

ISSN 2523-2495

Volume 6, Issue 16 — July — December — 2022

# Journal University Management

ECORFAN®

## **ECORFAN-Perú**

### **Editor in Chief**

GUZMÁN - HURTADO, Juan Luis. PhD

### **Executive Director**

RAMOS-ESCAMILLA, María. PhD

### **Editorial Director**

PERALTA-CASTRO, Enrique. MsC

### **Web Designer**

ESCAMILLA-BOUCHAN, Imelda. PhD

### **Web Designer**

LUNA-SOTO, Vladimir. PhD

### **Editorial Assistant**

TREJO-RAMOS, Iván. BsC

### **Philologist**

RAMOS-ARANCIBIA, Alejandra. BsC

## **Journal University Management,**

Volume 6, Issue 16, December 2022, is a magazine published every six months by ECORFAN-Peru. La Raza Av. 1047 No.-Santa Ana, Cusco-Peru. Postcode: 11500. WEB: [www.ecorfan.org/republicofperu](http://www.ecorfan.org/republicofperu), [revista@ecorfan.org](mailto:revista@ecorfan.org). Editor in Chief: GUZMÁN - HURTADO, Juan Luis. PhD. ISSN: 2523-2495. Responsible for the last update of this issue of the ECORFAN Informatics Unit. ESCAMILLA-BOUCHÁN Imelda, LUNA-SOTO, Vladimir, updated June 30, 2022.

The views expressed by the authors do not necessarily reflect the views of the publisher.

The total or partial reproduction of the contents and images of the publication is strictly prohibited without the permission of the National Institute for the Defense of Competition and Protection of Intellectual Property.

# **Journal University Management**

## **Definition of Journal**

### **Scientific Objectives**

Support the international scientific community in its written production Science, Technology and Innovation in the Field of Social Sciences, in Subdisciplines University school management, management of university academic counseling, elements and conditions for reform in university school management, specific management models for each university context, inclusion as a fundamental tool for attending university diversity.

ECORFAN-Mexico SC is a Scientific and Technological Company in contribution to the Human Resource training focused on the continuity in the critical analysis of International Research and is attached to CONACYT-RENIICYT number 1702902, its commitment is to disseminate research and contributions of the International Scientific Community, academic institutions, agencies and entities of the public and private sectors and contribute to the linking of researchers who carry out scientific activities, technological developments and training of specialized human resources with governments, companies and social organizations.

Encourage the interlocution of the International Scientific Community with other Study Centers in Mexico and abroad and promote a wide incorporation of academics, specialists and researchers to the publication in Science Structures of Autonomous Universities - State Public Universities - Federal IES - Polytechnic Universities - Technological Universities - Federal Technological Institutes - Normal Schools - Decentralized Technological Institutes - Intercultural Universities - S & T Councils - CONACYT Research Centers.

### **Scope, Coverage and Audience**

Journal University Management is a Journal edited by ECORFAN-Mexico S.C in its Holding with repository in Republic of Peru, is a scientific publication arbitrated and indexed with semester periods. It supports a wide range of contents that are evaluated by academic peers by the Double-Blind method, around subjects related to the theory and practice of University school management, management of university academic counseling, elements and conditions for reform in university school management, specific management models for each university context, inclusion as a fundamental tool for attending university diversity with diverse approaches and perspectives , That contribute to the diffusion of the development of Science Technology and Innovation that allow the arguments related to the decision making and influence in the formulation of international policies in the Field of Social Sciences. The editorial horizon of ECORFAN-Mexico® extends beyond the academy and integrates other segments of research and analysis outside the scope, as long as they meet the requirements of rigorous argumentative and scientific, as well as addressing issues of general and current interest of the International Scientific Society.

## **Editorial Board**

ROSILLO-MARTÍNEZ, Alejandro. PhD  
Universidad Carlos III de Madrid

TORRES - HERRERA, Moisés. PhD  
Universidad Autónoma de Barcelona

CAMPOS - QUIROGA, Peter. PhD  
Universidad Real y Pontifica de San Francisco Xavier de Chuquisaca

CUBÍAS-MEDINA, Ana Elizabeth. PhD  
Universidad Carlos III de Madrid

RAMÍREZ - MARTÍNEZ, Ivonne Fabiana. PhD  
Universidad Andina Simón Bolívar

FRANZONI - VELAZQUEZ, Ana Lidia. PhD  
Institut National des Télécommunications

CHAPARRO, Germán Raúl. PhD  
Universidad Nacional de Colombia

NIÑO - GUTIÉRREZ, Naú Silverio. PhD  
Universidad de Alicante

ARANCIBIA - VALVERDE, María Elena. PhD  
Universidad San Francisco Xavier de Chuquisaca

POSADA - GÓMEZ, Rubén. PhD  
Institut National Polytechnique de la Lorraine

## **Arbitration Committee**

HERRERA - SÁNCHEZ, Gustavo. PhD  
Universidad Tecnológica de Puebla

IBARRA - RIVAS, Luis Rodolfo. PhD  
Universidad Autónoma del Estado de Morelos

ESCALETA - CHÁVEZ, Milka Elena. PhD  
Universidad Autónoma de San Luis Potosí

AHUMADA - TELLO, Eduardo. PhD  
Universidad Iberoamericana del Noroeste

ESCALANTE - FERRER, Ana Esther. PhD  
Universidad Autónoma del Estado de Morelos

ESPINOZA - VALENCIA, Francisco Javier. PhD  
Instituto Pedagógico de Posgrado en Sonora

GARCÍA - VILLALOBOS, Alejandro Rodolfo. PhD  
Universidad Cuauhtémoc

ARCOS - VEGA, José Luis. PhD  
Universidad Iberoamericana

DOMÍNGUEZ - GUTIÉRREZ, Silvia. PhD  
Universidad de Guadalajara

HERNÁNDEZ - LARIOS, Martha Susana. PhD  
Universidad Cuauhtémoc

LINAREZ - PLACENCIA, Gildardo. PhD  
Centro Universitario de Tijuana

## **Assignment of Rights**

The sending of an Article to Journal University Management emanates the commitment of the author not to submit it simultaneously to the consideration of other series publications for it must complement the Originality Format for its Article.

The authors sign the Authorization Format for their Article to be disseminated by means that ECORFAN-Mexico, S.C. In its Holding Republic of Peru considers pertinent for disclosure and diffusion of its Article its Rights of Work.

## **Declaration of Authorship**

Indicate the Name of Author and Coauthors at most in the participation of the Article and indicate in extensive the Institutional Affiliation indicating the Department.

Identify the Name of Author and Coauthors at most with the CVU Scholarship Number-PNPC or SNI-CONACYT- Indicating the Researcher Level and their Google Scholar Profile to verify their Citation Level and H index.

Identify the Name of Author and Coauthors at most in the Science and Technology Profiles widely accepted by the International Scientific Community ORC ID - Researcher ID Thomson - arXiv Author ID - PubMed Author ID - Open ID respectively.

Indicate the contact for correspondence to the Author (Mail and Telephone) and indicate the Researcher who contributes as the first Author of the Article.

## **Plagiarism Detection**

All Articles will be tested by plagiarism software PLAGSCAN if a plagiarism level is detected Positive will not be sent to arbitration and will be rescinded of the reception of the Article notifying the Authors responsible, claiming that academic plagiarism is criminalized in the Penal Code.

## **Arbitration Process**

All Articles will be evaluated by academic peers by the Double-Blind method, the Arbitration Approval is a requirement for the Editorial Board to make a final decision that will be final in all cases. MARVID® is a derivative brand of ECORFAN® specialized in providing the expert evaluators all of them with Doctorate degree and distinction of International Researchers in the respective Councils of Science and Technology the counterpart of CONACYT for the chapters of America-Europe-Asia- Africa and Oceania. The identification of the authorship should only appear on a first removable page, in order to ensure that the Arbitration process is anonymous and covers the following stages: Identification of the Journal with its author occupation rate - Identification of Authors and Coauthors - Detection of plagiarism PLAGSCAN - Review of Formats of Authorization and Originality-Allocation to the Editorial Board- Allocation of the pair of Expert Arbitrators-Notification of Arbitration -Declaration of observations to the Author-Verification of Article Modified for Editing-Publication.

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

### **Knowledge Area**

The works must be unpublished and refer to topics of university school management, management of university academic counseling, elements and conditions for reform in university school management, specific management models for each university context, inclusion as a fundamental tool for attending university diversity and other topics related to Social Sciences.

## Presentation of Content

As first article we present, *School learning barriers in higher education students*, by SÁNCHEZ-RIVERA, Lilia, ESPERICUETA-MEDINA, Marta Nieves, MUÑOZ-LÓPEZ, Temístocles and LÓPEZ-CUELLAR, Leonardo Daniel, with adscription in the Universidad Autónoma de Coahuila, as second article we present, *Comparative analysis dimensioned by sex on socioeconomic attributes, vocational orientation and gender perspective in career selection, Fresnillo, Zacatecas, Mexico, 2021*, by BARRÓN-PALOS, Eduardo Javier, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania, with adscription in the Universidad Autónoma de Zacatecas, as third article we present, *Perception of the conflict in the students of the Universidad Tecnológica de León*, by HERNÁNDEZ-CASTILLO, Adolfo, ARREDONDO-MUÑOZCANO Ana María del Carmen, PADILLA-GUTIÉRREZ Luz Aurora and GONZÁLEZ-ARREDONDO, Liliana, with adscription in the Universidad Tecnológica de León, as last article we present, *Good practices in the self-transformation of the engineering student in continuous improvement projects*, by PALOMARES-RUIZ, María Blanca Elizabeth, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ -VILLARREAL, Esteban, with adscription at the Universidad Autónoma de Nuevo León.

## Content

| Article  | Page  |
|--|-------|
| <b>School learning barriers in higher education students</b><br>SÁNCHEZ-RIVERA, Lilia, ESPERICUETA-MEDINA, Marta Nieves, MUÑOZ-LÓPEZ, Temístocles and LÓPEZ-CUELLAR, Leonardo Daniel<br><i>Universidad Autónoma de Coahuila</i>  | 1-4   |
| <b>Comparative analysis dimensioned by sex on socioeconomic attributes, vocational orientation and gender perspective in career selection, Fresnillo, Zacatecas, Mexico, 2021</b><br>BARRÓN-PALOS, Eduardo Javier, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania<br><i>Universidad Autónoma de Zacatecas</i> | 5-19  |
| <b>Perception of the conflict in the students of the Universidad Tecnológica de León</b><br>HERNÁNDEZ-CASTILLO, Adolfo, ARREDONDO-MUÑOZCANO Ana María del Carmen, PADILLA-GUTIÉRREZ Luz Aurora and GONZÁLEZ-ARREDONDO, Liliana<br><i>Universidad Tecnológica de León</i>   | 20-28 |
| <b>Good practices in the self-transformation of the engineering student in continuous improvement projects</b><br>PALOMARES-RUIZ, María Blanca Elizabeth, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ -VILLARREAL, Esteban<br><i>Universidad Autónoma de Nuevo León</i>   | 29-35 |



## School learning barriers in higher education students

### Barreras de aprendizaje escolar en estudiantes de educación superior

SÁNCHEZ-RIVERA, Lilia†\*, ESPERICUETA-MEDINA, Marta Nieves, MUÑOZ-LÓPEZ, Temístocles and LÓPEZ-CUELLAR, Leonardo Daniel

*Universidad Autónoma de Coahuila, Faculty of Science, Education and Humanities, Mexico.*

ID 1<sup>st</sup> Author: *Lilia, Sánchez-Rivera* / ORC ID: 0000-0001-9468-2599, Researcher ID Thomson: T-1404-2018, CVU CONACYT ID: 613195

ID 1<sup>st</sup> Co-author: *Marta Nieves, Espericueta-Medina* / ORC ID: 0000-0002-4924-7632, Researcher ID Thomson: T-1500-2018, CVU CONACYT ID: 372705, arXiv Author ID: Espericueta2018

ID 2<sup>nd</sup> Co-author: *Temístocles, Muñoz-López* / ORC ID: 0000-0003-4940-5730, Researcher ID Thomson: X-7834-2018, CVU CONACYT ID: 202437

ID 3<sup>rd</sup> Co-author: *Leonardo Daniel, López-Cuellar* / ORC ID: 0000-0001-9415-2470

DOI: 10.35429/JUM.2022.16.6.1.4

Received July 10, 2022; Accepted December 30, 2022

#### Abstract

The main objective of this article was to compare the perception that the college student has with the scholar learning barriers. The methodology that was used was the quantitative, observational, transversal, descriptive and comparative. The compilation of this info was carried out through an instrument with 11 learning barriers questions of the academic environment, with 320 surveys in phase 3 of the Covid-19 Pandemic, applied to the faculties of Ciencia, Educación y Humanidades, Sistemas, Ingeniería, Mercadotecnia and Jurisprudencia of the Universidad Autónoma de Coahuila, the method of sampling that was utilized was not probabilistic through the strategy of sampling for convenience. The statistical techniques that were applied were the descriptive through frequencies and percentages, comparative with Kruskal-wallis method for independent samples and Mann Whitney U for two independent samples. The contribution of the study lies in that the students from faculty de Sistemas differ from the ones of the faculties of Mercadotecnia, Educación, Ingeniería and jurisprudencia in that they consider in large extent that the educational and pedagogical practices during the hybrid modality for the COVID-19 Lockdown, has been a learning barrier.

**Learning Barriers, School, College Education.**

#### Resumen

El objetivo general del presente artículo fue contrastar la percepción que tiene el estudiantado de educación superior con las barreras de aprendizaje escolar, la metodología que se utilizó fue cuantitativa, observacional, transversal, descriptiva y comparativa. La recopilación de la información se realizó a través de un instrumento con 11 reactivos de barreras de aprendizaje del ámbito escolar, con 320 encuestas en la fase 3 de la pandemia por el COVID-19, aplicadas a las facultades de Ciencia, Educación y Humanidades, Sistemas, Ingeniería, Mercadotecnia y Jurisprudencia de la Universidad Autónoma de Coahuila, el método de muestreo que se utilizó fue no probabilístico mediante la estrategia de muestreo por conveniencia. las técnicas estadísticas que se utilizaron fueron la descriptiva por medio de frecuencias y porcentajes, comparativo con la kruskal-Wallis para muestras independientes y U de Mann Whitney para dos muestras independientes. La contribución del estudio radica en que los estudiantes de la Facultad de Sistemas difieren del estudiantado de las Facultades de Mercadotecnia, Educación, Ingeniería y jurisprudencia; consideran que en mayor medida que la calidad educativa y las prácticas pedagógicas durante el proceso de modalidad híbrida por el confinamiento COVID-19, han sido una barrera de aprendizaje.

**Barreras de aprendizaje, escolar, educación superior**

**Citation:** SÁNCHEZ-RIVERA, Lilia, ESPERICUETA-MEDINA, Marta Nieves, MUÑOZ-LÓPEZ, Temístocles and LÓPEZ-CUELLAR, Leonardo Daniel. School learning barriers in higher education students. Journal University Management. 2022. 6-16:1-4.

\* Correspondence of the Author (E-mail: lsr14712@uadec.edu.mx)

† Researcher contributing as first author.

## Introduction

This article shows the perception of higher education students about the barriers to school learning that they have and are facing due to the COVID-19 pandemic; which are very varied and not precisely because of a disability condition.

The concepts of diversity and inclusion are associated with all students, whether they have Special Educational Needs (SEN) or not, since it deals with the barriers that children and young people experience in the educational and social environment, and with the forms of marginalization, exclusion and poor performance to which they may be exposed (Ainscow 2009; Azorín et al., 2017; Blanco, 2006; Blanco & Duk 2019; García, 2009; Rosselló, 2010; cited in Pérez & Uribe 2022).

The statistical analyzes carried out serve to observe the needs of the student body, and from this, build solutions in favor of quality and efficiency in education.

With working hypothesis: There are differences of opinion among higher education students regarding learning barriers.

Now, it is known that the coronavirus of 2019 spread to the whole world, which resulted in the suspension of essential activities such as school activities that contributed to learning barriers.

Regarding learning barriers, in the first instance the concept of Booth and Ainscow (2015, p. 9) is presented, the essence of their educational approaches for a few decades, it continues to be a central axis to understand the disadvantages and inequalities that exist. they are forming in the educational system, in many cases, by limiting participation and the possibilities of learning, thus achieving the depersonalization of the teaching to which they allude Echeita & Domínguez (2011): "do all the same, at the same time, with the same means or appealing to identical forms of motivation" (p. 29).

Also, according to the authors (Corrales et. al., 2017) comment that learning barriers can be conceptualized as the presence of contextual factors that hinder or limit full access to education and learning opportunities for children and young people. (p.5)

It should be noted that Covarrubias (2019) detects a classification of educational limitations, identifying that barrier can occur in different contexts or be generated by the different actors that surround the students.

Recent guidelines from the European Student Council (2017) emphasize that equal opportunities are crucial but not enough, because it is necessary to pursue "equity" in the objectives, contents and teaching methodologies. However, the results of the study by Barron (2022) show that the narratives, experience and academic training of teachers reveal that the greater the academic training in the field of inclusion, diversity and evaluation of learning, the practice of teaching is becoming more efficient, flexible and reflective in a diverse and inclusive setting.

## Methodology to develop

The information was collected through an instrument with 11 items, with the question: on a scale of 0-10, a measure that considers that during the hybrid modality process due to the COVID-19 confinement, the following aspects of the field school have been a barrier in their learning:

inequity in learning, school desertion, work activity of students that is spliced with class schedules, diagnosis to identify if students have the possibility of learning under the virtual modality, measures implemented by the educational authorities for learning, quality of the teaching, pedagogical practice, reduction of attachment to school, educational practices established at the appropriate times, normal schedules for virtual classes, virtual tutorial support, additional expenses when carrying out education under the virtual and face-to-face modality. in addition to 3 general data, age, gender and faculty.

320 surveys were applied in phase 3 of the COVID-19 pandemic, to the faculties of Ciencia, Educación y Humanidades, Sistemas, Ingeniería, Mercadotecnia and Jurisprudencia de la Universidad Autónoma of Coahuila the sampling method used was non-probabilistic through the convenience sampling strategy. the statistical techniques that were used were the descriptive one by means of frequencies and percentages, comparative with the kruskal-Wallis for independent samples and U de Mann Whitney for two independent samples.

## Results

### Descriptive analysis. frequencies and percentages

From a total of 320 subjects, the reading of frequencies and percentages is presented from the processing of 3 general data questions: gender, age and faculty. The sample is characterized by 56.25% being female, which represents a frequency of 180 and 43.75% being male, with a total of 140 subjects, aged between 17 and 47 years; being the ages of 19 and 20 years with the highest percentage, which is verified with 46.88%.

