commerce being subjected to the restrictions.

In this context, those least affected were workers in activities deemed essential, and salaried employees of big companies, working in activities that were not exempted from the restrictions. However, some of these workers, such as the self-employed in specific activities and/or particular zones, suffered a reduction in their income, as sales were reduced with the restrictions on consumers' movements and behavior in a situation of great uncertainty.

In relation to which, in the context of Latin America, Lobato (2020), analyzed gender inequalities in the light of the pandemic in Argentina and determined what the socio-economic effects that impacted the world of work were, in terms of two variables: first, in relation to the classification of the work as being essential, and secondly, in respect of the nature of the work and the possibilities it had for adaptation to digital forms of provision.

With regard to the first variable, it was observed that many of the activities considered essential, both in Argentina and in other countries of the region and the world, are feminized jobs. One of these sectors is work in private homes (of which 97% is done by women), and another is care for other people (with about 30% of the tasks being undertaken by women). These jobs placed them in a situation where they were more likely to be exposed to the illness. The health sector, considered essential, was one of the pillars of fighting against the pandemic. Both in Argentina and elsewhere, 70% of this work is performed by women. These female workers faced long days at work and were exposed to the illness to a greater extent, which had an effect on their income.

As for the second variable, because women are concentrated in the service sector in general, they adapted to a greater extent than men did to working from home and the digitalizing of their labor, and as a result in this sector incomes were reduced by less.

In the context of Mexico, Salas, Quintana, Mendoza and Valdivia (2020), conducted a prospective study based on an analysis of income and employment between 2012 and 2019 compared to the first quarter of 2020. They established in their study that the effects on income and employment in Mexico were not homogeneous, the most affected zones being the states of the center of the country and on the northern border, due to the presence of manufacturing industry and shutdowns of the economy between Mexico and the United States, and also the states that depend on tourism such as Baja California Sur, Guerrero and Quintana Roo.

The sectors earning salaries most affected during the pandemic were: professionals and technical staff; auxiliary staff in administrative activities; shop assistants or sales representatives; those working in personal services; those providing domestic services; workers in agriculture, livestock, forestry, hunting and fishing; artesans; domestic laborers (contracted); industrial machine operators, those working on an assembly line, chauffeurs and transport vehicle drivers. The self-employed sectors most affected were: salesmen and women, personal service providers, domestic service providers; workers in agriculture, livestock, forestry, hunting and fishing; artesans and street sellers.

In the social order, according to figures from the International Labor Organization (OIT, 2021), the situation of male and female workers was reflected in the problems faced by companies that came with the interruption or a tight restriction of their activities. The situation was said to be variable in terms of sectors, but it was evident that the most affected were small and medium sized enterprises, because of their limited reserves, and they were also the least resilient. The results of the study showed that 70% of SMEs had serious financial difficulties, amounting to 50% more than the biggest companies (OIT, 2021).

The success of higher education as a mechanism for reducing inequality is mediated by various systemic processes. Even though in Latin America the university has had a developmentalist approach that has made it a transforming agent of social realities, this function needs to be considered a key driver of processes of development, especially in the field of public policies. There are still barriers in Mexico against the expression of this virtuous relation between the university and society, for which there are many reasons.

In relation to this, the authors mention that the International Labor Conference, ILC (CTI in Spanish), plays an important part in creating

conditions in which the abilities generated in the universities can be expressed in society.

## 3. Objectives and Hypthesis

Following what has been reported by different authors in previous studies, the objective is to estimate how the pandemic affected inequality in employability, in the period from the first quarter of 2020 to the first quarter of 2021.

The specific objectives are:

To identify the socio-demographic aspects of the inequality, such as sex and age group and level of education.

To detect inequality in employment according to areas of professional training.

To measure the impact of inequality on the incomes of employees according to areas of professional training.

Within the framework of this research, several hypotheses were proposed that served as the basis for the study. These hypotheses represent fundamental assumptions about the relationships between variables and phenomena, and have been formulated considering the available information and the logic underlying our research problem.

$H_0$ Socio-demographic characteristics impinge on employment.

$H_0$: Level of education and training impinge on employment.

$H_0$: There is a difference between the incomes of male and female workers with further education.

The proposed hypotheses consider the theory of human capital, especially in the aspects indicated by Becker (2009) regarding:

- Returns on investment in human capital, which indicate that investments in human capital generate greater returns and income throughout working life, Therefore, the greater the investment in education and training, the greater the income there will be in the future.
- Discrimination and prejudice can affect human capital and people's income in a competitive labor market, but this decreases as companies seek to maximize their profits.

## 4. Methodology

### 4.1 Data

The data used in this study are taken from the national survey into work and employment (la Encuesta Nacional de Ocupación y Empleo, ENOE), for the years 2019 to 2021. The survey was conducted by the National Institute of Geography and Statistics, INEGI (Instituto Nacional de Geografía y Estadística). The aim of ENOE is to provide figures for the occupations and employment of the economically active population (EAP).

The features of ENOE make it possible to disaggregate information according to different lines of interest, as in the present case when a selection was made from the EAP of interviewees with at least a first degree who said they were occupied and received payment. The size of the sample after selecting the information required for this study continues to be representative of the whole population as over 123,000 households were interviewed for each quarter.

To put the study in context, the analysis was applied to information from the quarters available of the years 2019 to 2021. Subsequently, to emphasize the effects of the pandemic, before, during and after the event, the quarters available for 2020 and the first quarter of 2021 were analyzed for workers with further education.

It should be mentioned that it is normal to use the figures for the second quarter of the year, because it is considered more stable in terms of the employment situation of the EAP, however, for this study, with the aim of detecting any possible differences between quarters as a result of the pandemic, all three quarters were used for every year analyzed, excluding the second quarter of 2020, because during the lockdown the survey for this quarter was changed to consultation by telephone (Telephone Survey of Occupation and Employment, *Encuesta Telefónica de Ocupación y Empleo,* ETOE), which means that neither the interviews nor the samples are exactly comparable with the data from the other quarters and the traditional ENOE.

The variables taken into account are sex, years of education, income for the job, age in five-year groups for members of the population aged 15 or more, level of studies (teacher training, technical college, first degree (bachelor's), masters and doctorate) and the field of academic study, as shown in Table 1.

**Table 1.** Variable of the field of academic training received.

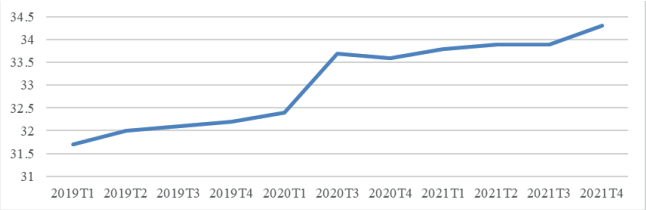
| Sciences of Education | Physics, Chemistry and Earth Sciences |
|---|---|
| Teacher training | Mathematics and Statistics |
| Arts | Computer Siences |
| Humanities | Industrial engineering, mechanics, electronics and technology |
| Social sciences and studies of behavior | Manufacturing and processes |
| Sciences of information | Architecture and construction |
| Business and administration | Agronomy, forestry and fishing |
| Law | Veterinary science |
| Natural sciences | Health |

### 4.2 Techniques for the analysis

*4.2.1 Attribution of missing at random (MAR) data*

Taking into account the tendency originally demonstrated by Rodríguez-Oreggia and Videla (2015), and corroborated in the present study, for the number of people interviewed in the ENOE who do not provide information in their income, we use data for the variable income according to occupation, with the aim of minimizing the bias that comes with attributing the answer to them. The methodology considered is the hot-deck proposed by Campos (2013), for the attribution of missing salaries randomly (MAR), and this method of attribution as defined by Little and Rubin (2002), is applied when there is a correspondence between the probability of not answering the question – which in this case refers to the salary – and the explicative variables of the same, but the categories of its vector appear randomly.

**Figure 1.** Percentage of workers who do report any income.




Source: Figures for the quarterly PEA obtained from ENOE (2019-2021).

The attribution involves assigning an estimated value to the variables with missing data. To use the MAR, first the tendency for the individuals interviewed to provide no information on their wages is verified. Figure 1 sums up the tendency, where it can be seen that from the figures provided by the ENOE for the third quarters of 2019 to 2021, the tendency not to report income has increased by 1.08%, a situation that demonstrates that there may be variables corresponding to the salary. Therefore, on the basis of the difference over time in the mean values of the variables chosen for explaining income, which for this case were sex, age group of ten years, level of studies, civil state and position at work, it should be determined whether the probability of reporting income or not is connected to the characteristics of the individuals interviewed.

Table 2 shows the results of the mean differences, with $P < 0.000$ for all cases, so there are differences between those interviewed who report and those who do not report their incomes, that is to say, the probability of not reporting income is connected to the explicative variables for why the missing salaries are random.

**Table 2.** Mean differences, among those interviewed reporting their income or not.

| | Mean | | Statistical t | Sig. |
|---|---|---|---|---|
| | Not reported n= 605666 | Reported n= 1278951 | | |
| Sex | 1.4 | 1.41 | -8.048 | 0 |
| Age | 5.43 | 5.38 | 12.632 | 0 |
| Level of education | 4.62 | 4.1 | 171.667 | 0 |

We can also state that men, older people, those with a higher level of education, single people and the self-employed are more likely not to report their salary. Given the evidence that shows both the graph of the tendency and the mean differences, it was established that the ENOE has MAR characteristics for the variable income, so we went on to attribute the figures by the *hot-deck* method.