The sample is made up of university students attached to five faculties of the Universidad Autónoma de Coahuila, among which are the Faculty de Ciencia, Educación and Humanidades with 24.06% (n=77); the Faculty of Ingeniería that registers el 11.88% (n=38); the Faculty of Jurisprudencia with 5% (n=16); the Faculty of Mercadotecnia that denotes a percentage of 25.94% (n=83) and finally, the

Faculty of Sistemas, where the largest number of students is located, which is manifested in a 33.13% (n=106).

## Comparative Analysis

### Kruskal-Wallis Test for Independent Samples

The medians are compared and the statistical processing of the Kruskal-Wallis test is performed for several independent samples, with a significance level of  $p \geq 0.05$ .

The significant differences between the perception of the students of 5 faculties with the barriers of school learning from the educational quality and the pedagogical practice are shown.

#### - Educational quality

The average ranges of all the observations of the faculties are: Sistemas Md=60, Mercadotecnia Md=38, Educación Md=37, Ingeniería Md=25 and Jurisprudencia Md=4.

It is inferred that the students of the Faculty of Systems, consider to a greater extent that the educational quality during the hybrid modality process due to the COVID-19 confinement, has been a learning barrier.

#### - Pedagogical practice

The ranges of the medians of the faculties are: Sistemas Md=66, Mercadotecnia Md=44, Educación Md=39, Ingeniería Md=27 and Jurisprudencia Md=4.

It is inferred that the students of the Faculty of Systems, consider to a greater extent that the pedagogical practice during the hybrid modality process during the COVID-19 confinement, has been a learning barrier.

### Prueba U of Mann-Whitney for two Independent Samples

In order to know the faculties that show a significant difference with the barriers of school learning, the contrast test is carried out for two independent samples. U of Mann-Whitney, with a significance level of  $p \geq 0.05\%$ .

The first contrast is made with of Mercadotecnia and Faculty of Sistemas with the learning barriers.

The Faculty of Sistemas according to the sum of ranks shows that they consider to a greater extent than educational quality R=8653, pedagogical practices R=8688 and normal schedules for classes during the hybrid modality process R=8771 during to confinement COVID-19, have been data learning barriers that differ with the Faculty of Mercadotecnia.

The second contrast is made with the Faculty of Ciencia, Educación y Humanidades and the Facultad of Ingeniería with the Faculty of Marketing. The Faculty the Ciencia, Educación and Humanidades according to the sum of ranks shows that they consider to a greater extent than the pedagogical practices R= 4798 during the COVID-19 confinement, they have been learning barriers data that differ with the Faculty of Ingeniería.

## Conclusions

The working hypothesis is affirmed: There are differences of opinion among higher education students regarding learning barriers.

It is concluded that the students of the Faculty of Sistemas differ from the student body of the faculties of Mercadotecnia, Educación, Ingeniería and jurisprudencia; they consider to a greater extent that educational quality and pedagogical practices during the hybrid modality process due to the COVID-19 confinement have been a learning barrier.

In addition, the Faculty of Mercadotecnia perceives to a lesser extent than the educational quality it has received, in addition to the pedagogical actions that this student community has been granted and their established schedules have been barriers to their learning.

It is noted that the Faculty of Ingeniería considers to a lesser extent that pedagogical practices have been barriers to their learning, unlike the student body of the Faculty of Ciencia, Educación and Humanidades.

Due to the above, it is proposed that, in each faculty of the Universidad Autónoma of Coahuila, a diagnosis of needs be carried out with the purpose of making it clear which are the aspects that the student body detects as educational quality and pedagogical practice, so that from the detection of needs begins with actions that reduce those factors that affect learning barriers.

## References

Booth, T. & Ainscow, M. (2015). Guía para la educación inclusiva. Desarrollar el aprendizaje y la participación en los centros escolares. FUHEM/ OEI. [http://www.fuhem.es/media/educacion/File/Guia\\_Educacion\\_Inclusiva\\_FUHEM.pdf](http://www.fuhem.es/media/educacion/File/Guia_Educacion_Inclusiva_FUHEM.pdf)

Consejo de Estudiantes (2017), Draft conclusions of the Council and the representatives of the governments of the member states. [file:///Users/lily/Downloads/conclusions%20of%20the%20council%20and%20of%20the%20representatives-c\\_06220170225en00030007.pdf](file:///Users/lily/Downloads/conclusions%20of%20the%20council%20and%20of%20the%20representatives-c_06220170225en00030007.pdf)

Corrales, A., Fernández, O. y Salazar, A. (2017). Barreras de aprendizaje: percepción de estudiantes en situación de discapacidad intelectual de un liceo de la comuna de Lebu, Región del Bio Bio. Universidad de Concepción. [http://repositorio.udec.cl/bitstream/11594/3036/4/Tesis\\_Barreras\\_de\\_aprendizaje\\_percepcion\\_de\\_estudiantes\\_en\\_situacion\\_de\\_discapacidad\\_intelectual.Image.Marked.pdf](http://repositorio.udec.cl/bitstream/11594/3036/4/Tesis_Barreras_de_aprendizaje_percepcion_de_estudiantes_en_situacion_de_discapacidad_intelectual.Image.Marked.pdf)

Covarrubias Pizarro, P. (2019). Barreras para el aprendizaje y la participación: una propuesta para su clasificación. ensech.edu. <http://ensech.edu.mx/pdf/maestria/libro4/TP04-2-05-Covarrubias.pdf>

Echeita, G. & Domínguez, A. B. (2011). Educación inclusiva. Argumento, caminos y encrucijadas. Aula. Revista de Pedagogía de la Universidad de Salamanca, 17, 23-35. <https://dialnet.unirioja.es/servlet/articulo?codigo=3770733>

Pérez, C. R., & Uribe, N. (2022). Representaciones Sociales Docentes sobre la Evaluación Educativa en Chile, ¿Aporte o Barrera para el Proceso de Inclusión Escolar? Revista Latinoamericana de Educación Inclusiva, 16(1), 113-130. <http://www.rinace.net/rlei/numeros/vol16-num1/art6.pdf>

Piffre de Voban Barrón, N. (2022). Aulas inclusivas en educación superior: creencias y prácticas en la formación de formadores. <https://repositorio.uc.cl/xmlui/bitstream/handle/11534/64491/TFE%20Entrega%20final.docx.pdf?sequence=1>.

## Comparative analysis dimensioned by sex on socioeconomic attributes, vocational orientation and gender perspective in career selection, Fresnillo, Zacatecas, Mexico, 2021

### Análisis comparativo dimensionado por sexos sobre atributos socioeconómicos, de orientación vocacional y perspectiva de género en la selección de carrera, Fresnillo, Zacatecas, México, 2021

BARRÓN-PALOS, Eduardo Javier\*†, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania

*Universidad Autónoma de Zacatecas, Unidad Académica Preparatoria Plantel III, Calle niño Artillero sin número, Fresnillo, Zacatecas, México.*

ID 1st Author: *Eduardo Javier, Barrón-Palos* / ORC ID: 0000-0002-6381-4664, Researcher ID Thomson: E-6185-2019, CVU CONACYT ID: 940129

ID 1st Co-author: *María del Consuelo, Salinas-Aguirre* / ORC ID: 0000-0002-6542-1813, Researcher ID Thomson: S-9244-2018, CVU CONACYT ID: 615635

ID 2nd Co-author: *Sergio Elías, Uribe-Sierra* / ORC ID 0000-0002-8869-9690, CVU CONACYT ID: 561127

ID 3rd Co-author: *Fatima Stephania, Sierra-Castro* / ORC ID: 0000-0001-8416-822X, CVU CONACYT ID: 1124663

DOI: 10.35429/JUM.2022.16.6.5.19

Received July 15, 2022; Accepted December 30, 2022

#### Abstract

With the objective of comparing the main attributes in the choice of career for the municipality of Fresnillo, Zacatecas, Mexico, 2021. A study with a cross-sectional quantitative approach was carried out. Using a comparative analysis and taking into account gender as a grouping variable, using the T-Student parametric hypothesis test for independent samples, 159 attributes were compared on a 0-10 ratio scale in 445 subjects. As a preview of the results, it is noteworthy that the theoretical dimension with the most surprises is not the gender expectation in the choice of career, an understandable assumption if the grouping variable is gender. The hypothesis tests showed greater asymmetries during the verification on the student socioeconomic status between women and men, since, in 16 of 19 attributes measured, equivalent to 68.42% of the items, the marks of significance and low female averages required rejecting the hypothesis of nullity. With the above, it can be inferred that women are today the majority in the universities of Fresnillo, because an important segment of them is circumscribed to a socioeconomic level below the average, meanwhile, the men who access higher education, belong mostly at medium and high socioeconomic levels.

**Socioeconomic attributes in career choice, Vocational guidance and career options, Gender perspective in career selection**

#### Resumen

Con el objetivo de comparar los atributos principales en la elección de carrera para el municipio de Fresnillo, Zacatecas, México, 2021. Se elaboró un estudio con enfoque cuantitativo de corte transversal. Utilizando un análisis comparativo y teniendo en cuenta al sexo como variable de agrupación, empleando prueba de hipótesis paramétrica T –Student para muestras independientes, se cotejaron 159 atributos en escala de razón 0-10 a 445 sujetos. Como adelanto a los resultados, llama la atención, que la dimensión teórica con más sobresaltos no es la expectativa de género en la elección de carrera, suposición entendible si es sexo la variable de agrupación. Las pruebas de hipótesis arrojaron mayores asimetrías durante la compulsa sobre el estatus socioeconómico estudiantil entre mujeres y hombres, ya que, en 16 de 19 atributos medidos, equivalente al 68.42% de los ítems, las marcas de significancia y bajos promedios femeninos exigían rechazar la hipótesis de nulidad. Con lo anterior, se puede inferir, que las mujeres son hoy mayoría en las universidades de Fresnillo, porque un segmento importante de ellas se circunscribe a un nivel socioeconómico por debajo de la media, entretanto, los varones que acceden a la educación superior pertenecen mayoritariamente a niveles socioeconómicos medios y altos.

**Atributos socioeconómicos en la elección de carrera, Orientación vocacional y opciones de carrera, Perspectiva de género en la selección de carrera**

**Citation:** BARRÓN-PALOS, Eduardo Javier, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania. Comparative analysis dimensioned by sex on socioeconomic attributes, vocational orientation and gender perspective in career selection, Fresnillo, Zacatecas, Mexico, 2021. Journal University Management. 2022. 6-16:5-19.

† Researcher contributing as first author.

## Introduction

At the national level, studies on the percentage of women enrolled in higher education have been decreasing in recent years, since, with the exception of a few engineering courses, the female gender prevails. In the municipality of Fresnillo, Zacatecas, Mexico, 80.7% of those surveyed said that women are in the majority in their classrooms. This new configuration is replicated with some fluctuations across the country, leading some to throw caution to the wind, suggesting that the problem of women's access to higher education has been solved. However, in detail, women in higher education report very different indicators and problems than men in terms of entry and retention. In order to locate significant differences between the responses of the gender groupings to the perceptions of the most important attributes in their career choice, the following comparative analysis is presented, which uses the parametric Student's t-test for independent samples as a segregation tool to accept or reject the researcher's hypothesis between the attributes. The instrument on the university dilemma examined consists of 159 items on a scale of zero to ten, broken down into six theoretical dimensions: 1) Socio-economic status of the student and career choice; 2) Job market for professionals in career choice; 3) Attitudes, aptitudes and academic security in career selection; 4) The role of guidance and the guidance counsellor in career choice; 5) Gender perspective in career choice; 6) Cultural elements in career choice, in addition, to an academic panel on relevant data that may well serve future aggregations. For each dimension or theoretical axis, we present tables of our own elaboration in the SPSS statistical package, preceded by the relevant readings on the elements of homogeneity and asymmetry between the sexes. All respondents, regardless of sex, place their social stratum above 8 units, but this perception is in stark contrast to the monthly family income, which amounts to 6.95 for women and 7.46 in male in our scale, detailing, both groups present a median of 7 with iconic platycurtic form and 4 groups of opinion, one of these corros in women qualifies very low the item, placing the average below the median, by the previous thing, it is possible to affirm that the table in is not low socioeconomic matter, and in spite of it, the women are majority in the universities of Fresnillo, some of them, trying at every step to overcome an adverse economic condition of beginning.

## Student socio-economic status and the labour market for professionals in career choice

Research linking economics and career choice mostly presents two classical foundations on opposing conceptual viewpoints. In the first place, considering longevity as a taxonomic basis, and almost always covered by the Marxist paradigm, there are works that hold in high esteem the socio-economic level of the student as an attribute in the choice of career, permanence in the degree and/or academic performance, which conclude by pointing out the urgency to widen the offer of public education as a lever of development and policy in favour of equality (Klubitschko, D., D., Klubitschko, D. and D.): (Klubitschko, D 1980), (Donoso S, 2007), (Garbanzo,G 2007) and (Armenta, 2007), (Di gresia L, 2009), (Chiroleu, A, 2009), (Carrasco, E 2014), Maldonado, M. P. (2006). This orientation dominated the production of this category of studies until the 1990s, after which its production became marginalised in opposition to the neoclassical view recently imposed on the continent. Although they are still being engineered today, socio-economic characterisations of students have been stripped of ideologies of greater political action, and are now approached as an integral part of multidisciplinary studies on multifaceted problems with holistic theoretical dimensions that transcend the young people's stay in the classroom, and even the formal knowledge learnt during the degree, also addressing, so to speak, labour resilience, as can be seen in: Vercellino, S., Gibelli, T. I. & Chironi, J. M. (2022), García Hernández, F. R., & Quevedo-Aguado, M. P. (2022). Debeljuh, P., Foutel, M., & Torres Carbonell, S. (2022), Santos Miranda Pinto, M., Francisca Monteiro, A., & Meneses Osório, A. J. (2022), Casimiro (2021), Chavez, Y. L., Zumaeta, G. M. P., Tarrillo, J. J. C., & Zea, K. L. H. (2022), Delgado, G. (2006).

At the beginning of the tumultuous nineties, neoliberalism was recently adopted in Latin America as in much of the world. Pragmatic studies of the new paradigm radiated from the new paradigm, with no qualms about social demands of any kind. Gary Becker's theory of human capital suggests a new factor of production, "human capital", as an essential element to increase productivity and competitiveness at various levels, thanks to the proactive participation of individuals prone to changes, not only formal but also attitudinal. Under this mantra, a person or entity acts rationally to the extent that their decisions lead to the maximum benefit in terms of cost, thus, the university career decision is reduced to a merely quantitative matter of economic order, in which elements such as: duration of the degree, cost of the degree, expected future income, labour market in the area, etc., stand out. In this order of ideas we find: (Latesia, 1987), (Cabrera G., 1987), (Bolaños, 2001), (Cavazos, 2003.), (Salas Velasco & Martín-Cobos, 2004), (Vries, 2008), (Jiménez, J., & Salas, M. 1999), (Barrón et al 2021).

### **Attitudes, aptitudes and academic security of the student and the role of guidance and counselling in career choice**

The most prolific area of academic production on this issue is psychology through the branch of vocational guidance. Consequently, it is understandable that the results of articles on guidance are vast and varied. Authors such as (Covarrubias, M L, 2003), find that the family is the main influence on the career decision in the young person, while (González Maura, 2001) affirms that the student's self-determination is imposed on the choice. On the other hand, the writings of (De León & Briones, 2012) place the correlation between interest and aptitudes as an explanatory factor. It should be noted, however, that most of the works tend to focus on the role of adequate guidance as a determinant of a good decision (Camarena, 2009), (Jara, 2010).

"Vocational guidance is a process that aims at awakening vocational interests, adjusting these interests to the work competence of the subject and to the needs of the labour market. The first step of vocational rehabilitation is the choice of a realistic interest that will enable the subject to reach his/her occupational goal (Anthony et al., 1984)". Seen in: Virginia Galilea (ND, p.1).

Bisquerra, (1990, p.1): "guidance is not a one-off process, but a continuous process over time; it is not only addressed to people with special needs, but to everyone. Its objectives are: the development of the person, and the prevention of problems of all kinds; it intervenes through programmes" as seen in: Virginia Galilea (ND, p.1).

This work abstracts This work abstracts two important elements for career and campus selection used in vocational guidance, one for each complex variable of the attributes that we consider more adapted to the factor analysis that will be presented later.

(Allport, 2018) Defines "attitude as a state of mental disposition, organised in such a way as to exert a direct influence on a person's day-to-day behaviour". Whenever we talk about attitude, we need an object either material, an idea, collective or social, towards which to direct our attitude, which can be called attitudinal objective. (Castillero, 2018) Argues that "It receives the name of attitude to the effect of the set of beliefs and values relatively stable over time in the willingness or tendency to act in a certain way or undertake some kind of action." (Correa et al. 2019, P. ND).

Safety should be interpreted as a personal state that allows us to perceive that we move in a space free of real or potential risks, the absence or lack of which can cause various problems and damage. Therefore, we must consider that "safety" is associated with certainty, lack of risk or contingency, since absolute certainty is not possible, the element of risk is always present, regardless of the measures we take, so we must talk about the fact that there will never be a total level of safety. (Montero, 2013, P.205).

### The gender perspective in career choice and other cultural elements

On the gender perspective side, the influence of discrimination to enter traditionally male careers, sexism and neo-sexism, the wage differential between genders at the professional level, the asymmetrical progress in the labour and academic field, are assumed by the branch of feminism that studies the so-called glass ceilings, as an invisible but real barrier to the academic development of young female students and graduates. Within this branch, they are located in the publications concerning cultural components, where gender issues dominate the bibliography. (Torres & Pau, 2011) and their comparison between Spain and Germany on the scientific inclusion of women and their recognition in the workplace, or (Garcia, GP 2002) the exponential growth of women in "masculine" careers after globalisation. Gender Stereotypes in the Faculty of Public Accounting at the Universidad Santo Tomás de Villaviciencio. Castro Villalobos, L. & nciso Cedeño, Y. (2022), are some examples of the state of the art in this niche of study.

The concepts used in the third section of the instrument to dimension the influence of discrimination, sexism and neo-sexism present in career choice, are circumscribed to the theoretical viewpoint on gender analysis, being more specific in the studies on "Glass Ceilings": "Gender analysis is the synthesis between gender theory and the so-called gender perspective derived from the feminist conception of the world and life. This perspective is structured on the basis of ethics and leads to a post-humanist philosophy, because of its critique of the androcentric conception of humanity that left out half of the human race: women. And, despite existing in the patriarchal world, women have actually existed. It is remarkable that humanism has not noticed them. The gender perspective has as one of its aims to contribute to the subjective and social construction of a new configuration based on the re-signification of history, society, culture and politics from women and with women". Lagarde, M (2018, p. ND)

"Two concepts allude to the segmentation and differentiation between women and men. The first is the glass ceiling, which refers to the set of limitations (tacit or veiled) that prevent women from rising to the highest positions of power in organisations (Burin, 1996). The other is the sticky floor, which alludes to the labours that keep women glued to the floor, i.e. everything that prevents them from moving from places traditionally linked to subalternity and care for others." Ranero (2018, p. 85)

In the same order of ideas about situations outside the subject, but which represent obstacles or concrete referents in the university decision, sociology and anthropology, present essays related to the social prestige and cultural relevance of careers in specific regions, (a young man from the desert of Zacatecas who wishes to study marine biology), proximity to the career or area that parents, friends or relatives studied or wish for the high school graduate, and even religiosity as external elements that influence the guidelines that the young person then assumes as his or her own and correct at the time of the decision, although it is worth mentioning that this is a marginal collection in terms of production.

This last complex variable of the study is the narrowest in terms of number of publications, however, within the anthropological and sociological catalogue, the most relevant categories and theoretical currents are evident, which served as a reference in the classification and operational definition of our instrument, and its consequent assignment of measurement scales.

"According to Figueroa de Amorós, (1993) the main factors that intervene are the following (Peñafiel *et al.*, 2019, p.129):

- The social prestige of the career.
- The zeitgeist.
- The coefficient of family traditionality.
- Vital needs.



### Methodological design

With the aim of answering the general question "What are the main gender differences between the attributes for career choice in university students in Fresnillo, Zacatecas, in the year 2021?", and to corroborate the original hypothesis that the greatest asymmetries for career choice lie in the gender perspective. The present research was developed with a quantitative approach and cross-sectional operational orientation. Since most of the items present a 0-10 ratio scale, where no independent variables were manipulated or pilot, operative, control or control groups were established, this is not an experimental research. With a perimetal approach, as the entire population or nature is observed and measured indirectly, through a representative sample with which inferences are subsequently drawn. It falls within the second level of statistical methodology, comparative.

After a judicious theoretical review on the subject of career choice, the six dimensions mentioned above were defined and the research background was shaped, enunciating new elements, rescuing or adapting the existing ones from the qualitative to the quantitative, highlighting some socio-economic, gender (sexism and neo-sexism), cultural and labour market (labour information media) attributes, to later measure and compare. The resulting hybrid was an original instrument of 159 attributes on a 0-10 ratio scale, aggregated as follows: 1) socio-economic status 19 items; 2) labour market 31 items; attitudes, skills and academic security 26 items; importance of vocational orientation 25 items; gender perspective 34 items; cultural elements 24 items.

At the end of 2020, the results of a pilot survey applied to 30 subjects from the Instituto Tecnológico Superior de Fresnillo (ITSF), were tested to verify the internal consistency and universality of the instrument, obtaining .935 Crombach's Alpha, and with the final application to 445 respondents, the same indicator increased to .968 and standardised to .967, with similar metrics for the partitions by gender and theoretical dimension. Based on an estimate of 4,234 high school students in all public universities in Fresnillo at the time of the survey, and according to the formula of Isaac, Stephen and William B. (1996), seen in (Gonzalez,. 2014) it was concluded to conduct 352 surveys, fortunately, 445 subjects were sampled, just over 10% of the population for a 95% confidence level.

However, the online work format prevailing at the time, and the reluctance of most of the authorities of the different academic units and universities, derived from the question on satisfaction with the current career, forced the survey to be extended until May 2021, with the internet being the only medium with the intermediation of social networks.

### Academic panel

As mentioned above, this panel of general data is independent of the theoretical constructs or axes mentioned above, however, in this particular case, it was subjected to the same tests in order to establish differences between the groups. The average current age of female respondents is higher than that of male respondents by .77 units, which is explained by two reasons: the survey was carried out among university students of all grades, and women, even though they are the majority in almost all degree programmes, are more likely to drop out of school for economic reasons and lack of family support. No significant differences are observed in the age of career choice, so that the null hypothesis (H0) is retained, although the average age of choice is high, 16.57 for women and 16.24 for men, which indicates the importance of teaching the subject of vocational guidance in the second year of baccalaureate. There are also no notable disparities in terms of average university and satisfaction with current career, although the latter indicates a low average in either case, just above 5 for males and slightly lower for females.

|   |                             | S | N   | M     | SD   | t     | gl     | Sig.  | H(0) |
|---|-----------------------------|---|-----|-------|------|-------|--------|-------|------|
| A | Age_current_age             | F | 313 | 21.38 | 3.03 | 2.74  | 443.00 | 0.006 | HI   |
|   |                             | M | 132 | 20.61 | 1.77 | 3.36  | 399.25 | 0.001 | HI   |
| B | Age_of_career_choice        | F | 313 | 16.57 | 4.11 | 0.85  | 443.00 | 0.395 | HO   |
|   |                             | M | 132 | 16.24 | 2.61 | 1.01  | 375.65 | 0.311 | HO   |
| C | Average_high_school_average | F | 313 | 8.11  | 1.25 | -3.15 | 443.00 | 0.002 | HI   |
|   |                             | M | 132 | 8.52  | 1.22 | -3.19 | 252.13 | 0.002 | HI   |
| D | College_average             | F | 313 | 8.14  | 0.93 | -0.44 | 443.00 | 0.663 | HO   |
|   |                             | M | 132 | 8.18  | 1.10 | -0.41 | 213.96 | 0.684 | HO   |
| E | Career_Satisfaction         | F | 313 | 4.98  | 3.63 | -0.48 | 443.00 | 0.634 | HO   |
|   |                             | M | 132 | 5.16  | 3.76 | -0.47 | 239.03 | 0.639 | HO   |

Where: F= Female; M= Male; N= Sample size; M= Mean; SD= Standard deviation; t= Student's t-test; gl= degrees of freedom; sig= Significance; H(0)= Statistical decision

**Table 1** Comparative analysis of gender grouping: academic panel  
Source: Own elaboration

Of this first theoretical dimension under examination, the socio-economic status of the student, only in 6 out of 19 variables the null hypothesis is accepted, which obviously reflects significant differences between the sexes in 68.42% of the cases. Among the thirteen discordant variables by economy and sex we observe: 3) Career similar to the mother 8.19 and 8.40 , higher in men; 5) Social stratum of the student, higher by .5 for men; 8) Father's schooling higher in women; 9) Distance from home to the university; 1.53 higher in men; 10) Mother's monthly income, .6 higher in men; 11) Father's monthly income in MXN higher by 1 for men; 12) Total monthly family income in MXN higher in men; 13) Father's monthly income in .5 higher for men; 13) Student food expenses 1.2 higher for men; 15) Fixed cost per semester for men 4.45, is 2.16 higher than for women; 16) Weekly transport costs 1.39 higher for men; 17) Importance of remittances 1.56 higher for women; 18) Importance of remittances for their permanence in the university .86 higher for women; 19) Importance of the economic possibilities of their family in their choice of career, .17 higher for men. As it can be seen, men spend much more on tuition and transportation than women, and considering such differences, it is very likely that some of them arrive at university by car. On the other hand, women exhibit higher averages on indicators classically associated with poverty studies, such as the importance of remittances in the family economy and for staying in university. Male university students enjoy a better socio-economic position than females, as reflected in their income and expenditure.

From these metrics, it can be inferred that female university students overcome economic difficulties in greater proportion than males, to the point of becoming the majority in 80.7% of the classrooms in Fresnillo, Zacatecas. Another relevant point is that the education of the fathers of the female university students' fathers is higher than that of their male counterparts, which supports the assertion that the fathers' education is a positive factor for their daughters to reach higher education.

The variables where women and men show economic homogeneity are: 1) Father in a union in the area where the young person studies; 2) Economic independence; 4) Career similar to the father's, although slightly higher in men; 6) Area of the home; 7) Mother's schooling; 14) Spending on school supplies per period, higher in women by .33%; 15) Spending on school supplies per period, higher in women by .33%; 16) Spending on school supplies per period, higher in men by .33%; 17) Spending on school supplies per period, higher in women by .33%.

| Attribute                                    | S | N   | M    | SD   | T     | gl     | Sig.  | H(0) |
|--|---|-----|------|------|-------|--------|-------|------|
| Unionised_parents_youth_student_area         | F | 313 | 3.86 | 3.90 | -0.63 | 443.00 | 0.531 | HO   |
| Economic_independence                        | M | 132 | 4.11 | 3.93 | -0.62 | 244.43 | 0.533 | HO   |
| Mother_similar_career                        | F | 313 | 2.65 | 1.33 | 1.22  | 443.00 | 0.224 | HO   |
| Father_similar_career                        | M | 132 | 2.49 | 1.18 | 1.28  | 276.49 | 0.201 | HO   |
| Current_age                                  | F | 313 | 8.19 | 1.06 | -2.12 | 443.00 | 0.035 | HI   |
| Living_area                                  | M | 132 | 8.40 | 0.70 | -2.50 | 365.65 | 0.013 | HI   |
| Mother_schooling                             | F | 313 | 8.21 | 1.14 | -1.32 | 443.00 | 0.188 | HO   |
| Father_schooling                             | M | 132 | 8.36 | 0.75 | -1.55 | 362.85 | 0.123 | HO   |
| Distance_from_home_university                | F | 313 | 8.15 | 1.87 | -2.59 | 443.00 | 0.010 | HI   |
| Attribute                                    | M | 132 | 8.66 | 1.97 | -2.54 | 235.17 | 0.012 | HI   |
| Mother_monthly_income_pesomexicanosMXN       | F | 313 | 5.61 | 3.05 | -1.26 | 443.00 | 0.208 | HO   |
| Monthly_parental_income_pesomexicanosMXN     | M | 132 | 6.02 | 3.38 | -1.21 | 225.37 | 0.227 | HO   |
| Total_monthly_household_income_totalMXN      | F | 313 | 5.78 | 3.27 | -0.32 | 443.00 | 0.752 | HO   |
| Student_expenditure_on_foods                 | M | 132 | 5.89 | 3.23 | -0.32 | 249.45 | 0.751 | HO   |
| Utility_expense_per_period                   | F | 313 | 5.25 | 3.61 | 3.68  | 443.00 | 0.000 | HI   |
| Four-monthly_fixed_cost_per_term             | M | 132 | 3.87 | 3.59 | 3.68  | 247.33 | 0.000 | HI   |
| Transport_costs_weekly                       | F | 313 | 2.36 | 2.84 | -4.69 | 443.00 | 0.000 | HI   |
| Home_economy_monthly_importance              |   |     |      |      |       |        |       |      |
| Importance_remittances_permanence_university | S | N   | M    | DE   | T     | gl     | Sig.  | H(0) |
| Importance_possibilities_economic_family     | M | 132 | 3.89 | 3.77 | -4.19 | 196.54 | 0.000 | HI   |
| Attribute                                    | F | 313 | 5.47 | 1.80 | -3.93 | 443.00 | 0.000 | HI   |
| Unionised_parents_youth_student_area         | M | 132 | 6.30 | 2.48 | -3.46 | 192.18 | 0.001 | HI   |
| Economic_independence                        | F | 313 | 5.53 | 1.91 | -4.36 | 443.00 | 0.000 | HI   |
| Mother_similar_career                        | M | 132 | 6.51 | 2.65 | -3.83 | 191.13 | 0.000 | HI   |
| Father_similar_career                        | F | 313 | 6.95 | 2.21 | -2.44 | 443.00 | 0.015 | HI   |
| Current_age                                  | M | 132 | 7.46 | 1.44 | -2.88 | 368.02 | 0.004 | HI   |
| Living_area                                  | F | 313 | 6.28 | 2.74 | -4.73 | 443.00 | 0.000 | HI   |
| Mother_schooling                             | M | 132 | 7.48 | 1.46 | -5.97 | 420.45 | 0.000 | HI   |
| Father_schooling                             | F | 313 | 6.70 | 3.48 | 0.93  | 443.00 | 0.352 | HO   |
| Distance_from_home_university                | M | 132 | 6.37 | 3.18 | 0.97  | 267.95 | 0.335 | HO   |
| Attribute                                    | F | 313 | 2.29 | 2.59 | -7.68 | 443.00 | 0.000 | HI   |
| Mother_monthly_income_pesomexicanosMXN       | M | 132 | 4.45 | 2.95 | -7.29 | 220.77 | 0.000 | HI   |
| Monthly_parental_income_pesomexicanosMXN     | F | 313 | 3.77 | 2.78 | -4.65 | 443.00 | 0.000 | HI   |
| Total_monthly_household_income_totalMXN      | M | 132 | 5.16 | 3.06 | -4.48 | 226.53 | 0.000 | HI   |
| Student_expenditure_on_foods                 | F | 313 | 5.24 | 2.70 | -5.43 | 443.00 | 0.000 | HI   |
| Utility_expense_per_period                   | M | 132 | 6.80 | 2.88 | -5.29 | 232.83 | 0.000 | HI   |
| Four-monthly_fixed_cost_per_term             | F | 313 | 5.84 | 3.54 | -2.40 | 443.00 | 0.017 | HI   |
| Transport_costs_weekly                       | M | 132 | 6.70 | 3.12 | -2.53 | 277.70 | 0.012 | HI   |
| Home_economy_monthly_importance              | F | 313 | 9.33 | 1.59 | -1.11 | 443.00 | 0.268 | HO   |
|  | M | 132 | 9.50 | 1.07 | -1.29 | 357.65 | 0.197 | HO   |

Where: F= Female; M= Male; N= Sample size; M= Mean; SD= Standard deviation; t= Student's t-test; gl= Degrees of freedom; sig= Significance; H(0)= Statistical decision

**Table 2** Comparative analysis of gender grouping: Socio-economic status of students  
Source: Own elaboration

## Job market for professionals in career choice

For this opportunity, in 10 of the 31 attributes faced, equivalent to 32.25% of the items, significant differences were found between the sexes, in almost all of the mismatches, the perception of the male sex was higher in relation to the mean of the female sex responses. Males show optimistic expectations about the income expected from the degree, and they also appreciate more than females unofficial means such as family, friends and partners to obtain valid information about the labour market of the different careers, or about examples of professional success in the area in which the young person intends to develop. Women, on the other hand, are less likely to rely on unofficial means as a source of reliable information about the labour market or models of professional glory; they rely more than men on their own research from official sources such as the National Occupation and Employment Survey (ENOE), nor do they attach as much importance to the time of graduation as a factor in career selection.

Women and men show similar averages in terms of the importance given to curricula according to the needs of employers, internships, the importance of the labour market in career choice, expected future income and labour saturation in the desired area. The differences, as mentioned above, with the exception of the time of graduation, lie in the weighting that each group gives to external actors as a means of information, work examples and moderate expectations of future income, but as regards the direct link between the opportunities of a degree to successfully enter the labour market, they react in a similar way, whatever their channel of enquiry.