Following the attribution of data in the data base used, we proceeded through the Gini index to determine income inequality by identifying the socio-demographic characteristics and those of the academic education of the employees who were most affected in their incomes as a consequence of the pandemic.

*4.2.2 Gini index*

The Gini Index (GI) is useful for calculating income inequalities, using the values from 0 to 1, where 0 reflects perfect equality and 1 complete inequality. The calculation is made with the following formula:

$$IG = \frac{\sum_{i=1}^{N-1}(P_i - Q_i)}{\sum_{i=1}^{n-1} P_i} = 1 - \frac{\sum_{i=1}^{N-1} Q_i}{\sum_{i=1}^{N-1} P_i}$$

Where:

P = cumulative percentage of the population

Q = cumulative percentage of income

With the help of the GI in this study we hope to detect how the pandemic affected the income of human capital in Mexico IG, identifying its impact by sex, age group, level of studies and professional training.

*4.2.3 Mincer income equation*

The rate of return on education known as the Mincer (1974) income equation, consists of estimating, by ordinary least squares (OLS) using as a dependent variable the natural logarithm of incomes and as independent variables the percentage increase in income per year of schooling, the work experience known as potential experience. Potential experience is included in the model in linear and quadratic form, as there is a positive linear relation between income and experience, and also because with the increased age and experience of people, their income increases at a declining rate which is due to the obsolescence and exhaustion that people show as age increases.

The income equation is expressed thus:

$$\ln Y_i = \beta_0 + \beta_1 Aes + \beta_2 Exp + \beta_3 Expe^2 + u_i$$

Where:

ln $Y_i$ = the natural logarithm of the individual's monthly income i, where i = 1 ,..., n.

Aes = years of schooling;

Exp = potential experience ( Age– aes – 6);

Exp2 = potential experience squared;

$u_i$ = term for stochastic error for each i-th individual.

One of the objectives of this study apart from observing inequality before, during and after the pandemic, is to learn how it affected income for men and for women, and in the case of women employees also differentiating them through the area of their professional training; for this reason various estimates will be made of the income equation: by sex, and by each of the specific fields in the classifications by INEGI (2011).

# 5. Results

## 5.1 Descriptive analysis

Firstly, it was determined that 40.5% of those interviewed were women, and the level of education overall was mainly teacher training, technical college, first degree, masters and doctorate, with a distribution for men of 0.1%, 2.5%, 22.2%, 1.7% y 0.3% respectively, and for women, of 0.2%, 5.4%, 27.3%, 2.5% y 0.3% respectively. Average income and percentage of the total for men and for women are itemized in Table 3.

**Table 3.** Average income/ percentage of the total: by level of education and professional area.

| | Men | | Women | |
|---|---|---|---|---|
| | Income ($) | Share of total (%) | Income ($) | Share of total (%) |
| Primary | 5,536.15 | 18.80 | 3,643.10 | 15.50 |
| Secondary | 6,387.88 | 29.90 | 4,338.08 | 26.70 |
| High school | 6,761.97 | 24.40 | 4,997.28 | 22.00 |
| Teacher training college | 7,492.21 | 0.10 | 6,338.25 | 0.20 |
| Technical college | 8,014.26 | 2.50 | 5,726.04 | 5.40 |
| First degree | 8,537.27 | 22.20 | 7,256.20 | 27.30 |
| Masters | 13,520.00 | 1.70 | 11,360.07 | 2.50 |
| Doctorate | 14,978.75 | 0.30 | 13,428.81 | 0.30 |
| Education sciences | 10,068.18 | 2.60 | 8,011.27 | 6.90 |
| Training as a teacher | 8,663.57 | 4.30 | 7,641.04 | 10.60 |
| Arts | 7,155.29 | 2.10 | 6,499.04 | 2.50 |
| Humanities | 7,882.30 | 1.10 | 7,360.17 | 1.50 |
| Social sciences and behavioral studies | 8,506.74 | 3.40 | 7,049.46 | 8.90 |
| Information technology sciences | 8,252.68 | 1.60 | 6,863.18 | 2.10 |
| Business and administration | 8,845.79 | 25.10 | 7,257.31 | 30.20 |
| Law | 8,637.57 | 9.50 | 7,603.28 | 8.20 |
| Natural sciences | 8,762.76 | 1.20 | 7,727.51 | 1.60 |
| Physics, chemistry and Earth sciences | 10,120.94 | 0.60 | 8,381.28 | 0.40 |
| Mathematics and statistics | 9,441.88 | 0.30 | 7,819.71 | 0.20 |
| Computer sciences | 8,513.96 | 3.90 | 6,759.06 | 2.70 |
| Industrial engineering, mechanics, electronics and technology | 8,751.43 | 25.30 | 7,421.14 | 6.20 |
| Manufacturing and processes | 9,946.82 | 1.30 | 6,789.09 | 0.80 |
| Architecture and construction | 9,192.85 | 6.90 | 7,777.97 | 1.90 |
| Agronomy, forestry and fishing | 8,768.97 | 2.70 | 7,012.46 | 0.50 |
| Veterinary science | 8,222.53 | 1.10 | 6,554.79 | 0.40 |
| Health | 9,475.44 | 6.80 | 7,725.50 | 14.30 |

Figures 2, 3 and 4 below show the estimated inequalities for the EAP with the quarterly GI, differentiated by sex, age group, level of studies and professional training, for those among the interviewed with first degrees, masters or a doctorate. Here the differences in pay for men and for women can be observed, that amount to a constant of approximately 3%, except during the period of lockdowns, when a slight narrowing of 1.2% is seen; with regard to the ages of those interviewed, the gap between men and women increases with age and it can be seen that for those in the age groups from 15 to 39, inequality is 3%, for those aged between 40 and 54 it is 4% and for those aged 55 or more, it is 5%. During the period analyzed it can be seen that for the EAP as a whole and according to sex, the highest rate of inequality was in the third and fourth quarters of 2020, at 34, 33 and 36% respectively.

**Figure 2.** Inequality in the income of the EAP according to sex.

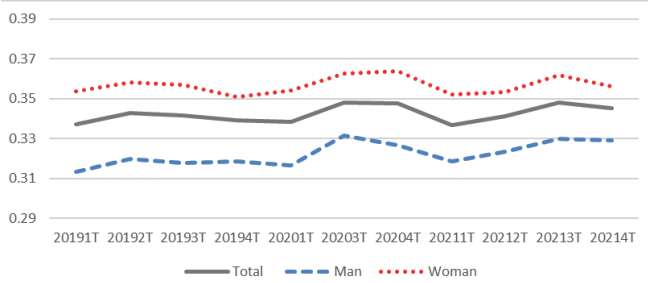
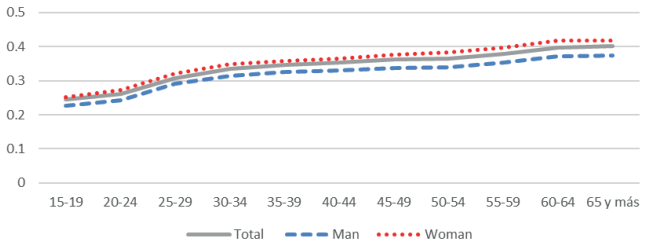



**Figure 3.** Income inequality of the EAP according to age group.



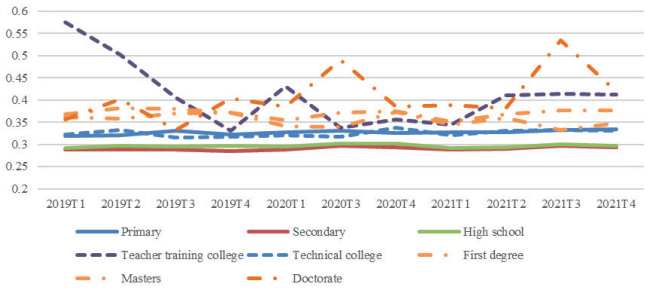

The aim of this study was to detect changes in income according to the level of schooling of employees, during and after the pandemic, emphasizing workers with qualifications from further education.

Next, the analysis considers the level of education, first in a general way including all levels of study: then according to the three groups of basic level (primary and secondary), higher technical level at university (teacher training and technical college), and further education (first degree, masters and doctorate), including those with an advanced technical and a higher level qualification, and finally we analyze inequality according to the field of academic education.

Figure 4 gives a graphic representation of the income gaps for different levels of study, that applies to the quarters analyzed. We can see from this that workers with basic studies kept the same income through the whole period of analysis, noting that the GI is greater for those with only primary studies than for those with secondary and high school schooling; while those at the level of teacher training (normal in Mexico), and doctorate, show greater variations; and it should be observed that in the third quarter after the start of the lockdowns, the income gap increased for those interviewed who had a doctorate, while it decreased for those with a master's degree.