| Attribute   | S | N   | M    | SD   | t     | gl     | Sig.  | H(T) |
|---|---|-----|------|------|-------|--------|-------|------|
| Importance_plans_and_programmes                               | F | 313 | 9.57 | 1.34 | -0.87 | 443.00 | 0.386 | HO   |
|   | M | 132 | 9.68 | 0.89 | -1.01 | 359.94 | 0.311 | HO   |
| employer_agreements   | F | 313 | 3.31 | 3.41 | 0.40  | 443.00 | 0.693 | HO   |
|   | M | 132 | 3.16 | 4.01 | 0.37  | 214.67 | 0.712 | HO   |
| Importance_internships_professional_selection                 | S | N   | M    | DE   | t     | gl     | Sig.  | H(T) |
|   | F | 313 | 4.46 | 3.77 | 1.17  | 443.00 | 0.241 | HO   |
|   | M | 132 | 4.01 | 3.67 | 1.19  | 252.33 | 0.237 | HO   |
|   | F | 313 | 3.03 | 3.31 | -2.68 | 443.00 | 0.008 | HI   |
| Attribute_importance_job_market_career_choice                 | M | 132 | 3.95 | 3.40 | -2.65 | 240.21 | 0.009 | HI   |
|   | F | 313 | 9.08 | 1.75 | -0.82 | 443.00 | 0.415 | HO   |
|   | M | 132 | 9.23 | 1.83 | -0.80 | 237.14 | 0.423 | HO   |
|   | F | 313 | 5.65 | 3.34 | 0.12  | 443.00 | 0.901 | HO   |
|   | M | 132 | 5.61 | 3.97 | 0.12  | 212.80 | 0.908 | HO   |
| Importance_qualification_time_importance_of_recruitment_entry | F | 313 | 4.96 | 3.37 | -1.18 | 443.00 | 0.239 | HO   |
|   | M | 132 | 5.38 | 3.58 | -1.15 | 234.01 | 0.251 | HO   |
|   | F | 313 | 5.28 | 2.92 | -2.66 | 443.00 | 0.008 | HI   |
|   | M | 132 | 6.12 | 3.34 | -2.52 | 219.66 | 0.013 | HI   |
| recruitment_entry   | F | 313 | 3.14 | 3.55 | -1.23 | 443.00 | 0.218 | HO   |
|   | M | 132 | 3.61 | 4.10 | -1.16 | 217.93 | 0.246 | HO   |
| expected_career_choice  | F | 313 | 3.68 | 4.11 | 0.59  | 443.00 | 0.554 | HO   |
|   | M | 132 | 3.43 | 3.92 | 0.60  | 257.15 | 0.547 | HO   |
| Market_influence_job_within_academic_area                     | F | 313 | 4.16 | 3.17 | 1.56  | 443.00 | 0.119 | HO   |
|   | M | 132 | 3.62 | 3.74 | 1.46  | 213.89 | 0.146 | HO   |
| Market_influence_work_outside_academic_area                   | F | 313 | 4.43 | 2.98 | -0.79 | 443.00 | 0.431 | HO   |
|   | M | 132 | 4.69 | 3.66 | -0.73 | 207.47 | 0.469 | HO   |
| Market_influence_labour_market_in_orientation                 | F | 313 | 5.20 | 3.16 | -2.14 | 443.00 | 0.033 | HI   |
|   | M | 132 | 5.92 | 3.44 | -2.07 | 228.83 | 0.040 | HI   |
| work_outside_academic_area_labour_market_in_orientation       | F | 313 | 3.46 | 3.20 | 1.91  | 443.00 | 0.057 | HO   |
|   | M | 132 | 2.78 | 3.88 | 1.77  | 209.51 | 0.079 | HO   |
| Labour_market_in_orientation_in_vocational_orientation        | F | 313 | 5.89 | 2.83 | 0.69  | 443.00 | 0.490 | HO   |
|   | M | 132 | 5.67 | 3.58 | 0.63  | 203.47 | 0.530 | HO   |
| in_vocational_orientation_vocational                          | F | 313 | 5.91 | 2.66 | -4.11 | 443.00 | 0.000 | HI   |
|   | M | 132 | 7.05 | 2.71 | -4.08 | 242.19 | 0.000 | HI   |
| Job_market  | F | 313 | 4.54 | 3.18 | -1.35 | 443.00 | 0.177 | HO   |
|   | M | 132 | 5.01 | 3.59 | -1.29 | 221.77 | 0.199 | HO   |
| different_subject_orientation                                 | F | 313 | 5.95 | 2.64 | -3.93 | 443.00 | 0.000 | HI   |
|   | M | 132 | 6.98 | 2.31 | -4.15 | 279.63 | 0.000 | HI   |
| Research_in_their_own_output                                  | S | N   | M    | DE   | t     | gl     | sig.  | H(T) |
|   | F | 313 | 5.65 | 2.44 | -0.86 | 443.00 | 0.393 | HO   |
|   | M | 132 | 5.85 | 1.86 | -0.95 | 320.07 | 0.341 | HO   |
| labour_market_Mexico  | F | 313 | 6.42 | 2.27 | -2.22 | 443.00 | 0.027 | HI   |
|   | M | 132 | 6.94 | 2.27 | -2.22 | 246.75 | 0.027 | HI   |
| Direct_reception_propaganda                                   | F | 313 | 4.24 | 3.06 | -2.96 | 443.00 | 0.003 | HI   |
|   | M | 132 | 5.23 | 3.55 | -2.79 | 217.43 | 0.006 | HI   |
| EENOE   | F | 313 | 3.80 | 2.93 | -2.08 | 443.00 | 0.039 | HI   |
|   | M | 132 | 4.45 | 3.14 | -2.02 | 232.02 | 0.045 | HI   |
| Saturation_of_your_area                                       | F | 313 | 3.20 | 2.99 | -0.67 | 443.00 | 0.501 | HO   |
|   | M | 132 | 3.41 | 2.78 | -0.69 | 262.84 | 0.489 | HO   |
| Perception_of_your_professional_wage                          | F | 313 | 2.88 | 3.38 | 0.81  | 443.00 | 0.421 | HO   |
|   | M | 132 | 2.59 | 3.57 | 0.79  | 234.92 | 0.431 | HO   |
| professional_wage   | F | 313 | 3.44 | 3.18 | 0.76  | 443.00 | 0.445 | HO   |
|   | M | 132 | 3.18 | 3.46 | 0.74  | 228.87 | 0.461 | HO   |
| Perception_of_job_failure                                     | F | 313 | 1.79 | 2.77 | -0.40 | 443.00 | 0.692 | HO   |
|   | M | 132 | 1.90 | 2.91 | -0.39 | 236.16 | 0.698 | HO   |
| Perception_of_good  | F | 313 | 5.75 | 2.81 | -2.14 | 443.00 | 0.033 | HI   |
|   | M | 132 | 6.38 | 2.91 | -2.11 | 238.58 | 0.036 | HI   |
| Remuneration_career_own_career                                | F | 313 | 2.82 | 3.13 | -0.88 | 443.00 | 0.381 | HO   |
|   | M | 132 | 3.11 | 3.50 | -0.84 | 223.57 | 0.403 | HO   |
| Salary_perception   | F | 313 | 5.62 | 3.35 | -3.57 | 443.00 | 0.000 | HI   |
|   | M | 132 | 6.83 | 3.07 | -3.70 | 267.47 | 0.000 | HI   |
| Professional_Zacatecas  | F | 313 | 3.45 | 2.99 | -1.96 | 443.00 | 0.050 | IND  |
|   | M | 132 | 4.08 | 3.42 | -1.86 | 219.14 | 0.065 | HO   |
| Perception_of_good_output                                     | F | 313 | 3.67 | 3.32 | 0.81  | 443.00 | 0.420 | HO   |
|   | M | 132 | 3.39 | 3.14 | 0.83  | 259.74 | 0.410 | HO   |

Where: F= Female; M= Male; N= Sample size; M= Mean; SD= Standard deviation; t= Student's t-test; gl= Degrees of freedom; sig= Significance; H (T)= Statistical Decision

**Table 3** Comparative gender clustering analysis: Importance of the professional labour market in career choice

Source: Own elaboration

## Attitudes, aptitudes and academic security in career selection

There are 26 attributes measured in terms of the aptitudes, attitudes and academic security of the university students, hypothetically situated in the context of their last year of baccalaureate, only in seven of the variables weighed, equivalent to 26.92% of the questions, show confrontation of the groups. Both sexes, during the last year of the baccalaureate, perceived similar deficiencies in their attitudes in mathematics, computer science, English, accounting, social studies and humanities. Without rejecting the null hypothesis, women were more confident about their career choice at the end of the bachelor's degree, but their confidence in getting into their career option one was somewhat lower, and women were more suspicious about whether their bachelor's degree had prepared them for their desired degree.



### The gender perspective in career choice

34 attributes are part of the combo gender expectation in career choice, in 14 of them significant differences were found, representing 41.17% of the questioned items. The sets tend to consider that their gender is relevant to the career they are studying and in the perception that society shows towards their career, considering it as masculine in general, this metric is obviously a little higher in women, although without opting for the researcher's hypothesis. Practically, equal appreciation on the social opinion of femininity of their degree, with significance within the parameters of null, which reveals that in social terms, the stigma of feminine and masculine careers persists. Both experienced almost equal, though slightly higher in males, opposition from their parents to their career choice on gender grounds, this metric is enhanced in males by the high averages obtained in nursing and management careers, apparently socially considered as suitable for women, with an average intensity of 2.44 in males, while opposition from friends was higher in females. A similar degree of family agreement with the chosen career, support with their academic responsibilities. Considerations above an average of six on seeing one's own sex as an academic constraint, which is somewhat ironic, the low score given to neutrality of scholastic abilities in both sexes, just 1.53 on average in the best of cases, together with the high averages for considering one's own sex as an academic constraint, point to the presence of academic discrimination by sex, committed by women and men to the detriment of the same guild, since both seem to see their neighbour's garden as a little greener.

The perspective does not vary much either in the appreciation of ambition for good grades in men, female scholastic initiative, the ease of the careers chosen by them, contrary to what was expected, school bullying attributable to gender and career stigma in school, family or neighbourhood, is slightly higher among men, although, without reaching with such figures to opt for the alternative hypothesis, and with averages below 2.5 for all cases, that is to say, however, although not with such serious intensity, bullying by the stigma of careers suitable for each gender remains a stale custom.

Among the attributes where, due to the differences in significance and means, the researcher's hypothesis (H1) was accepted, we find: self-image of career neutrality, higher in men by 1.44, although with a male average of 3.06, neither women nor men consider their careers as neutral. Greater opposition on the part of relatives to the choice of career for gender reasons, much higher in women by 1.59 units, in fact, this is the second item with the greatest differences among the weighted attributes of the section. Opposition of partners to career choice for gender reasons, higher in women by .7, opposition of acquaintances, .73, also higher in women, opposition of teachers to career choice for gender reasons, higher in women by .51, and opposition of managers to career choice for the same reasons, with a higher average in women by .74 units. .55 units higher among women that their gender is a constraint to their learning, although fortunately with a low average of 1.53. According to women, they worry about their professional future with an average of 8.97, while men's average for the same question was only .82, a difference of 8.15 units, the largest margin among the 159 items in the questionnaire.

According to men, women's chances of pursuing the studies they want is less than 1.58, but this difference is reduced to 1.18 when men and women are asked about men's chances of pursuing the studies they want, given that 58.65% of the respondents of both sexes were in favour of the studies they want. 65% of respondents of both sexes stated that they do not study their first career option, averages of 3.73 and 3.57 for each case are not surprising, a gap which, although it is significant in the T Student test, what should be most urgent and worrying is to widen the possibilities for everyone to enter their desired degree. We also see differences in the perception of ambition for good academic grades by women, 1.19 on average lower for men, as well as a worrying 3.57 on average in the best case. Finally, when asked in a direct, frank and straightforward manner, to what degree there is a feeling of obligation to choose between gender-appropriate careers, the difference between the sexes was .8, in favour of men, i.e. they were more concerned about this social, academic and sexual convention than women, although fortunately, the average for men was only 1.83 out of a maximum of 10 units.

| Attributes                  | S | N   | M    | DE   | t     | gl     | sig.  | H(t) |
|-----------------------------|---|-----|------|------|-------|--------|-------|------|
| Gender_relevance            | F | 313 | 4.32 | 3.36 | 0.94  | 443.00 | 0.346 | HO   |
| Career                      | M | 132 | 3.98 | 3.89 | 0.89  | 217.49 | 0.375 | HO   |
| Masculinity                 | F | 313 | 4.62 | 3.69 | 0.80  | 443.00 | 0.426 | HO   |
| Career according to society | M | 132 | 4.30 | 4.01 | 0.77  | 228.89 | 0.442 | HO   |
| Femininity                  | F | 313 | 4.01 | 3.50 | -0.13 | 443.00 | 0.897 | HO   |
| Career according to society | M | 132 | 4.06 | 3.74 | -0.13 | 232.22 | 0.900 | HO   |
| Neutrality                  | F | 313 | 3.88 | 3.64 | -4.54 | 443.00 | 0.000 | H1   |
| Career according to society | M | 132 | 5.54 | 3.18 | -4.80 | 279.69 | 0.000 | H1   |
| Self_image                  | F | 313 | 4.53 | 3.21 | -0.39 | 443.00 | 0.696 | HO   |
| masculinity                 | M | 132 | 4.67 | 3.44 | -0.38 | 231.40 | 0.704 | HO   |
| Own_image                   | F | 313 | 5.65 | 3.31 | 0.92  | 443.00 | 0.360 | HO   |
| femininity                  | M | 132 | 5.33 | 3.53 | 0.89  | 232.67 | 0.373 | HO   |
| Own_image                   | F | 313 | 1.62 | 3.05 | -4.30 | 443.00 | 0.000 | H1   |
| neutrality                  | M | 132 | 3.06 | 3.59 | -4.03 | 214.42 | 0.000 | H1   |
| Opposition                  | F | 313 | 2.16 | 3.27 | -0.82 | 443.00 | 0.414 | HO   |
| parents choice career_by    | M | 132 | 2.44 | 3.48 | -0.80 | 233.43 | 0.426 | HO   |
| gender_motives              | F | 313 | 7.43 | 3.55 | 3.95  | 443.00 | 0.000 | H1   |
| relatives                   | M | 132 | 5.84 | 4.54 | 3.58  | 201.72 | 0.000 | H1   |
| _election_choice            | F | 313 | 1.50 | 2.77 | 1.25  | 443.00 | 0.212 | HO   |
| race_for                    | M | 132 | 1.14 | 2.55 | 1.29  | 265.91 | 0.198 | HO   |
| gender_motives              | F | 313 | 1.81 | 3.05 | 2.35  | 443.00 | 0.019 | H1   |
| partner                     | M | 132 | 1.11 | 2.35 | 2.61  | 316.55 | 0.009 | H1   |
| election                    | F | 313 | 1.45 | 2.81 | 1.93  | 443.00 | 0.055 | IND  |
| career_for                  | M | 132 | 0.92 | 2.16 | 2.14  | 317.30 | 0.033 | H1   |
| gender_motives              | F | 313 | 1.43 | 2.80 | 2.73  | 443.00 | 0.007 | H1   |
| teachers                    | M | 132 | 0.70 | 1.88 | 3.19  | 359.42 | 0.002 | H1   |
| selection                   | F | 313 | 1.61 | 2.79 | 2.68  | 443.00 | 0.008 | H1   |
| career_by                   | M | 132 | 0.87 | 2.25 | 2.93  | 303.13 | 0.004 | H1   |
| gender_motives              | F | 313 | 1.26 | 2.58 | -0.16 | 443.00 | 0.871 | HO   |
| management                  | M | 132 | 1.30 | 2.72 | -0.16 | 235.38 | 0.874 | HO   |
| _election                   | F | 313 | 1.00 | 2.36 | -1.72 | 443.00 | 0.086 | HO   |
| career_by                   | M | 132 | 1.46 | 3.01 | -1.56 | 201.92 | 0.121 | HO   |
| gender_motives              | F | 313 | 6.19 | 3.62 | -0.05 | 443.00 | 0.957 | HO   |
| family_with                 | M | 132 | 6.21 | 3.64 | -0.05 | 244.90 | 0.957 | HO   |
| race_by                     | F | 313 | 7.08 | 3.21 | 0.45  | 443.00 | 0.653 | HO   |
| gender                      | M | 132 | 6.92 | 3.91 | 0.41  | 208.67 | 0.679 | HO   |
| position                    | F | 313 | 1.57 | 2.65 | 0.22  | 443.00 | 0.823 | HO   |
| within my                   | M | 132 | 1.51 | 3.06 | 0.21  | 217.76 | 0.833 | HO   |
| branch_of_study             | F | 313 | 1.53 | 2.75 | 2.03  | 443.00 | 0.043 | H1   |
| both sexes                  | M | 132 | 0.98 | 2.38 | 2.15  | 281.96 | 0.033 | H1   |
| in_both sexes               | F | 313 | 8.97 | 2.23 | 5.46  | 443.00 | 0.000 | H1   |
| both sexes                  | M | 132 | 7.38 | 3.83 | 4.46  | 169.71 | 0.000 | H1   |
| Restrictions                | F | 313 | 1.51 | 2.60 | 2.72  | 443.00 | 0.007 | H1   |
| _learning                   | M | 132 | 0.82 | 2.11 | 2.96  | 300.91 | 0.003 | H1   |
| Attributable                | F | 313 | 3.73 | 3.68 | 4.31  | 443.00 | 0.000 | H1   |
| gender                      | M | 132 | 2.15 | 3.15 | 4.59  | 285.25 | 0.000 | H1   |
| Concern                     | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| future                      | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| professional                | F | 313 | 3.57 | 3.58 | 3.26  | 443.00 | 0.001 | H1   |
| women                       | M | 132 | 2.39 | 3.18 | 3.42  | 275.35 | 0.001 | H1   |
| Concern                     | F | 313 | 2.10 | 2.70 | 0.85  | 443.00 | 0.396 | HO   |
| future                      | M | 132 | 1.86 | 2.71 | 0.85  | 245.28 | 0.397 | HO   |
| professional                | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| men                         | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| Possibilities               | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| women                       | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| _study                      | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| studies                     | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| they_want                   | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| men                         | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| Possibilities               | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.000 | H1   |
| to_study                    | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.000 | H1   |
| studies                     | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
| they_want                   | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |
| Ambition                    | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
| good_notes                  | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |
| academic                    | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
| women                       | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |
| Ambition                    | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
| good                        | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |
| _academic_notes             | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
| academic                    | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |
| men                         | F | 313 | 3.11 | 3.01 | 3.85  | 443.00 | 0.001 | H1   |
|                             | M | 132 | 1.93 | 2.75 | 3.99  | 268.26 | 0.001 | H1   |

|                           |   |     |      |      |       |        |       |      |
|---------------------------|---|-----|------|------|-------|--------|-------|------|
| Initiative                | F | 313 | 2.40 | 3.16 | -0.09 | 443.00 | 0.925 | HO   |
| _school                   | M | 132 | 2.43 | 3.62 | -0.09 | 218.95 | 0.929 | HO   |
| _women                    | F | 313 | 3.74 | 3.41 | -0.81 | 443.00 | 0.420 | HO   |
| Initiative                | M | 132 | 4.04 | 3.95 | -0.76 | 217.53 | 0.448 | HO   |
| school                    | F | 313 | 2.05 | 2.92 | 0.40  | 443.00 | 0.693 | HO   |
| men                       | M | 132 | 1.93 | 2.89 | 0.40  | 249.15 | 0.692 | HO   |
| Facility                  | F | 313 | 2.66 | 3.15 | -1.92 | 443.00 | 0.055 | HO   |
| _careers                  | M | 132 | 3.33 | 3.72 | -1.80 | 213.90 | 0.074 | HO   |
| who_choose_women          | F | 313 | 1.79 | 2.93 | -1.80 | 443.00 | 0.072 | HO   |
| choose_women              | M | 132 | 2.36 | 3.32 | -1.71 | 221.28 | 0.088 | HO   |
| Facility                  | F | 313 | 1.77 | 2.76 | -1.20 | 443.00 | 0.231 | HO   |
| careers                   | M | 132 | 2.14 | 3.44 | -1.10 | 205.68 | 0.274 | HO   |
| who_choose_men            | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
| choose_men                | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |
| Bullying_school           | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
| Attribute:est:gen_career  | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |
| Attributes                | S | N   | M    | DE   | t     | gl     | sig.  | H(t) |
| Bullying_family_bullying_ | F | 313 | 1.79 | 2.93 | -1.80 | 443.00 | 0.072 | HO   |
| attributable              | M | 132 | 2.36 | 3.32 | -1.71 | 221.28 | 0.088 | HO   |
| stigma                    | F | 313 | 1.26 | 2.52 | -1.31 | 443.00 | 0.190 | HO   |
| gender_and_career         | M | 132 | 1.63 | 3.21 | -1.19 | 202.16 | 0.235 | HO   |
| Bullying_neighbourhood_   | F | 313 | 1.26 | 2.52 | -1.31 | 443.00 | 0.190 | HO   |
| attributable              | M | 132 | 1.63 | 3.21 | -1.19 | 202.16 | 0.235 | HO   |
| stigma                    | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
| gender_and_race           | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |
| Feeling_of                | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
| obligation                | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |
| choice_between            | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
| _careers                  | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |
| gender_fit_careers        | F | 313 | 1.12 | 2.39 | -2.56 | 443.00 | 0.011 | H1   |
|                           | M | 132 | 1.83 | 3.19 | -2.28 | 195.78 | 0.023 | H1   |

Where: F= Female; M= Male; N= Sample size; M= Mean; SD= Standard deviation; t= Student's t-test; gl= Degrees of freedom; sig= Significance; H (t)= Statistical decision.