According to Cruz et al. (2021), the inequality gaps grew for those who were already in vulnerable situations before the pandemic, so informal, independent and unpaid workers and those employed in small businesses and in sectors that found themselves restricted by the lockdown measures, such as commerce, services and construction, were the most affected. So it was that demand for low-paid workers in jobs requiring a low educational level increased during the pandemic (Campos-Vázquez et al., 2020)

**Figure 4.** Income inequality of the EAP according to level of studies.



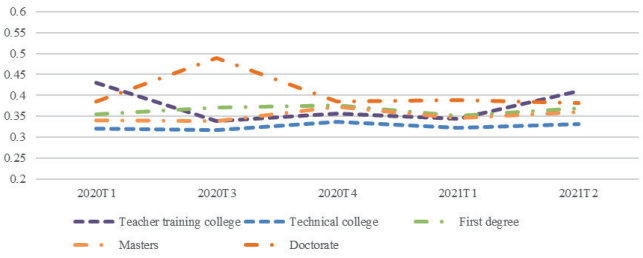

Starting with the recognition of the knowledge and accumulated experience of individuals as human capital, we go on to select from the EAP those of the interviewed who have a qualification of a higher technical level or a higher level, and to appreciate the data better we take figures from the first quarter before the start of lockdowns and the fourth quarter after they ended. Figure 5 reflects the results, from which it may be seen that the gap in wages

increased in the quarter after the pandemic for people with first degrees (licenciatura in Mexico) and doctorates, by about 10% for the former and 2% for the latter.

On the other hand, the gap decreased for those with teacher training, higher technical or master's degrees; nevertheless, by the second quarter of 2021, the majority, excluding those with doctorates, returned to the GI they had had before the pandemic. An aspect to be emphasized is that workers with teacher training studies improved their GI significantly by up to approximately 9%, and a year later they had widened the gap in their incomes. This is probably due to the fact that education continued on line during the pandemic. It should be mentioned that over time those interviewed with qualifications in higher technical studies maintain a gap in wages that is more homogeneous and have a better GI than those with a different level of studies. This might be because of the characteristics of the work that is offered in Mexico.

The above is complemented by data from Monroy (2021), who points out that the greatest reduction in income was for the lowest-income population, causing an increase in income inequality.

**Figure 5.** Inequality in the income of those interviewed with qualifications in higher technical and higher studies.




## 5.2 Analysis of inequality for workers with higher level studies

Figure 6 below presents graphs differentiating the GI for employees with studies to the level of higher education according to their sex, and from these the income inequality during the period of lockdowns for those with first degrees or masters may be observed in comparison to that of those with a doctorate, and during the start of the lockdown the income gap of women in respect of the tendency that applied is seen to have been reduced, becoming favorable for women again in the first quarter of 2021. The results reflect the fact that the GI of the incomes of the EAP with higher studies is better for women. Which will be demonstrated subsequently with the Mincer regression equation, differentiated by sex.

Next, Figure 7 provides a graph showing the GI for employees with a higher level qualification, differentiated by field of academic education.

It can be seen in the graph that the indices were lower for employees with a doctorate from Teaching Training studies and a master's degree in Veterinary Science, Teacher Training, Humanities, Mathematics and Statistics.

Likewise, Figure 8 has graphs for employees with a level of higher studies, differentiated by academic education and by sex.

It can be seen from the graphs that for women with first degrees, the GI were lower than those for men in most areas, except for the arts, humanities, natural sciences and law.

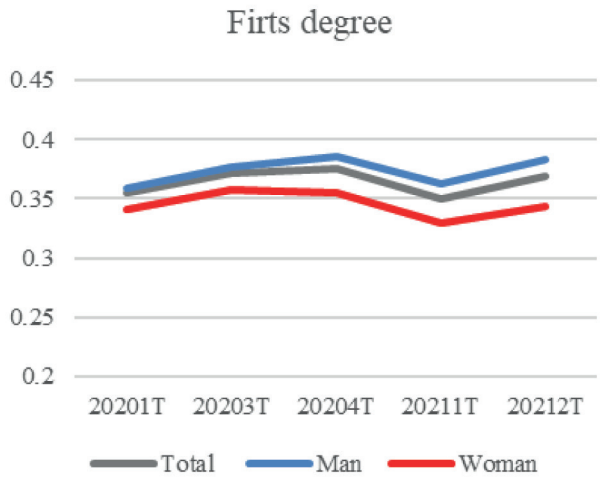
As for those who had a master's degree, it was demonstrated that for all areas of study, the lowest rates were for women, especially in services, mathematics and statistics, health, veterinary science and teacher training; finally, for those with doctorates, the areas where women had a smaller GI were: teacher training, information sciences, industrial engineering, agronomy, sciences of education, and health. These results show that for women investment in education favors employment.

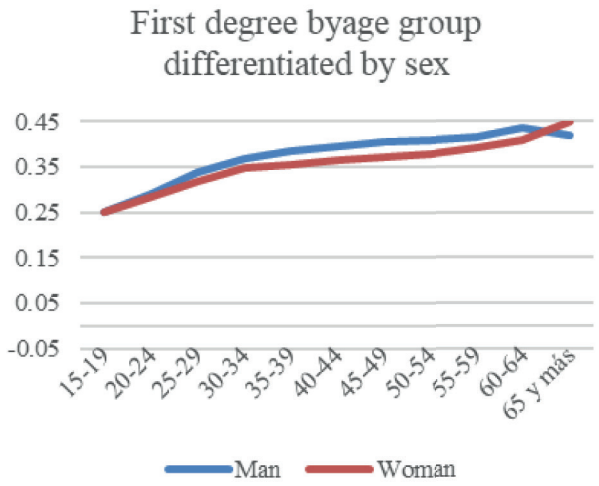
With the previous results, it can be deduced that the relationship between the variation in income and the COVID-19 pandemic in professionals depended on a series of factors, such as job loss, reduction in working hours, change in work modalities, and changes in labor demand.

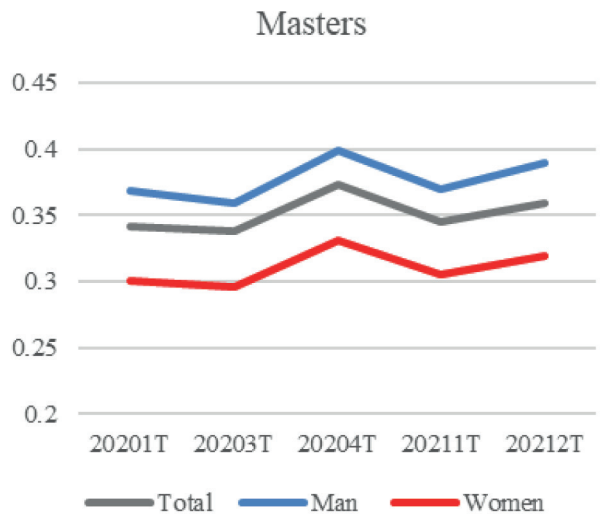
While some professionals were affected by job loss or reduced income, others were able to adapt to the new circumstances and, in some cases, even experienced improvements in their job and salary prospects.

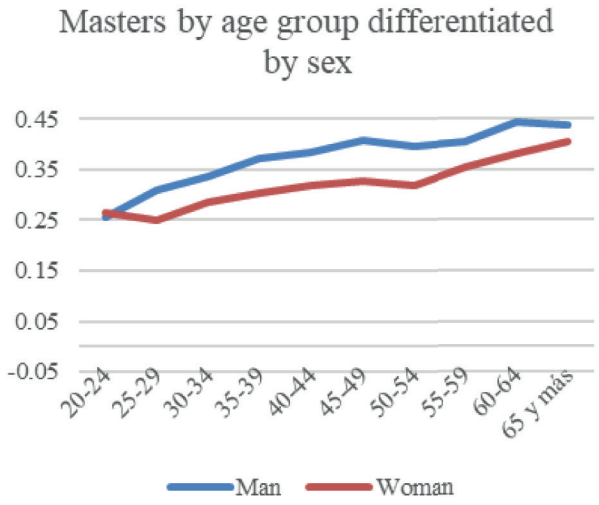
The situation also evolved over time as economic recovery measures were implemented and vaccines were distributed to control the pandemic.

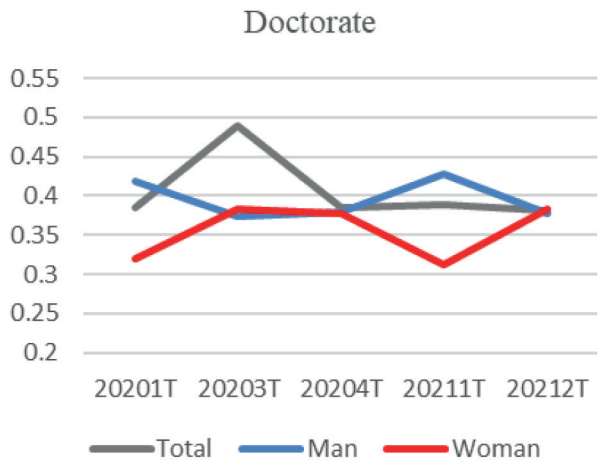
**Figure 6.** Inequality in the incomes of those interviewed with a qualification in higher level studies and for their age group differentiated by sex.