Table 6 Comparative gender cluster analysis: Gender perspective in career choice

Cultural elements in career choice

24 are the attributes subjected to T Student test in the dimension of the role of cultural elements in career choice, in 9 of them, equivalent to 37.5% of the attributes, the null hypothesis was rejected due to differences between the groups. The influence exerted by the first-order family on career choice is similar in both sexes, very small in terms of the average, 1.5 in the case of men, nor do they differ too much on the influence of close friends, again with low averages, very close to the weight of parents in the decision. The influence of local culture on career choice shows low averages for both sexes, although higher for males. There is no great discordance in the choice of career for cultural reasons between the groups. Partner's antagonism to culturally motivated career choice is also moderate, 1.37 in males, and similar is the case with resistance to culturally motivated career choice from teachers, school management and acquaintances, in all 3 cases, males show a slightly higher incidence. The female sexes consider themselves to be slightly more religious than the male sex, maximum 4.12. And both sexes consider almost equally that their career is morally accepted by society. No significant differences were found regarding the difficulty of the current career, with an average of 7.60, and whether such difficulty influenced the career decision, 2.54, maximum averages, both corresponding to the male sex. Both women and men rate the social prestige of their careers highly, with averages of 7.81 and 7.82 respectively.

Women rate the usefulness of their career for the development of their community .6 higher than men. Females suffer .35 more family pressure to choose their current career than males, with a mean of 1.37. Females also have a higher mean in terms of the perceived usefulness of their career for the development of their community. Although with brief asymmetries, in this block of attributes, the above singularities still reside within the limits of acceptance of H0.

Of the attributes where the Student's t-hypothesis test indicated to opt for H1 we find, that the greatest opposition to career choice for cultural reasons is exercised by close relatives, with its maximum in females 1.5 out of 10 possible in quotient. On the influence of their religion on their choice of career, there are differences between the sections, such influence is .55 higher in men, with 1.73 on average. The consideration that their career is accepted or well regarded by their religion is .93 higher for males with 7.58 on average, similarly, males consider at 2.01 units higher the metric on social respect for professionals, but, at the same time, the same males place at 5.14 on average the social respect for a non-professional, 2.19 units higher than the female average on the same issue. The male sex, on average, considers that being a professional is important for social success, 4.85 units higher than the female average. Men rate .62 higher than women the perception of social respect for their careers. While men rate .61 higher with a mean of 8.86, the usefulness of their career for personal progress, women report a considerably higher family opposition to going abroad to study, with a maximum average for women of 3.35, 1.06 units higher than the opposition in men.

| Attribute  | S | N   | M    | SD   | t     | gl     | sig.  | H(t) |
|--|---|-----|------|------|-------|--------|-------|------|
| Family_influence_of_first_career_choice_order                        | F | 313 | 1.02 | 2.26 | -2.00 | 443.00 | 0.047 | IND  |
|  | M | 132 | 1.53 | 2.96 | -1.79 | 198.18 | 0.075 | HO   |
| Friends_influence_from_first_career_choice_order                     | F | 313 | 1.33 | 2.52 | 1.05  | 443.00 | 0.293 | HO   |
|  | M | 132 | 1.05 | 2.66 | 1.03  | 234.88 | 0.304 | HO   |
| Influencia_cultura_local_de_primer_orden_elección_carrera            | F | 313 | 1.01 | 2.31 | -1.86 | 443.00 | 0.064 | HO   |
|  | M | 132 | 1.51 | 3.20 | -1.63 | 190.71 | 0.105 | HO   |
| Culture_influence_local_from_first_order_career_choice               | F | 313 | 1.55 | 2.83 | 0.65  | 443.00 | 0.516 | HO   |
|  | M | 132 | 1.36 | 2.81 | 0.65  | 248.17 | 0.515 | HO   |
| Parent_opposition_selection_career_motives_cultural_motives          | F | 313 | 1.56 | 2.63 | 2.06  | 443.00 | 0.040 | H1   |
|  | M | 132 | 1.01 | 2.44 | 2.13  | 263.85 | 0.034 | H1   |
| Opposition_relatives_choice_career_cultural_motives                  | F | 313 | 1.16 | 2.46 | -0.79 | 443.00 | 0.430 | HO   |
|  | M | 132 | 1.37 | 2.86 | -0.74 | 216.68 | 0.459 | HO   |
| Opposition_teachers_career_choice_motives_cultural                   | F | 313 | 1.14 | 2.36 | -1.42 | 443.00 | 0.157 | HO   |
|  | M | 132 | 1.52 | 2.93 | -1.30 | 206.04 | 0.195 | HO   |
| Opposition_management_career_election_career_choice_cultural_motives | F | 313 | 1.06 | 2.27 | -1.89 | 443.00 | 0.059 | HO   |
|  | M | 132 | 1.55 | 3.00 | -1.69 | 196.79 | 0.093 | HO   |
| Opposition_neighbours_career_election_cultural_motives               | F | 313 | 1.01 | 2.22 | -1.37 | 443.00 | 0.172 | HO   |
|  | M | 132 | 1.36 | 2.84 | -1.24 | 201.44 | 0.217 | HO   |
| Degree_of_religiosity  | F | 313 | 4.12 | 3.06 | 0.14  | 443.00 | 0.890 | HO   |
|  | M | 132 | 4.08 | 3.47 | 0.13  | 220.80 | 0.896 | HO   |
| Attribute  | S | N   | M    | SD   | t     | gl     | sig.  | H(t) |
| Influence_religion_career_choice                                     | F | 313 | 1.18 | 2.18 | -2.12 | 443.00 | 0.034 | H1   |
|  | M | 132 | 1.73 | 3.15 | -1.84 | 186.02 | 0.068 | HO   |
| Moral_career_acceptance  | F | 313 | 6.85 | 3.12 | -0.56 | 443.00 | 0.576 | HO   |
|  | M | 132 | 7.03 | 3.07 | -0.56 | 250.05 | 0.574 | HO   |
| Acceptance_of_your_career_religion                                   | F | 313 | 6.65 | 3.32 | -2.80 | 443.00 | 0.005 | H1   |
|  | M | 132 | 7.58 | 2.87 | -2.97 | 282.80 | 0.003 | H1   |
| Social_respect_for_professionals                                     | F | 313 | 5.33 | 3.54 | -5.50 | 443.00 | 0.000 | H1   |
|  | M | 132 | 7.34 | 3.48 | -5.53 | 250.11 | 0.000 | H1   |
| Social_respect_for_non_professionals                                 | F | 313 | 2.95 | 3.08 | -6.28 | 443.00 | 0.000 | H1   |
|  | M | 132 | 5.14 | 3.96 | -5.68 | 201.03 | 0.000 | H1   |
| Importance_of_being_professional_social_success                      | F | 313 | 3.94 | 3.53 | -2.41 | 443.00 | 0.016 | H1   |
|  | M | 132 | 4.85 | 3.88 | -2.32 | 227.12 | 0.021 | H1   |
| Importance_of_choice_difficulty_current_career                       | F | 313 | 2.56 | 3.28 | 0.06  | 443.00 | 0.951 | HO   |
|  | M | 132 | 2.54 | 3.40 | 0.06  | 238.47 | 0.952 | HO   |
| Current_difficulty_career  | F | 313 | 7.31 | 2.41 | -1.22 | 443.00 | 0.222 | HO   |
|  | M | 132 | 7.60 | 1.80 | -1.37 | 326.64 | 0.170 | HO   |
| Social_respect_for_your_Career_Zacatecas                             | F | 313 | 6.49 | 2.33 | -2.58 | 443.00 | 0.010 | H1   |
|  | M | 132 | 7.11 | 2.19 | -2.65 | 261.09 | 0.009 | H1   |
| Attribute  | S | N   | M    | SD   | t     | gl     | sig.  | H(t) |
| Prestige_of_your_University  | F | 313 | 7.81 | 1.91 | -0.05 | 443.00 | 0.961 | HO   |
|  | M | 132 | 7.82 | 1.99 | -0.05 | 237.18 | 0.961 | HO   |
| Career_utility_Development_Your_community                            | F | 313 | 8.26 | 1.97 | 0.27  | 443.00 | 0.784 | HO   |
|  | M | 132 | 8.20 | 1.74 | 0.29  | 276.11 | 0.773 | HO   |
| Career_utility_personal_progress                                     | F | 313 | 8.25 | 2.17 | -2.84 | 443.00 | 0.005 | H1   |
|  | M | 132 | 8.86 | 1.85 | -3.03 | 286.75 | 0.003 | H1   |
| Family_pressure_to_choose_Current_career                             | F | 313 | 1.37 | 2.80 | 1.28  | 443.00 | 0.201 | HO   |
|  | M | 132 | 1.02 | 2.25 | 1.40  | 303.81 | 0.163 | HO   |
| Family_opposition_to_go_out_to_study_outside_to_study_outside        | F | 312 | 3.35 | 3.85 | 2.70  | 442.00 | 0.007 | H1   |
|  | M | 132 | 2.29 | 3.62 | 2.76  | 261.41 | 0.006 | H1   |

Table 7 Comparative gender cluster analysis: cultural elements in career selection

Conclusions

Having analysed the differences within the 6 theoretical dimensions mentioned above, participants in the career choice according to our construct with the help of the Student's t-test for independent samples, it remains to add that. In general terms, 159 attributes were computed on a 0-10 ratio scale, locating 59 significant gender differences within the constructs, equivalent to 37.10% of the items.

The most disparate attributes according to gender, ordered by intensity of occurrence, are: 1) The socio-economic status of the student, differences in 68.42% of the items; 2) The gender perspective in career choice, clashes in 41.17% of the variables; 3) Cultural elements in career choice, disparities in 37.5% of the attributes; 4) Job market for professionals in career choice, oppositions in 32.25% of the questionnaires; 5) Attitudes, aptitudes and academic security in career selection, differences in 26.92% of the cases; 6) The role of guidance and counsellor in career choice, only 3% of the findings. In another reading, 44.05% of the asymmetries between genders are of an economic nature, 27.11% of them socio-economic and the rest are labour market assessments for professionals. Disparities of 38.97% in the dimensions of gender perspective in the choice of career and other cultural elements towards the same decision. Only 16.94% irregularities in academic attitudes and skills and the role of vocational guidance.

In this overall picture, it is striking that none of the 132 male respondents reported that the total monthly family income in their household was less than or equal to 3 on our scale, which covers a range from 2,000 to 7,999 MXN per month, while on the other hand, 12.1% of the female respondents live in households with family income in the same range. The next stratum, with a maximum total household income of MXN 9,999, we have as a cumulative percentage 15.3% of women, compared to only 2.3% of men. The cumulative percentage of women and men corresponding to each income level is finally equalised at the 8th level of our scale, with a maximum income of MXN 17,999, with 77% of women and 74.2% of men. 72% of the male students say that their family's income is between levels 5 and 8 of our scale, with 7 being the most common and the maximum income being 13,999 MXN, while 51.8% of the female students have incomes in the same range and mode as the male students. For the final segment between 8 and 10, the highest income in our metric, from 16,000 to 20,000 thousand MXN or more, 48.2% of women are located, in men, this indicator rises to 44.7%.

At present, with the exception of a few engineering degrees, women are in the majority in almost all careers in Fresnillo, Zacatecas. An important part of the explanation is that about a quarter of them, 21.7%, belong to less favoured socio-economic statuses, with family incomes ranging between 2,000 and 11,999 Mexican pesos. This metric is further contextualised by the fact that, as a consequence, 3.5% of women dropped out of higher education at some point for economic reasons, compared to only 1.5% of men in the same category. Women are 2.33 times more likely to drop out of university for financial reasons than men, for whom "the course did not suit me" was the most common reason for dropping out. It is true that the majority of Fresnillo's university students today benefit from the Benito Juárez scholarship, but there is still a need for additional support for the most economically disadvantaged group. Some of the policies that could reduce the current financially disadvantaged university dropout rate and increase student achievement include: remission of internal fees, school supplies, transport assistance, student canteens, food and food parcels and linkage programmes for part-time employment.

Within the area of vocational guidance, it is necessary to put more emphasis on the verification of labour market research in the different careers, especially for men, since they tend to be influenced by unofficial means of information. Unfortunately, as could be observed, stereotypes of female and male careers are not only socially presented to students, but also reproduced by them. Opposition to gender-based career choices is far from disappearing, although the highest metric is among male nurses, it is women who suffer from this stale ideology from a greater number of actors, especially from close relatives and romantic partners. Therefore, today more than ever, workshops with a gender perspective should be continued and expanded in schools and neighbourhoods of the municipality.

## References

- Anthony & Cols. (1984), citado por Galilea. V. (2000) Orientación vocacional. Recuperado de [http://www.sie.es/crl/archivo\\_pdf/ORIENTACION%20VOCACIONAL.pdf](http://www.sie.es/crl/archivo_pdf/ORIENTACION%20VOCACIONAL.pdf).  
[http://www.crlnuevavida.es/crl/images/articulos\\_pdf/Orientacion\\_vocacional.pdf](http://www.crlnuevavida.es/crl/images/articulos_pdf/Orientacion_vocacional.pdf)



Armenta. (2007). No Title FACTORES SOCIOECONÓMICOS QUE INTERVIENEN EN EL DESEMPEÑO ACADÉMICO DE LOS ESTUDIANTES UNIVERSITARIOS DE LA FACULTAD DE CIENCIAS HUMANAS DE LA UNIVERSIDAD AUTÓNOMA DE BAJA CALIFORNIA. *REVISTA IIPSI FACULTAD DE PSICOLOGÍA UNMSM*, (ISSN IMPRESA: 1560-909X ISSN ELECTRÓNICA: 1609-7475). Retrieved from <http://pepsic.bvsalud.org/pdf/ripsi/v11n1/v11n1a10.pdf>

BARRÓN-PALOS, Eduardo Javier, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania. Theoretical and methodological background on the economic attributes in the choice of university career. *Journal Economic Development*. 2021. 8-26:17-25. DOI: 10.35429/JED.2021.26.8.17.25 URL: [https://www.ecorfan.org/bolivia/researchjournals/Desarrollo\\_Economico/vol8num26/Journal\\_Economic\\_Development\\_V8\\_N26\\_3.pdf](https://www.ecorfan.org/bolivia/researchjournals/Desarrollo_Economico/vol8num26/Journal_Economic_Development_V8_N26_3.pdf)

Bolaños. (2001). Elección de carrera. *Facultad de Economía, UANL. Vol. XXXIX Número 235*, (Revista de difusión). Retrieved from [http://eprints.uanl.mx/8671/1/Eleccion\\_de\\_carrera.pdf](http://eprints.uanl.mx/8671/1/Eleccion_de_carrera.pdf)

Burin, Mabel Las "fronteras de cristal" en la carrera laboral de las mujeres. Género, subjetividad y globalización *Anuario de Psicología*, vol. 39, núm. 1, abril, 2008, pp. 75-86 Universitat de Barcelona Barcelona, España. ISSN: 0066-5126. URL: <https://www.redalyc.org/pdf/970/97017401006.pdf>

Cabrera G. (1987). *Factores Externos que inciden en la Elección Profesional*. Tesis de Grado presentada para optar al Título de Master en Educación Área Administración. UNIVERSIDAD DE ANTIOQUIA Facultad de Educación Pasto - Colombia. Retrieved from <http://ayura.udea.edu.co:8080/jspui/bitstream/123456789/1000/1/CC0523.pdf>

Camarena, G. B. O. (2009). EL PROGRAMA DE ORIENTACIÓN EDUCATIVA EN BACHILLERATO COMO MEDIADOR EN LA ELECCIÓN DE CARRERA. *Revista Mexicana de Investigación Educativa. Ciudad de México.*, (ISSN: 1405-6666). Retrieved from <http://www.redalyc.org/pdf/140/14004109.pdf>

Carrasco, E. (2014). No Title Elección de carrera en estudiantes de nivel socioeconómico bajo de universidades chilenas altamente selectivas. *SciELO*. <https://doi.org/DOI:http://dx.doi.org/10.4067/S0718-45652014000100004>

Casimiro Dionicio, R. L. (2021). La influencia de los estereotipos de género en la elección de carreras STEM en estudiantes de secundaria: aplicación del modelo socio-cognitivo del desarrollo de la carrera (SCCT). Tesis para optar el Título Profesional de Licenciado en Psicología. 2021. Editorial: Universidad San Ignacio de Loyola. Disponible en: <http://repositoio.usil.edu.pe/handle/USIL/11837>

Castro Villalobos, L. & nciso Cedeño, Y. (2022). Estereotipos de género en un grupo de estudiantes de la Facultad De Contaduría Pública de la Universidad Santo Tomás De Villavicencio. [Trabajo de grado, Universidad Santo Tomás]. Repositorio <http://hdl.handle.net/11634/46787>. URL: <https://repositorioslatinoamericanos.uchile.cl/handle/2250/3663361>

Cavazos., R. A. G. (2003). "Los motivos en la elección de carreras en las profesiones de alta y baja demanda." (Tesis de Maestría). Universidad Autónoma de Nuevo León, Monterrey Nuevo León.