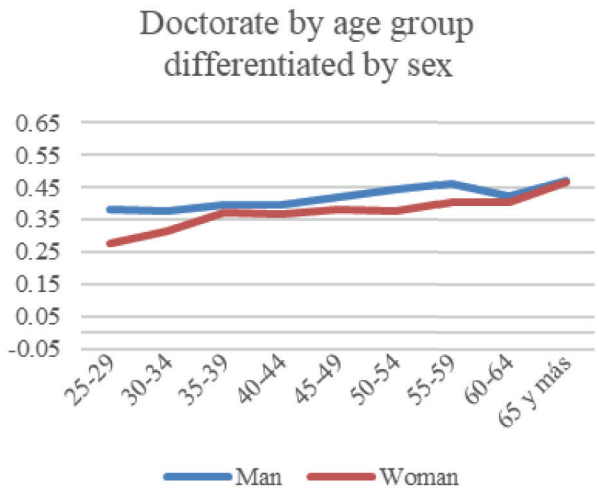



**Figure 7.** GI for employees with a higher-level qualification, differentiated by field of academic education.

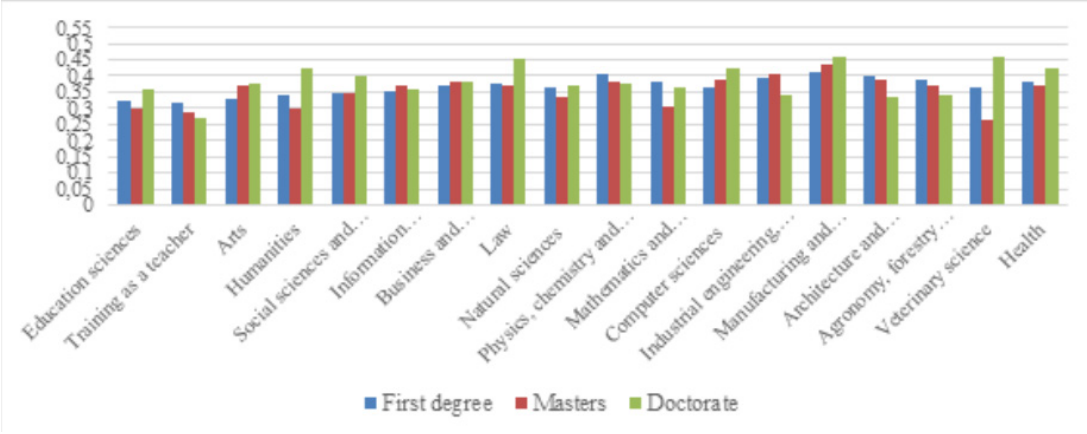
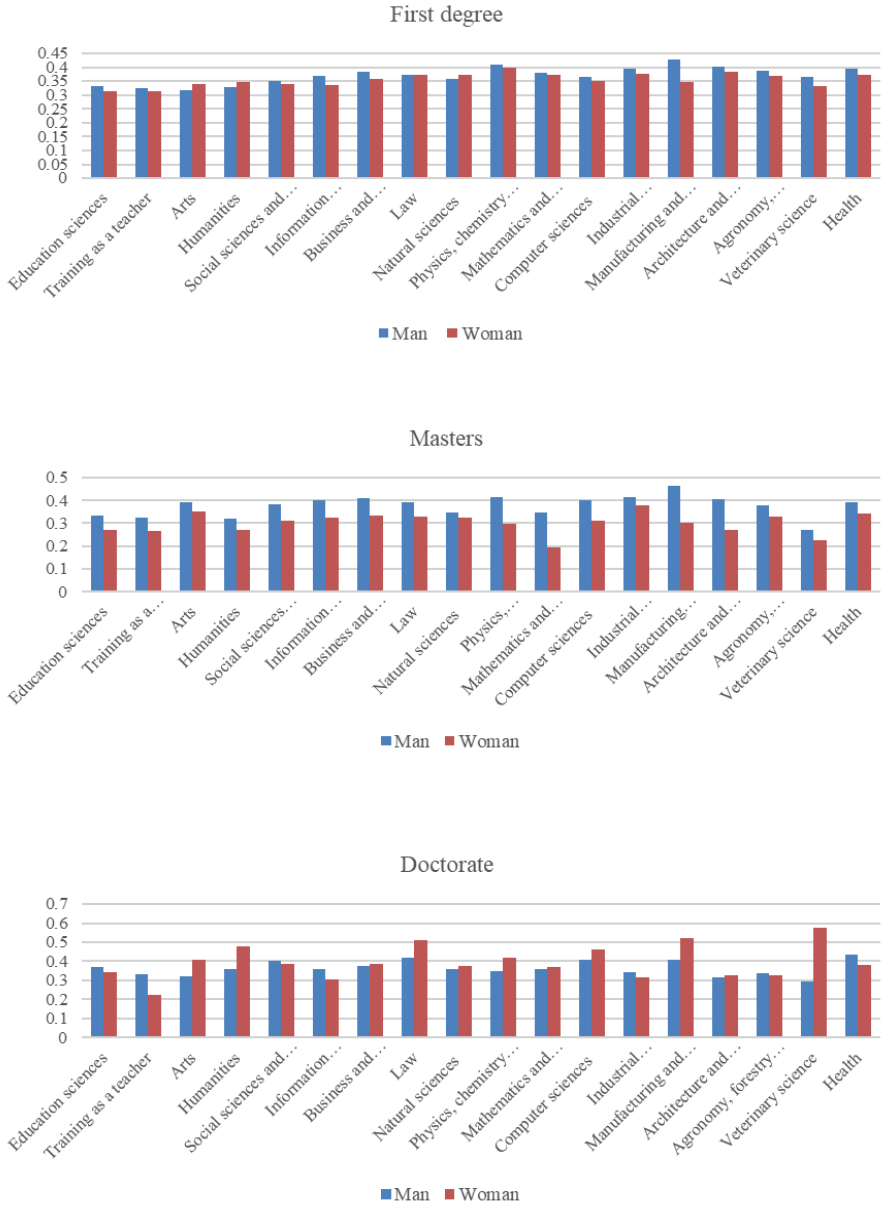



**Figure 8.** GI for employees with a higher level of studies, differentiated by field of academic education and by sex.



### 5.3 Analysis of income

To complete the analysis, after learning about the inequalities by areas of study, we go on to estimate the returns from education through the Mincer income equation, first the results from the income models estimated for the whole of the EAP, for men and for women, are resumed in Table 4. Subsequently, the results for each area of study are noted differentiated by sex.

**Table 4.** Results of the income models for the EAP, Men and Women.

| EAP lnY | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| Years of schooling | 0.044 | 0.000 | 391.38 | 0.000 | 0.044 | 0.044 |
| Exp | 0.020 | 0.000 | 264.67 | 0.000 | 0.020 | 0.020 |
| Exp2 | 0.004 | 0.000 | -271.52 | 0.000 | 0.000 | 0.000 |
| _cons | 7.866 | 0.002 | 4067.44 | 0.000 | 7.863 | 7.870 |
| Men | | | | | | |
| Years of schooling | 0.037 | 0.000 | 279.73 | 0.000 | 0.037 | 0.037 |
| Exp | 0.021 | 0.000 | 235.8 | 0.000 | 0.021 | 0.022 |
| Exp2 | 0.004 | 0.000 | -234.12 | 0.000 | 0.000 | 0.000 |
| _cons | 8.050 | 0.002 | 3604.15 | 0.000 | 8.046 | 8.055 |
| Women | | | | | | |
| Years of schooling | 0.061 | 0.000 | 327.75 | 0.000 | 0.061 | 0.061 |
| Exp | 0.022 | 0.000 | 175.1 | 0.000 | 0.022 | 0.022 |
| Exp2 | 0.004 | 0.000 | -189.48 | 0.000 | 0.000 | 0.000 |
| _cons | 7.486 | 0.003 | 2284.85 | 0.000 | 7.479 | 7.492 |

The results demonstrate, according to the value of the statistic t, that the parameters both for the EAP and for sex, are statistically significant at 5%. With regard to the coefficients, the rates for return on education were for the whole of the EAP and show that for every year of schooling income increases by 4.4%; for men it was by 3.7% whole for women it was by 6.1%, which shows that education pays better for women than for men.

Also, with regard to experience, the coefficients demonstrate that for every additional year of experience, people's income increases by 2, 2.1 and 2.2% respectively and decreases equally to a rate of 0.04% as shown by the coefficient of experience squared.

The values of $\beta_0$ that represent the constants of the equations, estimate the values of income in natural logarithms, when schooling and experience are of zero years. To learn the incomes for zero years of schooling and experience the antilogarithm is applied to the values of the constants, and the results are 2,608.28 Mexican pesos for the general population, 3,135.81 for men and 1782.18 for women.

Thus, with the aim of measuring the impact of income inequality on workers by area of professional training, Figure 9 presents the incomes for each profession when the values of $\beta_0$ are on the y-axis to start with, that is when the level of education is first degree and experience is zero years.

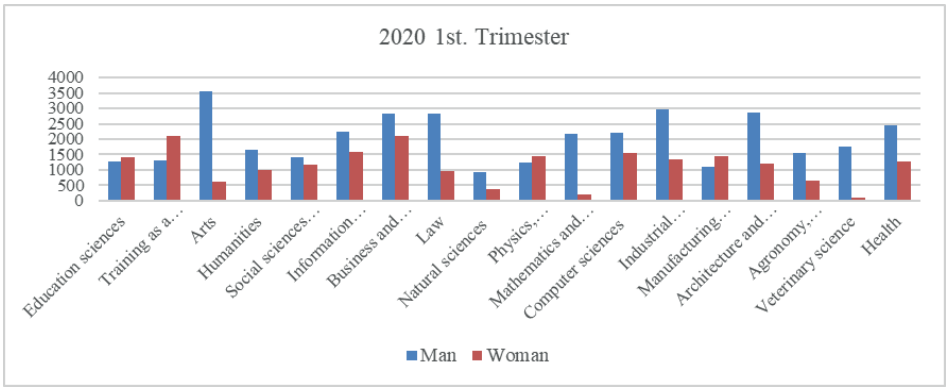
We can state from the results that there are differences in the incomes of employees with an academic qualification, according to professional training or sex, and it is clear that the pandemic seems to have favored, in terms of income received, women in different professional areas, where previously as demonstrated in the graph for the first quarter of 2020 the income gap was in favor of men and those in the areas of the Humanities, Social Sciences and Behavioral Sciences, Information Sciences, Business and Administration, Mathematics, Statistics and Veterinary Science.