Chavez, Y. L., Zumaeta, G. M. P., Tarrillo, J. J. C., & Zea, K. L. H. (2022). Emprendimiento social: diferencias demográficas y género en estudiantes universitarios/as peruanos/as. *Prisma Social: revista de investigación social*, (38), 244-265. URL: <https://revistaprismasocial.es/article/view/4690>

Chiroleu, A. (2009). N. *Revista Iberoamericana de Educación, n.º 48/5* –(ISSN: 1681-5653). Retrieved from [file:///C:/Users/ejbar/Downloads/2740Chiroleu\(1\).pdf](file:///C:/Users/ejbar/Downloads/2740Chiroleu(1).pdf)

Correa Mejía, Dominique Mayerny, Abarca Guangaje Angie Nataly, Baños Peña Cristhy Anali y Aorca Shtefanny Gabriela Analuisa (2019): "Actitud y aptitud en el proceso del aprendizaje". *Revista Atlante: Cuadernos de Educación y Desarrollo*. Disponible en: <https://www.eumed.net/rev/atlante/2019/06/actitud-aptitud-aprendizaje.html>

- Covarrubias, M.L. (2003). "Elección de carrera: Aspectos que influyen en los jóvenes". (Tesis de Licenciatura). Universidad Pedagógica Nacional, Unidad Ajusco. Ciudad de México. Retrieved from, <http://200.23.11351/pdf/29909.pdf>
- De León, M. T., & Briones, D. L. R. (2012). LA CORRELACIÓN ENTRE LOS INTERESES, APTITUDES Y PREFERENCIAS VOCACIONALES CON LA CARRERA QUE ELIGEN AL EGRESAR LOS ALUMNOS DEL CENTRO DE BACHILLERATO TECNOLÓGICO AGROPECUARIO, MÉXICO, (ISSN 2224-2643). Retrieved from <https://dialnet.unirioja.es/servlet/articulo?codigo=4228900>
- Debeljuh, P., Foutel, M., & Torres Carbonell, S. (2022). Barreras y desafíos de las Emprendedoras STEM. *360: Revista De Ciencias De La Gestión*, (7). URL: <https://revistas.pucp.edu.pe/index.php/360gestion/article/view/25843>.
- Delgado, G. (2006). La intersección entre el género y el estrato socioeconómico en la elección de profesión del área de la salud. *Gaceta Médica de México, Volumen: 1*(ISSN: 0016-3813), 467–476. Retrieved from [https://conricyt13.summon.serialssolutions.com/#!/search?ho=t&fvf=IsFullText,true,f%7CContent%7CJournal%7CType%7CJournal%7CArticle%7Cf&l=es-ES&q=eleccion de carrera genero](https://conricyt13.summon.serialssolutions.com/#!/search?ho=t&fvf=IsFullText,true,f%7CContent%7CJournal%7CType%7CJournal%7CArticle%7Cf&l=es-ES&q=eleccion%7Cde%7Ccarrera%7Cgenero)
- Dígrisia L. (2009). "EDUCACIÓN UNIVERSITARIA: ACCESO, ELECCIÓN DE CARRERA Y RENDIMIENTO." *Editorial de La Universidad Nacional de La Plata (EDULP)*, ND(978-950-34-0534-5), ND. Retrieved from <http://sedici.unlp.edu.ar/handle/10915/34204>
- Donoso S, S. E. (2007). ANALISIS DE LOS MODELOS EXPLICATIVOS DE RETENCION DE ESTUDIANTES EN LA UNIVERSIDAD: UNA VISION DESDE LA DESIGUALDAD SOCIAL. *Estudios Pedagógicos, XXXIII, N°(0716-050X)*, 7–27. <https://doi.org/29.367.759>
- Garbanzo, G. M. (2007). No Title Factores asociados al rendimiento académico en estudiantes universitarios, una reflexión desde la calidad de la educación superior pública. *Revista Educación, 31(1)*(0379-7082, 2007), 43–63. Retrieved from <http://www.redalyc.org/pdf/440/44031103.pdf>
- García Hernández, F. R., & Quevedo-Aguado, M. P. (2022). Creencias de estudiantes universitarios sobre responsabilidad: implicaciones para la intervención social. *Persona*, (025(1), 93-115. [https://doi.org/10.26439/persona2022.n025\(1\).5738](https://doi.org/10.26439/persona2022.n025(1).5738). URL:<https://revistas.ulima.edu.pe/index.php/Persona/article/view/5738>
- García, G. P. (2002). Las carreras en Ingeniería en el marco de la globalización: una perspectiva de género. *Revista Latinoamericana de Estudios Educativos (México)*, (ISSN: 0185-1284). Retrieved from <http://www.redalyc.org/articulo.oa?id=27032305>
- González, A. (2014). Didactemas: Tipos de investigación. Facultad de Humanidades y Ciencias de la Educación. Universidad Autónoma de Coahuila.
- González, Maura, V. (2009). AUTODETERMINACIÓN Y CONDUCTA EXPLORATORIA. ELEMENTOS ESENCIALES EN LA COMPETENCIA PARA LA ELECCIÓN PROFESIONAL RESPONSABLE. *REVISTA IBEROAMERICANA DE EDUCACIÓN. N.º 51* (200(1022–6508). Retrieved from <https://rieoei.org/historico/documentos/rie51a10.htm>
- Jara, L. (2010). Identidad vocacional en el tránsito del colegio a la universidad y en los primeros años de vida universitaria. *Lima, Universidad De*, (SN: 1560-6139). Retrieved from <http://www.redalyc.org/pdf/1471/147118212008.pdf>
- Jiménez, J., & Salas, M. (1999). ANÁLISIS ECONÓMICO DE LA ELECCIÓN DE CARRERA UNIVERSITARIA. UN MODELO LOGIT BINOMIAL DE DEMANDA PRIVADA DE EDUCACIÓN, (84-482-2025–0). Retrieved from <https://web2011.ivie.es/downloads/docs/wpasec/wpasec-1999-03.pdf>
- Klubitschko, D. (1980). EL ORIGEN SOCIAL DE LOS ESTUDIANTES DE LA UNIVERSIDAD DE BUENOS AIRES. ND. Retrieved from <http://bibliotecavirtual.clacso.org.ar/Argentina/igga-uba/20100413094208/dt34.pdf>

Lagarde Marcela. 2018. "Género y feminismo: desarrollo humano y democracia. Ciudad de México: Siglo XXI EDITORES. ISBN:978-607-03-0963-2. 269 p. Sociología -política.

Latiesa, M. (1987). No Title Demanda de educación superior: evaluaciones y condicionamientos de los estudiantes en la elección de carrera. *Reis*, (ISSN:48/89 pp. 101-139). Retrieved from [http://www.reis.cis.es/REIS/PDF/REIS\\_046\\_07.pdf](http://www.reis.cis.es/REIS/PDF/REIS_046_07.pdf)

Maldonado, M. P. (2006). *No Title La influencia que tiene el perfil socioeconómico en la elección de la carrera en los alumnos de la escuela de Trabajo Social de la Universidad Don Vasco A.C.* Universidad Don Vasco A.C. Retrieved from <http://www.remeri.org.mx/tesis/INDIXE-TESIS.jsp?type=1&search2=&search=UNAM&ind=1676&step=50&order=1&asc=0>

Montero-Bagatella, Juan Carlos. (2013). El concepto de seguridad en el nuevo paradigma de la normatividad mexicana. *Región y sociedad / año xxv / no. 58.* 2013. issn 1870-3925. Disponible en: <http://www.scielo.org.mx/pdf/regsoc/v25n58/v25n58a7.pdf>

Orozco Blum Lorena Andrea. (2009). *VARIABLES QUE INCIDEN EN LA ELECCIÓN DE CARRERA Y CASA DE ESTUDIOS, EN LA PERSPECTIVA DEL GÉNERO.* (Tesis de grado) Universidad de Chile Facultad de Economía y Negocios Escuela de Economía y Administración, Santiago de Chile. Retrieved from ND. URL: <https://repositorio.uchile.cl/bitstream/handle/2250/111782/Tesis%20Lorena%20Andrea%20Orozco%20Blum.pdf?sequence=1&isAllowed=y>

Peñañiel Moncayo, Isabel Romané, Flores Dávila Jaime Vinicio y Vaca Zambrano Segundo Enrique (2019): "Percepción de estudiantes universitarios con respecto a la elección de su carrera profesional - una decisión de gran trascendencia", *Revista Atlante: Cuadernos de Educación y Desarrollo* (febrero 2019). En línea: <https://www.eumed.net/rev/atlante/2019/02/estudiantes-carrera-profesional.html/hdl.handle.net/20.500.11763/atlante1902estudiantes-carrera-profesional>. ISSN: 1989-4155

Ranero-Castro, M. . (2018). Mujeres y academia en México: avances, retos y contradicciones. *Revista Eduscientia. Divulgación De La Ciencia Educativa*, 1(1), 72–88. URL: <https://eduscientia.com/index.php/journal/articulo/view/9>

Salas Velasco & Martin Cobos (2004). La demanda de educación superior: un análisis microeconómico con datos de corte transversal. *Revista de Educación*, (0034-8082). Retrieved from <https://dialnet.unirioja.es/servlet/articulo?codigo=2057279>

Santos Miranda Pinto, M., Francisca Monteiro, A., & Meneses Osório, A. J. . (2022). Pensamiento Crítico, Creatividad y Pensamiento Computacional en la Sociedad Digital. *Revista Prisma Social*, (38), 1–4. Retrieved from; <https://revistaprismasocial.es/article/view/485>

Torres, González Obdulía. Pau, Bernadette. (2011). "Techo de cristal" y "suelo pegajoso". La situación de la mujer en los sistemas alemán y español de ciencia y tecnología. *CTS: Revista iberoamericana de ciencia, tecnología y sociedad*, ISSN 1668-0030, Vol. 6, Nº. 18, 2011. URL: <https://dialnet.unirioja.es/servlet/articulo?codigo=3716827>

Vercellino, S., Gibelli, T. I., & Chironi, J. M. (2022). Caracterización de los/as ingresantes a carreras de ciencias aplicadas de la Universidad Nacional de Río Negro. *Revista Argentina de Educación Superior*, (24), 25-45. URL: [Dialnet-CharacterizacionDeLosasIngresantesACarrerasDeCienci-8512745%20\(1\).pdf](http://dialnet-CharacterizacionDeLosasIngresantesACarrerasDeCienci-8512745%20(1).pdf)

Vries, D. (2008). CONCLUSIONES A CONTRAPELO. LA APORTACIÓN DE DISTINTAS CARRERAS UNIVERSITARIAS A LA SATISFACCIÓN EN EL EMPLEO. *Revista de La Educación Superior*, Vol. XXXVI(0185–2760.), 67–84. Retrieved from [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S0185-27602008000200005](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-27602008000200005)

**Perception of the conflict in the students of the Universidad Tecnológica de León****Percepción del conflicto en el estudiantado de la Universidad Tecnológica de León**

HERNÁNDEZ-CASTILLO, Adolfo†, ARREDONDO-MUÑOZCANO, Ana María del Carmen, PADILLA-GUTIÉRREZ, Luz Aurora and GONZÁLEZ-ARREDONDO, Liliana

*Universidad Tecnológica de León, Mexico.*

ID 1<sup>st</sup> Author: *Adolfo, Hernández-Castillo* / ORC ID: 0000-0003-2105-1846, CVU CONACYT ID: 1014136

ID 1<sup>st</sup> Co-author: *Ana María del Carmen, Arredondo-Muñozcano* / ORC ID: 0000-0001-7252-6894, CVU CONACYT ID: 1014278.

ID 2<sup>nd</sup> Co-author: *Luz Aurora, Padilla-Gutiérrez* / ORC ID: 0000-0003-4183-8777, CVU CONACYT ID: 1014262

ID 3<sup>rd</sup> Co-author: *Liliana, González-Arredondo* / ORC ID: 0000-0002-1692-9602, Researcher ID Thomson S-8366-2018, CVU CONACYT ID: 563829

DOI: 10.35429/JUM.2022.16.6.20.28

Received July 30, 2022; Accepted December 30, 2022

**Abstract**

The objective of the work was to identify at the Technological University of León (UTL) the perception that students of the Higher Technical University level (TSU) have of conflict as a basis for promoting actions for a culture of non-violence and peace. To this end, a diagnostic instrument was developed and applied to the student population of the first semester of all careers, in the period September-December 2020. Subsequently, the analysis was carried out and the results were organized into four categories of the conflict: a. Purpose of the conflict; b. Perspective of the conflict; c. Cultural beliefs; d. Conditions of Conflict. The results show that the students of the UTL perceive conflict only in its dysfunctional modality that affects interpersonal relationships; it also considers that conflict depends on each person's interpretation of the external stimulus; the degree of ignorance that culture itself influences the perception of conflict is highlighted; finally, there is consensus that most conflicts are the result of a poor organizational structure. Based on these results, the aspects that must be considered to elaborate strategies to build an environment of culture of peace are highlighted.

**Conflict, Culture, Tolerance**

**Resumen**

El objetivo del trabajo fue identificar en la Universidad Tecnológica de León (UTL) la percepción que los estudiantes del nivel Técnico Superior Universitario (TSU) tienen del conflicto como base para promover acciones por una cultura de no violencia y paz. Para ello, se elaboró y aplicó un instrumento de diagnóstico a la población estudiantil del primer cuatrimestre de todas las carreras, en el periodo septiembre-diciembre del 2020. Posteriormente, se realizó el análisis y los resultados se organizaron en cuatro categorías del conflicto: a. Propósito del conflicto; b. Perspectiva del conflicto; c. Creencias culturales; d. Condiciones del conflicto. Los resultados dejan ver que el estudiantado de la UTL percibe al conflicto solo en su modalidad disfuncional que afecta las relaciones interpersonales; también considera que el conflicto depende de la interpretación que cada persona haga del estímulo externo; se resalta el grado del desconocimiento de que la propia cultura influye en la percepción del conflicto; por último, existe consenso de que la mayoría de los conflictos son el resultado de una estructura organizacional deficiente. A partir de estos resultados, se destacan los aspectos que deben considerarse para elaborar estrategias para construir un ambiente de cultura de paz.

**Conflicto, Cultura, Tolerancia**

**Citation:** HERNÁNDEZ-CASTILLO, Adolfo, ARREDONDO-MUÑOZCANO, Ana María del Carmen, PADILLA-GUTIÉRREZ, Luz Aurora and GONZÁLEZ-ARREDONDO, Liliana. Perception of the conflict in the students of the Universidad Tecnológica de León. *Journal University Management*. 2022. 6-16:20-28.

† Researcher contributing as first author.

## Introduction

Different ways of being and perceiving reality is what makes people unique, with needs and desires that in many cases may even be opposed, which is often the basis of social conflicts. To paraphrase German Silva (2008), conflict itself is not the root of problems, it is only the manifestation of the way in which diversity is managed. In fact, a conflict can be managed in such a way that it can foster social cohesion or promote a favourable change for society; but, if one does not learn to negotiate, or if one does not develop the value of tolerance for diversity, then the conflict will manifest itself in some form of violence (Silva García, 2008).

If we look at the etymological origin, the term conflict comes from two Latin words: cum, company; and fligēre, blow, hence it is associated with the idea of a "fight" between two or more people. But this "fight" is sometimes with oneself; this notion is expressed in the dictionary of the Real Academia de la Lengua Española, in its 23rd edition, which defines conflict as the coexistence of contradictory tendencies in the individual capable of generating anguish and neurotic disorders (Real Academia Española, 2022, conflict).

Regardless of whether the conflict is external or internal, the important thing is to understand its nature in order to take advantage of and enhance its functional aspects and minimise its negative effects, so that it becomes a source of personal and social development, thus favouring a culture of peace. This is the purpose of this paper.

### *Perception and conflict*

Perception is a mechanism that allows us to establish a link with the world around us. According to the Royal Spanish Academy, perception is the inner sensation that results from a material impression produced by the senses (Real Academia Española, 2022, percepción), but it also includes an interpretation of what is perceived as symbols, whose meanings depend on many factors, including previous experiences, the state of mind, the circumstance in which the symbol appears, the personality of the individuals, among others.

This consideration of perception is extremely important because this is where we find the source of most interpersonal conflicts. A word, a gesture, an action or omission, etc., becomes a source of conflict when one or more people perceive it as a threat to their self, to their emotional and personal stability, to their belief system; and the response to this threat will manifest itself either in the form of competition (fighting for a good considered scarce) or dissent (differences of opinion) (Vold, 1967, cited by Germán Silva, 2008). When such competition or dissent corresponds to the perception of social groups or communities, we speak of social divergence. In terms of Germán Silva (2012), divergence refers to the recognition of diversity (Silva García, 2012), and then we move from the level of interpersonal conflicts to that of social conflicts and, in both cases, the source of conflict will always be perception, so we can already see the importance of dialogue as the best alternative for its resolution.

### *Conflict management and culture of peace*

According to Silva García (2012), social divergence is the manifestation of dissent involving diversity of beliefs and values:

"The concept of social divergence refers to a dynamic process of interaction between lines of social action that maintain a dialectical relationship, which generate a field of separation when distinguished by differences on interests, attitudes or ideologies existing between their agents, which can provoke conflict and represents a situation of diversity." (Silva García, 2012)

According to the above definition, divergence generates a separation between social groups which, at the same time, is the space of interaction for dialogue; the question here is how big is that separation that will constitute the margin of tolerance between different perceptions, so that there is room for agreements. The value of Tolerance is based on respect for the ideas, beliefs or practices of others when they are different or contrary to one's own (Real Academia Española, 2022), but such respect is based, in turn, on the recognition of the dignity of the person, which should not be subject to arbitrary interpretations. In this sense, a culture of peace can only be built when conflict management is based on the recognition of human dignity.

On the basis of tolerance, the next step is to reflect together on the external and internal causes of conflict between people or social groups, with the intention of finding effective solutions not only in the short term, but also in the long term.

Conflicts can occur on a personal or social level, and in any sphere, be it in the family, with friends, at work, or with a country's system of government, among others. How to deal with conflict will depend on the context and the type of conflict: whether it has arisen from a clash of personalities, which may be fortuitous; or whether it is the result of a social structure that systematically produces conflict - sometimes conflict exists because of the way a work team is organised, and often it may be the result of generic thinking derived from one's own culture.

The perception of conflict generates different attitudes. The response to the conflict situation will depend on whether it is perceived as functional or dysfunctional, whether it is seen as real or dependent on our perception, or whether it is the product of individual experiences or a reflection of our own culture; even the response will vary depending on whether the conflict is seen as arising from a clash of personalities or simply as a result of poor organisation.

The above issues can be summarised in the following categories of perception of conflict

- Purpose. This refers to what is expected from the conflict. It will be functional if the conflict is perceived as an opportunity to strengthen interpersonal relationships and generate identity; or dysfunctional, if it is only seen as an obstacle and affects social interaction.
- Perspective. This is the consideration of whether the conflict is objective (coming from the outside), or subjective (that an event is interpreted as conflictive, according to the experience of each individual). This makes it possible to understand why what may seem conflictive to one person may not be to another).

- Beliefs. This is the assumption that the conflict is perceived personally or whether it is recognised as a result of the influence of the socio-cultural environment. This category is extremely important, because it is difficult for individuals to realise the influence of their own culture unless they have the opportunity to learn about the diversity of other cultures, which allows for the recognition of both commonalities and differences.
- Conditions. This refers to the behavioural and organisational aspect. Conflicts are perceived as arising from the specific behaviours of each individual, i.e. when it is considered that by "nature" there are people who are conflictual for teamwork and others who are more affable; or it is perceived that it all boils down to a problem of organisational structure or lack of planning, so that if the right structural conditions are in place, conflicts will be considerably reduced.

### Problem statement

Since 2020, the Technological University of León, in collaboration with ANUIES (National Association of Universities and Higher Education Institutions), has formed a Culture of Peace Committee, whose purpose is to generate actions that contribute to the creation of peaceful and non-violent environments. Several working groups were established, one of which was specifically designated to develop research projects on this topic. One of the first tasks was to identify the educational community's perception of conflict so that, on the basis of these notions, concrete actions to prevent and resolve conflicts could be justified. To this end, it was decided to start with the student body, specifically with the newly admitted students, in the period September-December 2020; the question that guided this study was: What is the perception that the student body of the Universidad Tecnológica de León has of conflict? Subsequently, as a result of the information obtained, strategies for conflict resolution and management would be designed.

**General objective**

The general objective of the research was to identify the perception that students at the Universidad Tecnológica de León (UTL) have of conflict as a basis for promoting actions for a culture of non-violence and peace.