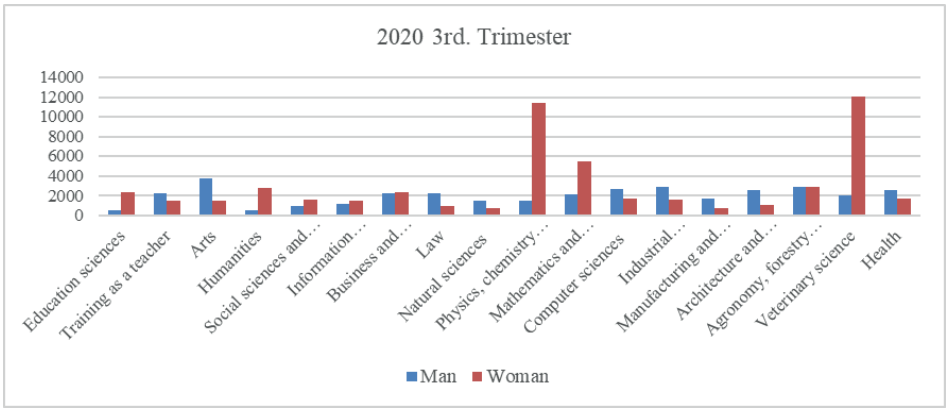
The above agrees with Campos-Vázquez, et al. (2020) who comment that the structure of labor demand changed temporarily during the same period, there was greater demand for low-wage labor, occupations and workers with a low educational level in April, but from May to July the demand returned to the previous levels of the pandemic, teleworking did not increase in that period and the skills and personal characteristics sought did not change during the pandemic.

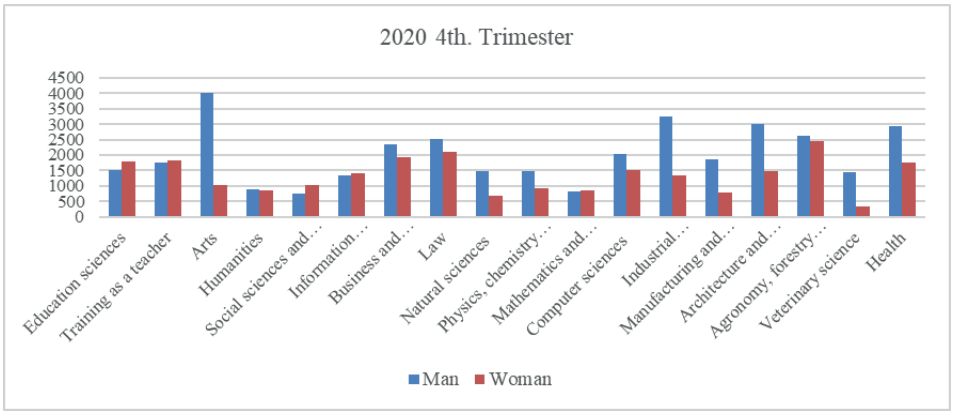
It is worth emphasizing that nearly a year after the start of the pandemic, as the graph for the first quarter of 2021 shows, incomes continued to have a favorable difference in the areas of the Humanities, Social and Behavioral Sciences, and Sciences of Information.

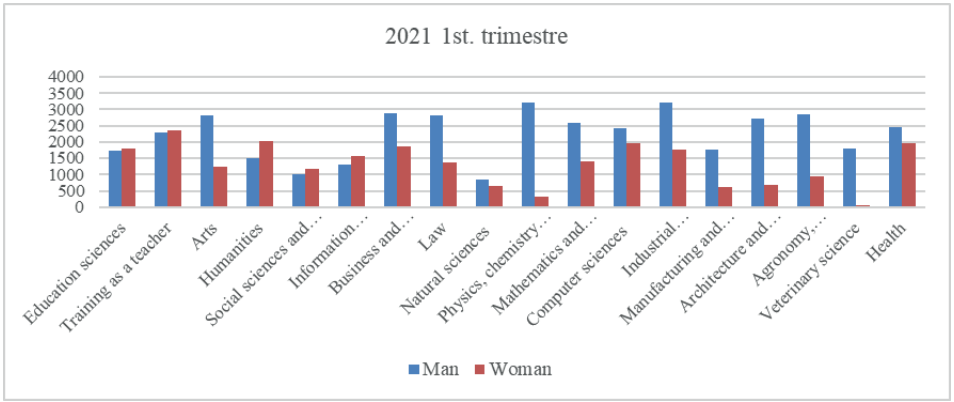
From the above, it is possible to deduce that the COVID-19 pandemic unequally affected the incomes of men and women, and in many cases, women faced additional economic challenges due to the intersection of gender inequalities and the economic consequences of the pandemic. These inequalities led to the creation of business policies and measures that promote gender equality in the workplace and address economic disparities that were exacerbated by the pandemic.

**Figure 9.** Incomes with first degree and zero years of experience for each area of study differentiated by sex.



## 6. Discussion and Conclusions

In this study we have identified inequality for the EAP in terms of socio-demographic aspects, for those individuals with higher education qualifications, and it was possible to validate the first hypothesis by observing differences in occupations according to the age of the person interviewed, which demonstrated that with increased age, inequality increases.

In the same way, the greatest increase in the income gap, a difference of up to 8%, was observed between people with first degrees and those with a doctorate. Whereas qualifications from teacher training, higher technical and master's courses had a reduction in the gap, returning to levels prior to the pandemic, after the first half of the year 2021, and it is thought that this situation may be related to the continuing digital education, in the case of teacher training courses. With regard to higher technical studies, the GI was more homogeneous and better than for other levels of education, which might be the consequence of the characteristics of work offered in Mexico. Furthermore, a better GI was found for women with higher education, showing a reduction in the income gap, but returning to normal in 2021.

The results of this analysis also showed inequality in occupation by areas of professional training, from the GI for the areas of Veterinary Science, Teacher Training, Humanities and Mathematics and Statistics, and it can also be noted that investment in education for women favors the occupation, as the higher the level of education, the smaller the inequality gap, which makes it possible to validate the second hypothesis and confirm that the level of education reached has an impact on the occupation held.

With regard to areas of professional training, the impact of inequality on the income of employees was measured, and it became clear that every additional year of schooling reflects a rate of return form investment in education of 4.4%, which, it should be mentioned, agrees with the results from the GI where women benefit from higher education, with a larger percentage than men, so there is an increase in income of up to 2.18%, and this makes it possible to validate the third hypothesis on the difference in income between male and female employees with higher education qualifications.

In the context of the pandemic, these differences in income were clearly in favor of women in particular professional areas as shown in the results, and agree with what we could see for the areas of teacher training, information sciences, industrial engineering, agronomy, sciences of education and health, where women reflected favorable conditions in terms of GI. This point concurs with Lobato (2020), who notes that incomes were reduced to a lesser extent in jobs considered essential and in reaction to the nature of the work and how possible it was for them to be adapted to digital forms of execution. With regard to the first variable, it may be concluded that the activities considered essential are feminized jobs. And for the second variable, as women are concentrated in jobs in the services sector, they generally adapted more than men did to working from home and a digitalizing of the work they did.

An important finding of this study is to verify that the gender wage gap, that is, the difference in income between men and women, persists before and after the epidemic and is due to a series of complex and multifaceted factors, such as: discrimination of gender, the distribution of social roles of men and women, women's role as family caregivers, etc. These factors continue to contribute to the persistence of the gender wage gap before, during and after the pandemic, although the pandemic itself has also accentuated some of these inequalities.

Another factor is that women choose fields of study and careers that historically pay less. This has exacerbated the pay gap, as traditionally female occupations tend to have lower wages, and this has continued during and after the pandemic.

Another important finding is the recognition of persistent salary differences between professional and non-professional before and after the COVID-19 pandemic. This is due to several factors that continue to affect the social wage structure, such as experience, job responsibilities, and market demand. Professionals' incomes often depend on investments in education and training (Beckers, 2009), as well as the specialized skills and experience they bring to the job.

Finally, with the present study it was determined that income inequality is a complex and persistent problem that requires continuous efforts from both governments and companies. Public employment policies after COVID-19 must adapt to the new labor and economic reality, focusing on employability,

social protection, equal opportunities and the promotion of sustainable and quality employment. These policies must be flexible and willing to adapt as working and economic conditions evolve.

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UNIVERSIDAD DE SONORA

Interdisciplinary Faculty of Economic and Administrative Sciences

RESEARCH

# Enhancing Emotional Well-Being Among Teachers at UNISON

## Potenciando el Bienestar Emocional en los maestros de la Unison

Date received: July 18, 2023

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Date of approval: September 19, 2023

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## Abstract

The program "Enhancing Emotional Well-Being Among Teachers at the University of Sonora (Unison)" involved the design and implementation of a training and emotional well-being enhancement program for faculty members from the Division of Economic and Administrative Sciences at the University of Sonora in Hermosillo, Mexico. The program was aimed at a group of teachers and took place from Monday, December 5 to Friday, December 9, 2022. It consisted of five two-hour sessions, held from 10 a.m. to 12 p.m. The training included theoretical sessions complemented by various practical strategies. A total of 10 in-person hours were conducted, along with 10 hours of independent work, which included a series of activities submitted via the Microsoft Teams platform. The course was delivered in person at the audiovisual room of the Master's in Administration program on the Hermosillo Campus of the University of Sonora. Assignment submission and course evaluation took place on December 13, 2022.