**Method**

The method used was exploratory, in order to find out roughly the ideas that the students had about conflict, as well as their empirical way of handling it.

A simple questionnaire was developed and applied to a random sample stratified by gender, shifts, campus and academic area in order to identify the student body's idea or perception of the conflict and, consequently, to find elements for its adequate management. For this study, only the Central Campus and Campus II were considered, and the Acámbaro Campus was omitted. The survey was applied to 1215 students in the first semester of the period September-December 2020, which represented 40.5% of the newly admitted population, of which 613 were female (50.5%) and 602 were male (49.5%). Table 1 shows the socio-demographic data from the survey:

| Total respondents | Gender        | Shift | Campus                | Area |                |                  |                         |     |     |
|-------------------|---------------|-------|-----------------------|------|----------------|------------------|-------------------------|-----|-----|
| 1215              | Female (1321) | 613   | Morning               | 1038 | Central Campus | 868              | Economic-administrative | 571 |     |
|                   |               |       | Evening               | 154  |                | Electromechanics | 335                     |     |     |
|                   | Male (1679)   | 602   | Evening depressurised | 23   | Campus II      | 347              | Sustainability          | 110 |     |
|                   |               |       |                       |      |                |                  |                         | ICT | 199 |
|                   |               |       |                       |      |                |                  |                         |     |     |

**Table 1** Socio-demographic data from the survey  
*Source: UTL 2020*

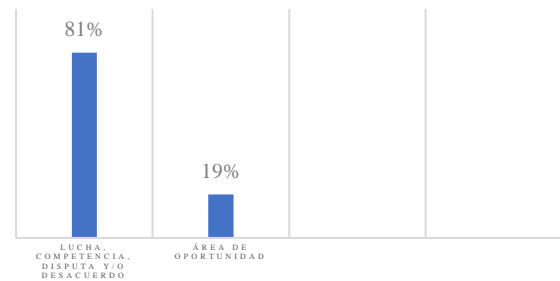
**Results**

The survey responses were classified under the four headings of conflict described above: purpose, perspective, beliefs and conditions.

*Purpose of conflict*

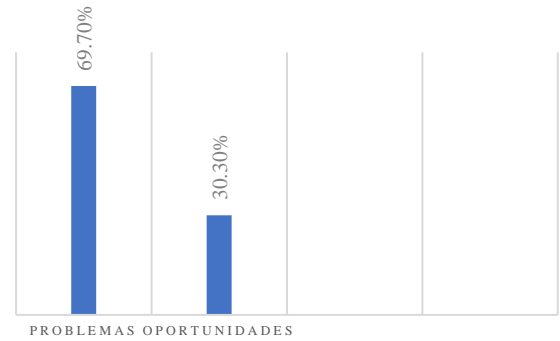
When most people hear the term "conflict", they almost certainly associate it with fights, misunderstandings, anger, disagreements, etc., and few see it as functional, in the sense that it is conducive to change, strengthens interpersonal bonds or helps resolve disagreements. Of the 1215 respondents, 85% associated the term "conflict" with fighting, competition, dispute and disagreement (Graphic 1), and almost 70% considered it to be more of a problem than an opportunity (Graphic 2).

IN YOUR CONCEPT OF CONFLICT, YOU ASSOCIATE THE WORD WITH...



**Graphic 1** Concept of conflict  
*Source: UTL 2020*

FOR YOU A CONFLICT GENERATES...

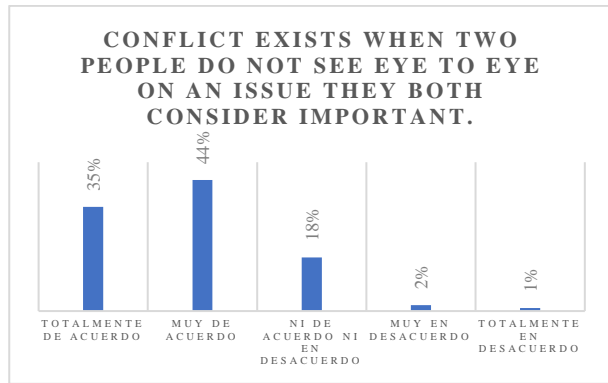


**Graphic 2** Consequences of conflict  
*Source: UTL 2020*

*Perspective of the conflict*

Conflict can be considered from an objective perspective, that is, as an event that happens to the individual, for which he/she has no control or responsibility; in this sense, it is an independent reality that is alien to the person, and forms part of the circumstances that inevitably occur and we can only respond to them. For its part, the subjective perspective implies the interpretation that an individual makes of what happens to him or her and values it as conflictive or not. In any case, both perspectives do not contradict each other, on the contrary, they complement each other, so the interest was rather to identify whether the students perceived this complementarity or whether they were inclined towards one of the perspectives. The survey showed a tendency to consider the subjective aspect of conflict and that different opinions on the same issue - dissent - is an important source of conflict, as shown in graphic 3:





**Graphic 3** Causes of conflict

Source: UTL, 2020

### Beliefs

This aspect is perhaps the most difficult to identify because, although there is a tacit recognition of the influence of culture, the reality is that many of the beliefs are housed in the subconscious and are manifested through behaviours that are rarely rationalised. According to Antonio Díez (2017), cultural heritage is the a priori framework through which people apprehend reality; it is constituted by socially assumed beliefs that are housed in the subconscious, and are the background of conscious ideas (Díez Patricio, 2017). In other words, a discourse can be consciously constructed on a given topic, but what gives it meaning is the belief, which constitutes the cultural framework of both the sender and the receiver.

The way to recognise the originality of one's own beliefs, or whether they are the result of the culture in which one lives, is through knowledge of other cultures. Only when the individual meets people from other places can he/she identify commonalities and differences in ways of thinking and being, which allows for an evaluation of the respective belief systems.

G. Hofstede (1980), cited by Lucas Marín (2013) was a social psychologist who conducted a study at IBM to identify cultural differences in all IBM subsidiaries around the world, to show how cultural environments influenced the culture of organisations. From his study, six basic dimensions emerged that have allowed for the identification of cultural differences in organisations (Hofstede, 1980):

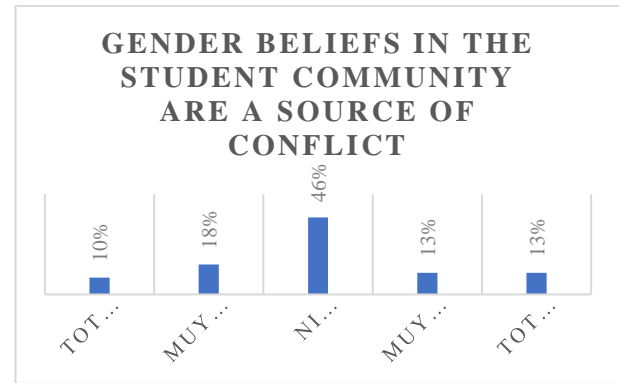
- **Hierarchical distance is the difference between egalitarianism and authoritarianism.** Hofstede found that countries such as Denmark and Austria showed more egalitarian attitudes, in contrast to the Philippines or Mexico where authoritarianism is experienced as an everyday occurrence.
- **Individualism-collectivism.** It is the difference between individual and collective work. Here, too, notable differences can be seen, for example, a country like the United States promotes more individualistic work, in contrast to the community dimension in countries like Colombia or Taiwan.
- **Control of uncertainty.** It is the gap between the desire for security and the acceptance of risk. Some cultures are entrepreneurial and therefore risk-taking, while others prefer stability and therefore avoid risk-taking.
- **Long-term orientation.** It is the distance between valuing the future and the present. Cultures that value the future seek long-term rewards, value thrift, perseverance and the ability to adapt. Those who value the present seek rewards in the short term.
- **Gender attitude.** It refers to the naming of masculine and feminine cultures as a product of the social construction of a particular community. There are cultures whose concept of the feminine includes the importance of social relations and service, while the masculine is associated with achieving goals and earning a salary, as a status of power. In other cultures, however, these concepts are quite the opposite, as demonstrated by anthropologist Peggy Reeves Sanday's (2002) study in Indonesia, where she found communities where men and women do not compete with each other, and where women control the land through inheritance (Peggy Reeves, 2002).



- **Forbearance vs restraint**, is the difference between a self-indulgent or repressive attitude to life. Work is a clear example of this: there are countries like Canada or Denmark whose attitude to work is one of balance with personal and social life; but there are others, like Mexico, where rest or leisure is often perceived as the enemy of productivity, turning people into virtual slaves or workaholics.

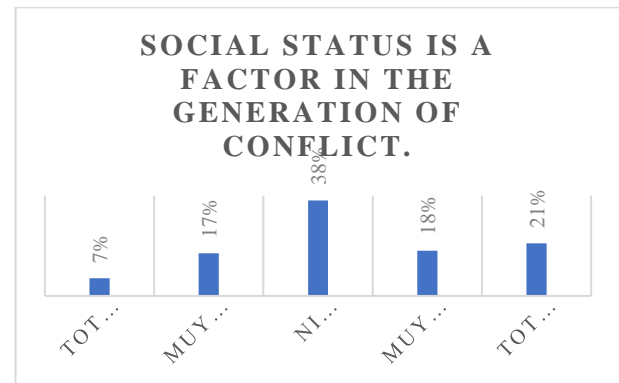
Each pole of Hofstede's (1980) dimensions gives a cultural context that explains the perception of conflict. For example, in the case of "hierarchical distance", if people in an organisation consider authoritarianism to be an inherent feature of the boss's role, if they are subordinates they will tend towards submissive obedience or silent complaint; they will think that, after all, "that's the way things are"; and, if they are in a position of power, they are likely to reproduce authoritarian attitudes, and this will be so because of role beliefs that are permeated by the culture. The same can be said for each and every dimension, the point is that people naturally do not realise this until they compare their way of looking at reality with that of someone else. This invisibility of cultural influence is behind most conflicts, which is why it is so important to work on a strategy to make them visible in order to improve the conditions for reaching real agreements.

For this reason, the survey included questions on whether cultural and gender beliefs are a source of conflict. It was to be expected that they would deny or minimise the influence of such beliefs on the perception of conflict, but the question was asked anyway to confirm the assumption. Thus, 46% remained neutral (Graphic 4), and the rest were polarised between those who did acknowledge the influence of the beliefs (10% Strongly Agree, 18% Strongly Agree) versus those who denied it (13% Strongly Agree, 13% Strongly Disagree). The same was true for the questions on social status (Graphic 5) and ideologies (Graphic 6); they were expected to maintain a neutral stance:



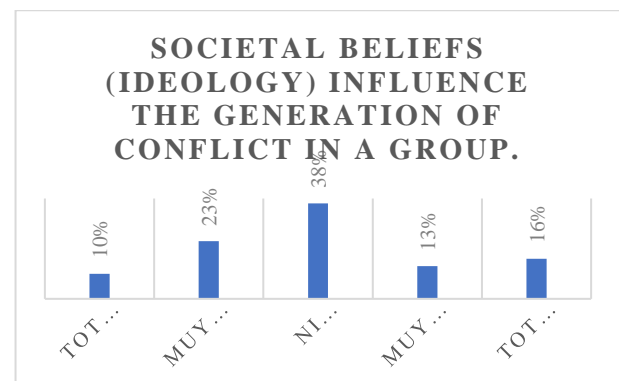
**Graphic 4** Perception of conflict according to gender beliefs

Source: UTL, 2020



**Graphic 5** Perception of conflict according to social status

Source: UTL, 2020



**Graphic 6** Perception of conflict according to ideology

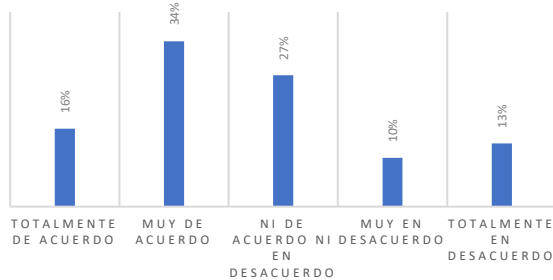
Source: UTL, 2020

Neutrality with respect to questions about beliefs reaffirms the idea that their influence is not consciously perceived. For that reason, ideas about whether a boss should be authoritarian or not, whether individual or team work is better, whether safety is better than risk, whether it is right to expect someone to be a man or a woman, or whether to be more self-congratulatory or not, will depend on culturally inherited beliefs.

*Conditions*

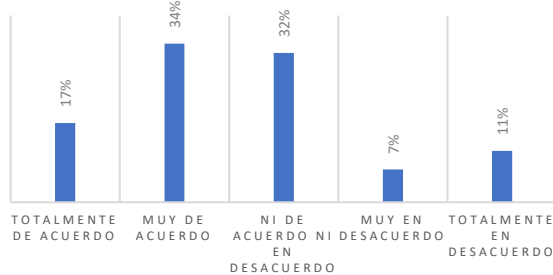
Conflict can be seen as a result of diversity or as a reflection of an organisational structure. The former refers to the very diverse personalities within groups and the roles they play in collaborative work. For example, there are dominant and follower personalities; introverted and extroverted people; aggressive, passive or assertive people; men and women with a wide range of ideas about gender roles, politics, religion, sports and other issues. This diversity is potentially a source of conflict, but perhaps the real problem is not the diversity itself, but the way in which individuals are organised, which makes conflict the result of an unjust or simply badly structured system. And it is precisely this idea that conflict stems mainly from a lack of planning (Graphic 7), organisation and structure (Graphic 8), which stood out in the survey with almost 50% of the respondents (Graphic 9):

LACK OF PLANNING WHEN CARRYING OUT COLLABORATIVE WORK GENERATES CONFLICTS



**Graphic 7** Source of conflict due to lack of planning  
*Source: UTL 2020*

DISORGANISATION IN COLLABORATIVE WORK LEADS TO CONFLICT

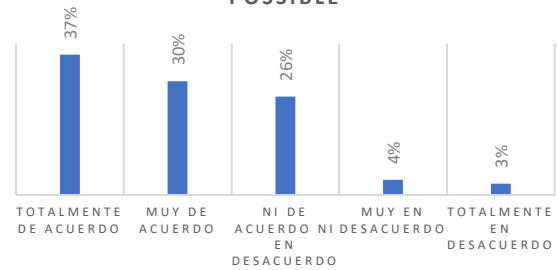


**Graphic 8** The source of the conflict due to disorganization  
*Source: UTL 2020*

**Discussion**

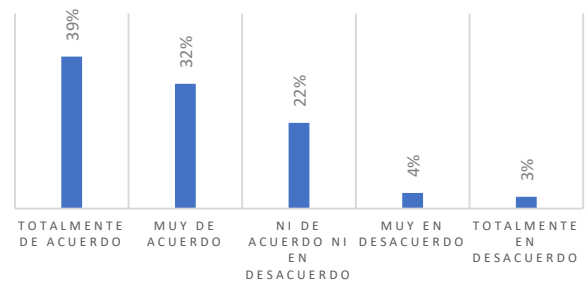
In addition to the students' perception of conflict, they were asked about the ways in which they commonly deal with conflict. Almost 70% of students were inclined to seek to avoid conflict whenever possible (Graphic 9); but if it inevitably occurs and affects them directly, they do try to resolve the conflict through dialogue (Graphic 10). Regarding the item on what they do if they have a conflict with colleagues, 76% of respondents chose the option "I look for a solution that involves a compromise on both sides" (Graphic 11). On the other hand, if they witness a conflict, 23% stated that they do not seek to get involved (Graphic 12), but almost 70% answered that they do try to intervene so that the conflict disappears or diminishes (Graphic 13).

CONFLICT IS A SITUATION THAT SHOULD BE AVOIDED WHENEVER POSSIBLE



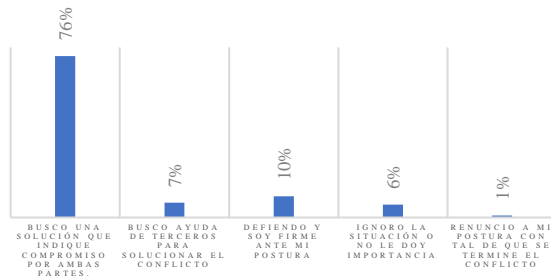
**Graphic 9** Conflict avoidance  
*Source: UTL 2020*

YOU AVOID CONFLICT IN ORDER TO MAINTAIN A GOOD RELATIONSHIP WITH THE GROUP



**Graphic 10** Evasive action in the face of conflict  
*Source: UTL 2020*

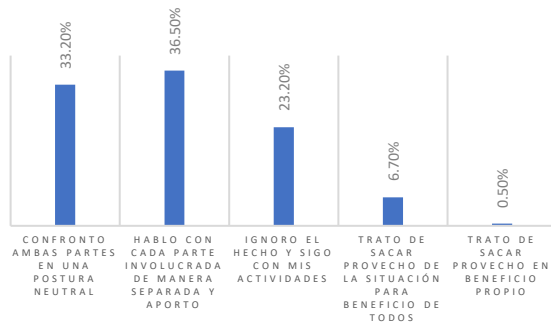
HOW DO I ACT WHEN I HAVE A CONFLICT WITH MY GROUP MATES?



Graphic 11 Acting in the face of conflict

Source: UTL 2020

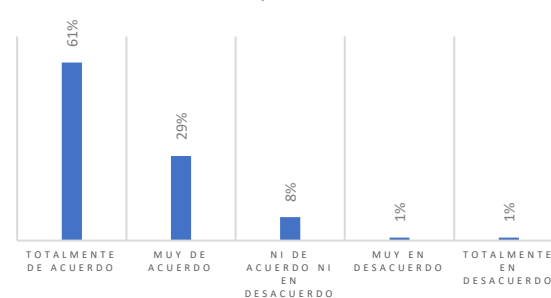
¿HOW DO I ACT WHEN I DETECT A CONFLICT BETWEEN MY COLLEAGUES (AS)?



Graphic 12 Acting in the face of conflict

Source: UTL 2020

WHEN THERE IS A CONFLICT IN WHICH YOU ARE INVOLVED, YOU CONFRONT IT



Graphic 14 Acting in the face of conflict

Source: UTL 2020

Conclusions

UTL students perceive conflict mainly in its dysfunctional form, i.e. as a problem that affects interpersonal relationships, and consider that whether or not it is considered a conflict, to a greater or lesser degree, depends on the interpretation that each person makes of external stimuli, as well as the influence of their own emotions. There is a clear lack of knowledge of the degree to which one's own culture influences perceptions of conflict, and this is precisely one of the best areas in which to work on new projects.

Finally, there was a consensus that many of the conflicts are the result of poor organisational structure or poor planning, so there is a need to develop these kinds of skills.