The main objective of the program was to provide theoretical, methodological, and emotional tools to faculty at the University of Sonora regarding the five dimensions of well-being, with an emphasis on the emotional and professional dimensions. The aim was to enhance their own well-being through a variety of activities and the proposal of practical strategies that contribute to the development of life skills and well-being.

**Keywords:** Well-being, emotions, teachers, university

**JEL Code:** I31

## Resumen

El Programa "Potenciando el Bienestar Emocional en los Maestros en la Universidad de Sonora (Unison)" consistió en diseñar e implementar un programa de formación y potenciación del bienestar emocional de los maestros de la División de Ciencias Económico-Administrativas de la Universidad de Sonora en Hermosillo México.

El programa se dirigió a un grupo de docentes, inició el lunes 05 de diciembre y finalizó el 9 de diciembre del 2022, distribuido en cinco sesiones de dos horas cada una en horario de 10 a 12 horas. Se conformaron sesiones de formación teóricas

que se complementaron seguidamente con diversas estrategias prácticas, se realizaron 10 horas presenciales y 10 de trabajo autónomo compuesto por una serie de actividades que enviaron mediante la plataforma Microsoft Teams. El curso se realizó de manera presencial en la sala audiovisual de la Maestría en Administración en el Campus Hermosillo de la Universidad de Sonora. La entrega de las actividades y evaluación del curso tuvo lugar el 13 de diciembre del 2022.

El objetivo general del programa consistió en brindar herramientas teóricas, metodológicas y emocionales, a los maestros de la Universidad de Sonora, acerca de los aspectos relacionados con las cinco dimensiones del Bienestar, con énfasis en el Emocional y el Profesional, para potenciarlo en ellos mismos, a través de la realización de diversas actividades y propuestas de estrategias prácticas que contribuyan a la construcción de sus habilidades de vida y bienestar.

**Palabras clave:** Bienestar, emociones, maestros, universidad.

**Codigo JEL:** I31

## 1. Introduction. Context analysis and needs assesment

The Universidad de Sonora (Unison) was founded in 1942 and has since been the leading autonomous public institution of higher education in the state of Sonora, Mexico. It currently operates six campuses: Hermosillo, Cajeme, Santa Ana, Caborca, Nogales, and Navojoa. The Central Regional Unit (URC) is composed of the first two campuses, the Northern Regional Unit (URN) includes the following three, and the Southern Regional Unit (URS) corresponds to the last campus. According to its academic organizational model, each campus comprises a set of Divisions currently, there are 11 in the URC, 3 in the URN, and 2 in the URS.

Unison's Organic Law, which governs its operations, states: "The Division is the general unit of organization within the Regional Units; it is composed of Departments and established by areas of knowledge." Currently, the Division of Economic and Administrative Sciences (DCEA) at Unison's Hermosillo campus where the intervention was carried out consists of the following three departments: Administration, Accounting, and Economics. These departments offer seven undergraduate programs and eight graduate programs (seven master's degrees and one specialization).

Unison's higher education enrollment has remained around 33,000 students in recent years, of which approximately 95% are enrolled in undergraduate programs and 5% in graduate programs. This makes Unison responsible for serving approximately 27% of the higher education student population in the state of Sonora. The URC alone accounts for 82.6% of Unison's undergraduate enrollment.

Faculty at Unison engage in core academic activities across three areas: teaching, research, and outreach. The university has a total of 2,534 instructors 1,343 adjunct faculty and 1,191 full-time faculty of which 42% are women and 58% men. The program's target audience is the teaching staff of the DCEA, consisting of 202 instructors (both full-time and part-time), distributed as follows: 53 in Administration, 87 in Accounting, and 62 in Economics.

### *Institutional framework defining the program's strategic lines of action*

In its most recent Institutional Development Plan (PDI) 2021–2025, Unison presents a renewed focus on the importance of healthy living within the university community. Its first strategic pillar is titled: "Cohesion and Formation of a Sustainable, Equitable, Inclusive, and Healthy University Community," which encompasses Unison's major institutional goals and challenges. This strategic line includes five priority objectives. The fourth objective is: "To ensure the safety of individuals and university property, and to promote self-care and healthy lifestyles among the university community to enhance well-being." Each of these five objectives is supported by a specific institutional strategic program to guide concrete actions: 1. University identity and social recognition; 2. Sustainable university; 3. Equitable, inclusive, and gender violence-free university; 4. **Safe and healthy university**; y 5. Digital university. To oversee these programs, Unison established the Directorate for Support of Institutional Programs (DAPI) (PDI, 2021).

For the first time, Unison's 2021–2025 Institutional Development Plan integrates the Institutional Healthy Life Program (PIVS), launched in 2021

within the framework of the Health-Promoting Universities movement. This concept refers to Higher Education Institutions that foster an organizational culture guided by the values and principles of the global Health Promotion movement. According to the Pan American Health Organization (PAHO), the goal of Health-Promoting Universities is to create a learning environment and culture that improves the health, well-being, and sustainability of the university community, allowing individuals to reach their full potential through healthy living (PIVS, 2022).

The PIVS aims to "contribute to the formation of holistically healthy individuals, committed to their surroundings as agents of change with a salutogenic approach. Based on its programs and actions, it seeks to influence human and social development in a healthy and sustainable manner and support the improvement of health among members of the university community including students, faculty, and staff by strengthening a culture of holistic health that permeates all areas of life" (PIVS, 2022).

According to PIVS, psycho-emotional health refers to the psychological and emotional well-being of individuals. It denotes a mental state that enables people to live with adequate motivation, calm, and effectiveness, and to adapt to the normal stresses of life while fulfilling daily tasks and responsibilities. Within the framework of PIVS at Unison, the following areas are addressed (PIVS, 2022):

1. Psychological support

   https://programasinstitucionales.unison.mx/apoyo-psicologico/

2. Stress and emotion management

3. Support for suicidal ideation and attempts

   https://programasinstitucionales.unison.mx apoyo- en-ideacion-e-intento-suicida/

4. Adiction prevention

As part of its strategic actions, PIVS launched the "UniSaludable" project on Tuesday, March 14, 2023. The objective of this initiative is to promote comprehensive health self-care through digital tools and spaces. These include an online gym, tools and tips for maintaining a balanced diet and emotional health, as well as a comprehensive list of University of Sonora services that support the health of its community. The UniSaludable portal was created to raise awareness within the university community about the importance of self-care and health promotion through digital resources. This portal is accessible at:

https://programasinstitucionales.unison.mx/unisaludable/.

***Coordination and technical support at Unison***

To successfully implement the program at the Universidad de Sonora (Unison), it was essential to obtain support and approval from various institutional programs and bodies.

First, approval was obtained from the Coordination of the Institutional and Divisional Healthy Life Programs, the latter of which I have been a collaborator since 2022. Once both programs approved the implementation, and in accordance with Unison's regulations, the full course information was formally registered in the Academic Activity Management System (SiGeA) on the faculty portal on October 20, 2022, under the category of teaching disciplinary or didactic refresher courses or diplomas (see Image 1). Following the SiGeA registration, the course underwent several review processes. It was first reviewed by the Academy of History and Sustainable Development of the Department of Economics. Then, it was submitted to and reviewed by the Divisional Council of Economic and Administrative Sciences on November 16, 2022, which approved the delivery of the course. Subsequently, I received an official appointment as the organizer and instructor of the course. Finally, the final report for the course was presented and approved on February 3, 2023, by the Divisional Council of Economic and Administrative Sciences.

***Atmosphere of Acceptance and Support for the Intervention***

The program received full institutional support from Unison for its implementation within the Division of Economic and Administrative Sciences (DCEA). As previously described, this was made possible through the necessary approvals by relevant authorities, allowing the course to be delivered in person in the audiovisual classroom of the Master's in Administration program at Unison's Hermosillo campus. It was also complemented virtually through Microsoft Teams, the institution's official platform.

The dissemination of information about the course registration was requested through various channels.

First, to the members of the Divisional Program on Healthy Lifestyles. Secondly, an individual request was made to each of the members of the three Department Heads of Accounting, Administration, and Economics, as well as to the Director of the DCEA, so that they could extend the information to their respective teachers.

*The institution considers the intervention necessary and/or a priority*

According to the above, Unison expresses its commitment to psycho-emotional health in the PDI 2021-2025, as supported by the goals and outcome indicators related to the development of the PIVS (see Table 1). This is reflected in the latest results presented in the first Annual Report 2021-2022, which includes 64 events attended by a total of 7,058 people. These events were held to promote physical and emotional health within the university community, which is ultimately where this project will have an impact.

**Table 1.** Outcome Indicators of the strategic programs of the PDI 2021-2025 Unison

| Indicator Number | Indicator Description | Current Value | Target | | | | Responsibles |
|---|---|---|---|---|---|---|---|
| | | | 2022 | 2023 | 2024 | 2025 | |
| 4.1.1 | Number of events held per year on topics related to the promotion and care of physical and emotional health. | 35 | 40 | 50 | 60 | 70 | Student Support Office, Office for Institutional Program Support, Divisions, and Departments |

**Source:** https://www.unison.mx/institucional/pdi2021-2025.pdf

### *Objectives of the Intervention*

From the review of the previously mentioned needs, the following general and specific objectives are outlined below.

#### General Objectives

To provide theoretical, methodological, and emotional tools to the teachers of the Division of Economic and Administrative Sciences at Unison regarding the aspects related to the five dimensions of Well-being, with an emphasis on Emotional Well-being, in order to strengthen it through various activities and practical strategy proposals that contribute to the development of their life and well-being skills.

#### Specific objectives:

- Teachers will identify the various aspects that make up Well-being, as well as how it is measured, with a focus on subjective well-being.
- Teachers will explain, using critical arguments both orally and in writing, the importance of positive emotions for well-being.
- Teachers will apply strategies to express, both orally and in writing, the characteristics of their self-development in relation to emotional well-being.
- Specify strategies to enhance happiness, character strengths, positive emotions, engagement, positive relationships, meaning, and achievement.

## 2. Theoretical foundation

The central theme of this work is the enhancement of emotional well-being. To address this, it is essential to begin by explaining the concept of well-being, which has multiple definitions and various conceptual frameworks that must be specified and clarified due to their breadth and complexity. The book Questions About Well-being (Bisquerra, 2013) sheds light on the broad and diverse scientific study of this subject. The first relevant point to highlight is that there are various classifications of well-being. Initially, it can be grouped into two major categories: objective and subjective well-being. Within these, there are five types, which will be briefly outlined according to the definitions presented by Bisquerra (2014): material, physical, social, professional, and emotional. The first three types of well-being (material, physical, and social) fall under the objective category, while the last two (professional and emotional) are part of the subjective category.

**Table 2.** Types of well-being

| Major Categories of Well-being | Types of Well-being | Aspects |
|---|---|---|
| Objective well-being | Material well-being | Economic development<br>Technological development |
| | Physical well-being | Physical health<br>Mental health |
| | Social well-being | Political well-being<br>Community well-being<br>Interpersonal well-being |
| Subjective well-being (emotional) | Subjective well-being (hedonic) | Leisure time / Free time<br>Positive emotions |
| | Psychological well-being (eudaimonic) | Professional well-being<br>Personal commitment |

**Source:** Bisquerra (2014)

Objective well-being, as its name suggests, is the type that can be measured objectively. As previously stated, it includes material well-being (Gross Domestic Product), health (life expectancy), or aggregate indicators such as the Human Development Index (which includes the above plus education level), the Genuine Progress Index, the National Well-being Index, or Gross National Happiness, among others. On the other hand, subjective well-being refers to the personal evaluation of one's perception regarding overall life satisfaction. It has a cognitive or evaluative component that refers to a long-term period, and an experiential or affective component that relates to a specific moment, usually the present (Bisquerra, 2016b). Below are the definitions of the characteristics associated with the types of well-being within the objective and subjective categories:

Material well-being is likely the type most commonly associated with the general concept of well-being. It tends to align with economic well-being, which in turn is related to economic and technological growth and development subjects studied in economics and politics. However, interest in development and well-being has only emerged in recent decades.

- Physical well-being corresponds to physical health, and it does not only imply the absence of illness but the presence of bodily wellness.

- Social well-being results from maintaining good relationships with other people. However, it is a broad concept that varies across disciplines such as psychology, sociology, and political science. It can be divided into three categories: interpersonal, community, and political.

- Professional well-being is achieved when we feel fulfilled and satisfied with our workplace and the activities we perform. It is often demonstrated through professional commitment or affective engagement by an employee.

- Emotional well-being is the experience of positive emotions and feelings related to life satisfaction. It is the closest concept to happiness, representing the ability to consciously enjoy well-being, and it closely aligns with subjective well-being.

- Global well-being is the assessment of the various types of well-being within a person, organization, or society, evaluated through the average overall well-being of a group of individuals.

It is also relevant to distinguish between the concepts of well-being and happiness, as subjective or emotional well-being is often used as a synonym for the latter. Happiness is the word commonly used to refer to the maximum level of well-being that nearly everyone desires. However, it is a broad concept, sometimes considered nearly impossible to reach or maintain over long periods. The five types of well-being mentioned above are physical, material, social, professional, and emotional are elements that contribute to happiness but are not happiness in and of themselves. For example, income, health, or work can help us feel happier, but none of them alone constitutes happiness. However, emotional well-being is typically the closest to the concept of happiness.

From this, we can observe that some expressions or concepts are often used almost interchangeably, and the differences between them are not always easy to distinguish at first glance. Therefore, it is important to start from their definitions to clarify, specify, and avoid potential confusion.

### *Well-being and positive psychology*

Positive psychology is a relatively new field that began just over two decades ago. It is considered to have formally emerged with the publication of an article by Martin Seligman and Mihaly Csikszentmihalyi in the American Psychological Association (APA), where they first referred to Positive Psychology in the year 2000.

This marked a shift in scientific research away from focusing solely on disorders, psychopathology, and psychotherapy, toward an interest in and emphasis on generating positive emotions and experiences, personal strengths, optimism, flow, flourishing, and other elements that help improve quality of life and subjective well-being.

This is achieved primarily through the prevention of psychopathologies by developing emotional competencies that positively impact individual and social quality of life and well-being forming the foundation for well-being development within the framework of emotional education (Bisquerra & López-Cassá, 2020).

In 2002, Seligman published the book Authentic Happiness, from which three components emerge that people choose to form happiness: positive emotion, engagement, and meaning. At this initial

stage, for the author, happiness becomes the foundation of positive psychology, which can be approached through subjective measurement using a self-report on life satisfaction on a scale from 1 to 10, where each of the three elements mentioned contributes to increasing it. Later, the author expanded and refined his research, transitioning to the well-being theory (Seligman, 2002).

In the book Flourish: A Visionary New Understanding of Happiness and Well-being, published nine years later in 2011, well-being becomes the central topic of positive psychology. The main goal is to increase human flourishing, characterized by a satisfactory state of growth and happiness feeling highly satisfied with life and experiencing substantial emotional, social, and mental well-being, which must be measured and fostered (Seligman, 2011).

Some conclusions from Seligman's research on well-being indicate that there are five key components of human flourishing, which are found in people who report feeling happy. These form what is known as the PERMA model (an acronym in English), composed of Positive Emotion (which includes happiness and life satisfaction), Engagement, Relationships, Meaning, and Accomplishment. The foundation of this model lies in individuals' personal character strengths, which serve as pathways to each of these five areas. The first element involves increasing the frequency and intensity of positive emotions and a pleasurable life, the second, engagement, refers to achieving a sense of harmony, affinity, and flow of consciousness, the third element is the presence of positive and satisfying relationships with others, the fourth, meaning or a meaningful life is about finding belonging in something greater than oneself, Finally, accomplishment is about setting goals and achieving them, which helps us feel more competent. Improving each of the five elements that make up the PERMA model can enhance well-being, although none of them alone defines well-being. Nevertheless, each can be independently measured and strengthened. Some of these are assessed through self-reported data, while others can be measured objectively (Seligman, 2011).

After several years of research, Peterson and Park (2009) introduced the Values in Action (VIA) Project, which comprises 24 character strengths possessed by individuals to varying degrees. These strengths are organized into six core virtues: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence. The strengths under wisdom and knowledge include bravery, creativity, curiosity, open-mindedness, and love of learning; courage includes authenticity, bravery, persistence, and vitality; humanity includes kindness, love, and social intelligence; justice includes fairness, leadership, and teamwork; temperance includes forgiveness, modesty, prudence, and self-regulation; and transcendence includes appreciation of beauty and excellence, gratitude, hope, humor, and spirituality. These traits represent the best of our personality and can be cultivated and taught through the development of a character strengths profile. Research findings show clear evidence of the relationship between these strengths and life satisfaction, psychological well-being, and happiness. They also act as protective factors against psychological disorders (Seligman & Csikszentmihalyi, 2000).

Another cornerstone of Positive Psychology is the concept of Flow, developed by Csikszentmihalyi in the mid-1990s, even before the formal establishment of Positive Psychology as a field. This state is achieved by generating optimal experiences and engaging deeply in professional, personal, social, and leisure activities across different life contexts. When experiencing flow, individuals may feel joy, happiness, enjoyment, and a deep appreciation for life, to the point that they lose track of time, self-awareness, or even the effort required to carry out the activity. According to Csikszentmihalyi (1997), the phenomenon of flow is characterized by eight elements: the activity is challenging and demands skill; there is a merging of action and awareness; goals are clear and feedback is immediate; concentration is fully focused on the task at hand; the fear of losing control disappears; self-consciousness fades; time becomes distorted; and the activity is autotelic, meaning it is intrinsically rewarding.

## 3. Methodology

Out of the five sessions conducted, four were lecture-based and designed under a constructivist educational approach. This approach aimed to foster dialogue, reflection, and active participation from the teachers based on their prior knowledge of the topics. These first four theoretical sessions were intended to provide a strong theoretical foundation on well-being, happiness, and emotional education, enabling participants to acquire scientific

knowledge about the importance of these concepts. This theoretical grounding was essential for achieving the previously defined objectives of the proposal. Following the theoretical sessions, a series of practical activities was carried out outside the classroom. These activities focused on introspection and self-reflection, allowing participants to apply and enhance their understanding. Initially, this was done through the use of various tools to help identify and evaluate their authentic happiness and their overall well-being, including each of the five dimensions that compose it: their character strengths, positive emotions, engagement, positive relationships, meaning, and accomplishment. It is important to note that the sequence of the sessions was carefully planned to ensure they followed a logical progression as much as possible.

### *Planning*

The implementation of the program was carried out with the teaching staff of the DCEA at the Universidad de Sonora (Unison) from December 5 to 9, 2022. It consisted of five sessions, each lasting two hours, for a total of 10 hours of face-to-face instruction and 10 hours of independent work, resulting in a comprehensive 20-hour training program (see tables 3 and 4).

**Table 3.** Theoretical content and objectives of the sessions

| Session Topics December 5 - 9, 2022 | Objectives |
|---|---|
| 1. Theoretical Concepts: Well-being (2 hrs) and Happiness (2 hrs)<br><br>2. Measurement of Subjective Well-being (2 hrs) at the International Level and in Mexico (2 hrs)<br><br>3. Emotional Education in and for Well-being (2 hrs) | 1. Identify the concept and distinguish between different types or pillars of well-being and overall well-being, as well as raise awareness of its importance as a personal, social, political, and organizational goal.<br><br>2. Distinguish the relationship between happiness and well-being, understand the importance of studying and measuring happiness, and review key research findings on happiness.<br><br>3. Define and identify the concept, objectives, strategies, and importance of emotional education in the construction of well-being.<br><br>4. Present strategies to enhance emotional education and well-being.<br><br>5.Analyze the concept, classification, structure, and function of emotions. |

**Source:** Own elaboration.

**Table 4.** Practical activities and objectives of the sessions

| Activity Sessions December 5-9, 2022 (approx. 1 hr each) | Objectives |
|---|---|
| 1. Benicia Flower Model, Bisquerra (2013)<br><br>2. Satisfaction with life , Diener (1984)<br><br>3.Authentic Happiness Questionnaire, Peterson (2005)<br><br>4.General Happiness Questionnaire, Diener (1984)<br><br>5. My Happines, Cabrero (2011)<br><br>6. Defining and Enhancing PERMA Elements, IEPP (2022)<br><br>7. Practical Exercise Proposals to Enhance PERMA, Niemiec (2022)<br><br>8. VIA Character Strengths Questionnaire, Peterson and Park (2009)<br><br>9. Strategies to Develop Character Stregnths, Niemiec (2022)<br><br>10. The Construction of Well-being through Flow, Bisquerra (2021)<br><br>11.Group Music Therapy (2 hours) | 1. Evaluate your own well-being based on the five types in the Benicia Flower.<br><br>2. Become aware of which aspects of well-being work well for you and which need improvement.<br><br>3. Evaluate satisfaction with life.<br><br>4. Evaluate authentic happiness and general happiness.<br><br>5. Sensitize and identify what we understand by happiness.<br><br>6. Assess and strengthen the factors in which PERMA manifests.<br><br>7. Use your character strengths and enhance the five areas of PERMA with research-based activities.<br><br>8. Identify and classify the 24 individual character strengths.<br><br>9. Develop the character strengths identified in the VIA test.<br><br>10. Discover activities that produce flow states.<br><br>11. Emotional relaxation therapy through singing, music, and meditation. |

**Source:** Own elaboration.

### *Implementation process*

The program was aimed at a group of faculty members and took place from Monday, December 5 to Friday, December 9, 2022, consisting of five sessions of two hours each, held from 10 a.m. to 12 p.m. The course was delivered in a hybrid format, combining theoretical training sessions with practical strategies. A total of 10 hours were conducted in person, complemented by 10 hours of autonomous work involving a series of activities submitted through the Microsoft Teams platform. The in-person sessions were held in the audiovisual room of Building 7a at the Master's program in Administration, Hermosillo Campus, University of Sonora. The submission of activities and the course evaluation took place on December 13, 2022.

A total of 30 academics registered via Microsoft Forms, including 16 women and 14 men. Of these, 21 faculty members successfully completed the course, comprised of 13 women and 8 men, distributed among Economics (4), Administration (8), and

Accounting (9). These figures represent a 10 percent accreditation rate relative to the entire faculty body of the Division of Economic-Administrative Sciences, which comprises 202 teachers (both full-time and part-time).

The requirements to complete the course were as follows: attendance at least three out of five in-person sessions, completion and submission of assigned activities through the Microsoft Teams tasks area by December 13, 2022, and completion of the course evaluation upon finishing the program.

## 4. Results

At the conclusion of the course, participants were asked to complete an evaluation via a Microsoft Forms questionnaire consisting of eight questions: 1) How would you quantitatively rate the course? 2) How do you rate the course activities overall? 3) What aspects of the course did you like most, and why? 4) (Repeated question, likely a typo) What aspects of the course did you like most, and why? 5) General opinion about the course content, activities, methodology, and delivery; 6) How do you think the course could be improved? (Suggestions); 7) Would you be interested in further deepening your training on Emotional Well-being? 8) On which topics of Emotional Well-being would you like the University of Sonora to continue offering training?

The overall quantitative evaluation of the individual sessions received very high scores. Only 10 percent of the teachers rated the course with an 80, while the remaining 90 percent gave it a perfect score of 100. Among the general activity evaluations, participants highlighted that all topics addressed during the intervention were undoubtedly useful and relevant, and emphasized the need to study well-being more broadly.

The aspects that participants most appreciated were the opportunity to deepen their knowledge of theoretical concepts, as most had interest but insufficient information beforehand. They also noted that the activities, participation, interaction, and feedback among colleagues helped them gain greater self-awareness. The activities involving various questionnaires, especially the VIA survey, were mentioned as highly valuable in helping them understand and integrate the theoretical elements covered earlier, playing a key role in their reflection and self-knowledge process. Several participants agreed that the final session, focused on group music therapy, was the most enjoyable, allowing them to relax and connect more deeply with themselves and their peers.

Most participants expressed overall satisfaction with the course, although some noted that despite the relevance of the topics, the allotted time was insufficient. They also suggested that the course schedule and timing could be improved to avoid conflicts with end-of-semester pressures and other commitments, such as grade submissions. The least favored activities were the questionnaire responses, particularly the VIA, which is the longest.

Regarding their general opinion of the course, most considered the content and methodology highly relevant and appropriate. Some expressed interest in expanding the course with more practical activities. For improving the course, suggestions included allocating more time both in class and for extracurricular activities to better explore and deepen the topics, making sessions more practical, interactive, and dynamic, and designing more visually engaging presentations. Participants also recommended regularly updating institutional and statistical information in the content, providing additional bibliographic or support materials on the topics, and dedicating more time to sessions that warrant it. The vast majority of faculty expressed interest in continuing to deepen their training on emotional well-being, with only one person stating otherwise.

## 5. Conclusions

Once the process of designing, grounding, implementing, and evaluating the intervention was completed, it is time to conclude with the final reflections that arise from it. I would like to start by mentioning that both the general objective and the specific objectives have been met. By analyzing the content covered, the activities carried out, and the results of the session evaluations, we can say that the implementation project as a whole was successfully achieved. However, like any activity we undertake, it is always open to improvement.

Regarding the practical experience of the intervention at the time we carried it out, it was a challenge, primarily because it had to be conducted

during the last semester of 2022, and we had to secure approval from all the relevant authorities to deliver it within that period. I believe that these experiences help us develop skills such as patience and the search for alternative solutions when faced with different problems that may arise during any intervention. They undoubtedly help us practice assertive responses to such situations.

Beyond all the theoretical learning developed throughout the program, I consider the most relevant element for carrying out the implementation was undoubtedly developing in the teachers the first three emotional competencies proposed by GROP: awareness, regulation, and emotional autonomy. These competencies are necessary before designing any intervention proposal. This particular intervention focused on the fifth and final competency life skills and well-being so the content and activities centered on these areas. It is worth noting that although this proposal was aimed at the teachers of the DCEA at the University of Sonora where it was conducted, it can undoubtedly be implemented in any other department or faculty within the same university community, adjusting a couple of sessions to deepen the practical actions currently carried out institutionally related to promoting well-being among the university community, as well as incorporating the specific results of well-being measurements in Mexico.

Another important element highlighted by some teachers during a couple of sessions was that a fundamental strategy to achieve greater openness from participants is, without a doubt, sharing personal experiences. We put this into practice, and it was important to enable them to do so. It was a deep and meaningful experience for everyone. This was especially true in the final session, where teachers freely shared with their colleagues their impressions of the course overall and their experience of the last session. The comments in the evaluations confirmed what was felt during the sessions and written down: what they liked most and considered most important was sharing reflections about themselves openly in front of their peers, also presenting aspects about themselves that others usually do not know both positive and negative.

Another relevant point to highlight as part of improvements for a possible future intervention is making adjustments to the content and duration. Regarding session length, for example, the VIA personal strengths test could be replaced by a shorter version with fewer items, since, although it is crucial for the intervention, completing all 240 items requires considerable time. Regarding content, the main aspect that could be modified, according to the teachers' observations, is the format of the PowerPoint presentations, making them more visually appealing and with less text. Another fundamental aspect to better use the limited session time would be to administer the various questionnaires after the theoretical session.

The greatest satisfaction from conducting this intervention came from the comments and experiences regarding the positive impact it had on each teacher who participated, who are undoubtedly the main protagonists and beneficiaries of this entire project. Finally, it should be noted that the course objectives were achieved, as the academic staff acquired broader knowledge about the various aspects that comprise well-being, especially its measurement, primarily subjective well-being.

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