Given these results, the challenge now is to develop a plan to harness this knowledge in building a peaceful environment, and the following points should be taken into account:

- Recognise conflict as an area of opportunity. It is necessary to highlight the functional aspect of conflict as an agent of change and as a way to improve interpersonal relations and generate identity as a group.
- Promote the development of emotional intelligence. The interpretation of external stimuli as conflictive also depends on emotions, which is why an adequate management of them will help in the regulation of the perception of conflicts and their assertive resolution.
- Making the cultural beliefs that lead to conflict visible. It is necessary to develop a strategy to create awareness of those cultural ideas that exist in general and that, in the end, systematically lead to conflicts.
- Develop planning and organisational skills. Recognising that most of the conflicts in an organisation stem from a deficient organisational structure or planning, it is necessary to work on administrative models based on respect for human needs, as well as on the development of planning strategies.

References

Díez Patricio, A. (2017). *Más sobre la interpretación (II). Ideas y creencias*. Rev. Asoc. Esp. Neuropsiq. 2017; 37(131): 127-143. DOI: 10.4321/S0211-57352017000100008. ISSN 2340-2733. Obtenido de <https://scielo.isciii.es/pdf/neuropsiq/v37n131/08.pdf>

Hofstede, G. (1980). *Culture's consequences. International difference in work-related values*. Beverly Hills: Sage.

Lucas Marín, A., García Ruiz, P. y Llano Aristizábal. (2013). *Sociología de las Organizaciones. Influencia de las tecnologías de la información y la comunicación*. Fragua, Madrid.

Real Academia Española. (1 de marzo de 2022). Conflicto. En *Diccionario de la lengua española*, 23.<sup>a</sup> ed. Obtenido de <https://dle.rae.es/conflicto>

Real Academia Española. (1 de marzo de 2022). Percepción. En *Diccionario de la lengua española*, 23.<sup>a</sup> ed. Obtenido de <https://dle.rae.es/percepcion>

Sanday, Peggy Reeves (2002). *Mujeres en el centro: la vida en un matriarcado moderno*. Cornell University Press. USA.

Silva García, G. (2012). *De la desviación a la divergencia: introducción a la teoría sociológica del delito*. *Derecho y Realidad*. Núm. 19. I semestre de 2012. Facultad de Derecho y Ciencias Sociales, UPTC 159-182. ISSN: 1692-3936. Disponible en [https://revistas.uptc.edu.co/index.php/derecho\\_realidad/article/download/4885/3975/10949](https://revistas.uptc.edu.co/index.php/derecho_realidad/article/download/4885/3975/10949)

Silva García, G. (2008). *LA TEORÍA DEL CONFLICTO. Un marco teórico necesario*. *Prolegómenos. Derechos y Valores*, XI (22), 29-43. [Fecha de consulta 20 de diciembre de 2021]. ISSN: 0121-182X. Disponible en: <https://www.redalyc.org/articulo.oa?id=87602203>

Vold, George B. (1967). *Theoretical Criminology*. Oxford University Press.

## Good practices in the self-transformation of the engineering student in continuous improvement projects

### Buenas prácticas en la autotransformación del estudiante de ingeniería en proyectos de mejora continua

PALOMARES-RUIZ, María Blanca Elizabeth†\*, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ -VILLARREAL, Esteban

*Universidad Autónoma de Nuevo León, Faculty of Mechanical and Electrical Engineering, Mexico.*

ID 1<sup>st</sup> Author: *María Blanca Elizabeth, Palomares-Ruiz* / ORC ID: 0000-0002-4079-6969, Researcher ID Thomson: S-4843-2018, CVU CONACYT ID: 339594

ID 1<sup>st</sup> Co-author: *María Isabel, Dimas-Rangel* / ORC ID: 0000-0001-9450-8080 Researcher ID Thomson: S-4720-2018, CVU CONACYT ID: 374045

ID 2<sup>nd</sup> Co-author: *Arturo Torres Bugdud* / ORC ID: 0000-0003-2214-9394, Researcher ID Thomson: ABE-2852-2020, ArXiv Author ID: Arturo-Torres-Bugdud, CVU CONACYT ID: 216332

ID 3<sup>rd</sup> Co-author: *Esteban Báez Villarreal* / ORC ID: 0000-0003-0112-6660, Researcher ID Thomson: S-5893-2018

DOI: 10.35429/JUM.2022.16.6.29.35

Received July 30, 2022; Accepted December 30, 2022

#### Abstract

Due to the confinement caused by the COVID-19 pandemic in 2020, new academic work practices were established with the support of digital platforms in education, in this context, students who perform the compulsory social service of a Higher Education Unit (DES) of a Public University received advice with the support of tutors for improvement projects applied to the industry. The objective of this work is to publicize the processes that were addressed during the confinement decreed by government authorities, developing an advisory model that allows monitoring the indicators established for each specific case. For the preparation of this article, a qualitative and documentary methodology was implemented, in which a positive impact on its results is highlighted, in addition to disseminating and publishing success stories, enabling the insertion of students in the productive sector.

#### Resumen

Debido al confinamiento causado por la pandemia COVID-19 en el año 2020, se establecieron nuevas prácticas de trabajo académico con el apoyo de plataformas digitales en la educación, en este contexto los estudiantes que realizan el servicio social obligatorio de una Dependencia de Educación Superior (DES) de una Universidad Pública recibieron asesorías con apoyo de tutores para proyectos de mejora aplicados a la industria. El objetivo del presente trabajo es dar a conocer los procesos que se abordaron durante el confinamiento decretado por autoridades gubernamentales, desarrollando un modelo de asesoría que permite dar un seguimiento a los indicadores que se establecen para cada caso específico. Para la elaboración de este artículo se implementó una metodología de corte cualitativo y documental, en la cual se destaca un impacto positivo en sus resultados, además de divulgar y publicar los casos de éxito, posibilitando la inserción de los estudiantes en el sector productivo.

**Social Service, Good Practices, Training**

**Servicio Social, Buenas prácticas, Formación**

**Citation:** PALOMARES-RUIZ, María Blanca Elizabeth, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ -VILLARREAL, Esteban. Good practices in the self-transformation of the engineering student in continuous improvement projects. Journal University Management. 2022. 6-16:29-35.

† Researcher contributing as first author.

## Introduction

As is well known, social service is one of the most important elements in the comprehensive training of students, as it involves various activities that positively build their personal, academic and professional development. During the process, students reflect on the importance of applying their knowledge, skills, aptitudes and attitudes to the society around them, establishing harmonious relations with the institution. While laying the foundations for essential training with the university and possible entry into the labour market, their work ranges from the detection of needs for improvement, the development of proposals, their implementation, evaluation and monitoring to be implemented in industry, highlighting their skills at local, national and international level.

"Social service is an essential part of the modernising process of national and international higher education institutions, as it is an academic activity for the benefit of society and through which university students consolidate their professional training". Amaya, A. A., Ramos, M. C., & Castillo, G. L. (2017)

The present research product aims to document the process to improve the practices of Social Service in the Faculty of Mechanical and Electrical Engineering of the Universidad Autónoma de Nuevo León, Mexico, during the COVID-19 pandemic, promoting the integral self-transformation of the student by presenting successful results in professional practice, with the guidance and orientation of the faculty members of the academic body UANL-275 "Academic and Administrative Management of Higher Education Institutions", step by step feedback with the support of digital platforms, until presenting favourable indicators in their results, which transcend and are of mutual benefit, both for the student as well as for the work centres where the improvements were applied, evidenced in the solution of specific problems, obtaining a product of disclosure in each project, which have been subjected to evaluation by academic peers, once selected have been exposed in various academic conferences, after this they were published in peer-reviewed and indexed journals.

As Águila, C. (2005) mentions, "society is demanding in a different way that the university should not only be the place where universal knowledge is accumulated, but that society should demand that knowledge be applied to its environment, that it should be relevant and that it should have an impact".

Digital education, in recent years, has been increasing social interest, however, due to the global situation of confinement due to the pandemic and the uncertainty of a safe return to face-to-face classes, it was necessary for all educational institutions. "According to data from the United Nations Educational, Scientific and Cultural Organization (unesco), by mid-May 2020 more than 1.2 billion students at all levels of education worldwide had stopped having face-to-face classes in school." (UNESCO, 2020).

Institutions found it impossible to receive students and staff, added to this the intention not to stop education, so options were made for the performance of students, having to have flexible and adaptable alternatives to the rhythms of study and other personal commitments of distance education, mainly those related to work and family obligations.

The performance of social service in higher education, faced with this challenge, had to confront various problems that had to be addressed with innovative proposals, both in terms of adopting and adapting mechanisms, allowing its essence and value to be renewed for the benefit of society and in turn that of the students themselves.

The design of the proposal was carried out in a public university located in the state of Nuevo León in northern Mexico, which has more than 100 industrial parks, most of which are strategically located in the metropolitan area, allowing companies located in the state to have the ideal facilities to move their products to other entities and countries (Somos Industria, 2011).

In this respect, they consider that "thanks to the strengths that Nuevo León has, it is considered the best place to invest in the country, especially if you plan to serve the North American market, the United States and Canada".



The strategic sectors of the state are: aerospace, automotive, biotechnology, household appliances, specialised medical services, information technologies, agri-food, nanotechnology, sustainable housing and interactive media. Ministry of Economy, (2016) The Universidad Autónoma de Nuevo León (UANL) has 29 high schools and 26 faculties, including the Faculty of Mechanical and Electrical Engineering FIME, which has 11 educational programmes, 25 postgraduate programmes and more than 120 Continuing Education courses, its mission is to train competent, competitive and innovative professionals, socially responsible, fully aware of the regional, national and global environment, with principles and values, committed to sustainable, scientific and technological development. To generate timely, relevant and transcendent contributions to the advancement of science, technology, innovation and humanities, and to the improvement of the level of human development of the society of Nuevo León and the country. (FIME, 2022)

In March 2020, the Pandemic caused by COVID-19 was declared worldwide, so government authorities determined strict health measures that led to the confinement, affecting all sectors of society, indicating their gradual reinstatement each of them, however, the education sector was prepared with strict health measures and prevention protocols, at the end of the stages defined by the authorities, so immediately the UANL undertook the digital strategy in academic and administrative activities.

During this process, the academic community adopted new platforms with the support of training courses, as well as adapting the existing ones so as not to stop the training of future engineers at FIME, in addition to the design of complementary strategies such as the case described here, to attend to the students who during this period undertook their compulsory professional internships, as well as their social service, which leads to documenting this good practice.

Under the supervision and guidance of teachers to fulfil the dual purpose of applying the knowledge acquired with measurable results, as well as fulfilling the compulsory social service, this good practice is described in the development of this document.

## Development

The objective of this project is to document the good practices in a Higher Education Institution, promoting the integral self-transformation of the student by presenting successful results in professional practice, with the guidance and orientation of the faculty members of the academic body UANL-275 "Academic and Administrative Management of Higher Education Institutions" with step-by-step feedback, a model was built to monitor the progress of improvements through digital platforms, This was done to achieve favourable indicators in their mutually beneficial results, both for the student and for the work centres where the improvements were applied, evidenced in the solution of specific problems, obtaining a dissemination product in each project evaluated by academic peers, to then present them in various academic congresses, to be published in peer-reviewed and indexed journals.

According to the UNESCO report (2020), as of 30 March 2020, 166 countries had closed their schools and universities. Globally, 87% of the student population was affected by these measures. On the one hand, institutions were unable to receive students and staff, and on the other hand, the intention was not to stop education.

## Methodology to be developed

The implementation of research methodologies is fundamental to integrate new theories or improve existing ones, with the aim of generating enriching knowledge that transforms reality and provides a solution to social, scientific, technological and philosophical problems that arise.

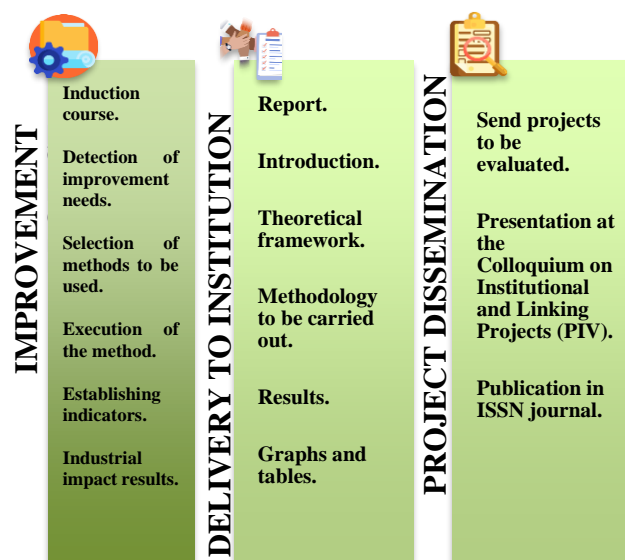
In this study, the documentary methodology was used, which, according to Ibarra, G. (2018) consists of extracting information from various documents to analyse, relate and apply them for a specific purpose, resulting in the categorisation of information to generate reliable and relevant knowledge.

It is also qualitative research, as it aims to describe the qualities of a phenomenon. It seeks a concept that can encompass a part of reality. It is not about proving or measuring to what degree a certain quality is found in a certain given event, but about discovering as many qualities as possible. Palacios, R. (2006).

In this context, the International Journal of Education for Social Justice (2020) indicates that it used a documentary, qualitative methodology at the University of Huelva, Spain, in which "teachers have used different active methodologies before confinement such as collaboration, case studies, cooperative learning, service-learning, peer tutoring, workshops, project work, lectures and exhibitions, having to be adapted to the new reality of confinement".

### Process

With the support of the Microsoft Teams platform, which is a telecommunications software of the Microsoft company created in 2017 and which was used in several educational institutions due to the pandemic caused by COVID-19, it was the means of communication, where meetings and courses were held, in addition to storing files, scheduling the evidence to be delivered and the feedback of the projects carried out by the providers. For its part, at the Autonomous University of Nuevo Leon in the FIME, a process was designed, which comprises three phases, each of which is described as shown in Figure 1.



**Figure 1** Best Practice Process of Social Service in the Industry during the 2020-2022 confinement

Source: Own elaboration

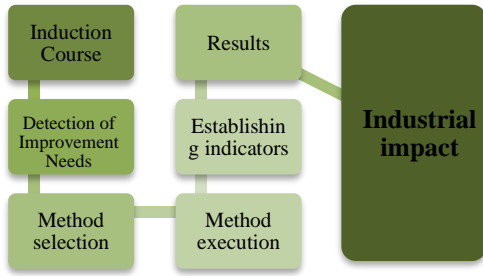
### Phase 1

1. As a starting point, an induction course was given on the activities that would be assigned to them, the mission, vision and values of the institution were shared, as well as the importance of planning, documentation and the necessary academic records in order to make known the structure and organisation of the Faculty of Mechanical and Electrical Engineering.
2. They were trained in the process for carrying out a research project with the methodologies used, such as writing, spelling, correct use of bibliographical references, citations, as well as highlighting the performance criteria used by the journals.
3. A meeting was held with each provider to detect the improvement needs of the company and the department where they were assigned during their stay.
4. Activities were scheduled to upload progress to the Microsoft Teams platform of the results in which the Social Service providers had to deliver, to subsequently receive feedback from the teacher.
5. Indicators were established to determine the goals to be achieved and to design the strategies to obtain them.
6. Once the indicators were established, the selected methodologies were implemented so that the students could put into practice the knowledge acquired during their training, allowing the progress of the improvement to be documented.
7. During the course, doubts were resolved, suggestions were made, meetings were scheduled to review progress and support was provided so that the project to be carried out would adopt the guidelines established by the journals as a reference, with the future vision of achieving successful publication.

Figure 2 describes the first phase of the process of improving the performance of social service in productive projects where the student is inserted in the industry and determines an improvement to be made.

PALOMARES-RUIZ, María Blanca Elizabeth, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ-VILLARREAL, Esteban. Good practices in the self-transformation of the engineering student in continuous improvement projects. Journal University Management. 2022

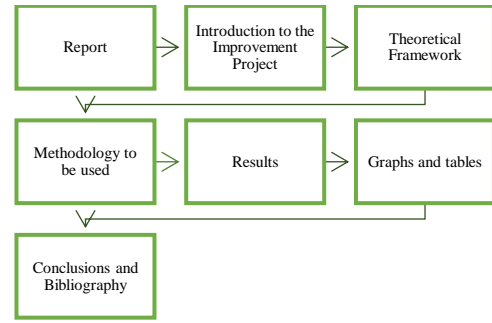




**Figure 2.** Phase one: best practices in industry best practices of social service in industry  
*Source: Own elaboration*

**Phase 2**

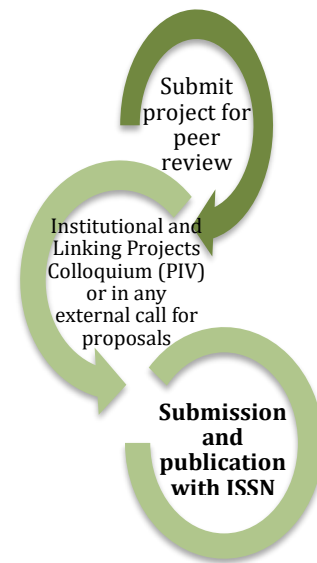
1. In the deliverables to the institution it is requested to elaborate an introduction to the selected improvement project, it can contain the justification and the importance of solving the improvement.
2. The next step was the elaboration of the theoretical framework that supports the technique to be used for the proposed improvement.
3. It continues with the methodology to be developed in the study and describes the research method used to solve it.
4. The report of results should contain the description of the background in relation to the indicators proposed for the improvement.
5. This report should contain in a graphical and editable form the indicators achieved.
6. Likewise, it is important that it contains information on the achievements obtained with follow-up proposals to be applied in the future on continuous improvement plans, basing each piece of information with the support of the consultations carried out and bibliographical references.
7. The selected projects must follow the structuring guide promoted by the institutional and networking projects journal.
8. The processes must be deliverable to the institution by means of reports, which must include the introduction of the improvement project, together with the theoretical framework, methodology, results, graphs or tables showing the changes and conclusions. As shown in figure 3.



**Figure 3** Second phase: deliverables to the institution  
*Source: Own elaboration*

**Phase 3**

1. At this stage, a prior review is carried out by the assessor before it is sent for evaluation by the peer reviewers assigned by the journals.
2. When the article is selected, it is presented at the Colloquium of Institutional and Liaison Projects, due to the fact that this event was constituted as an initial forum for the Faculty's own dissemination, it has motivated the Faculty to attend multiple calls for papers from other congresses in the country, achieving publication in journals. As shown in figure 4.



**Figure 4** Third phase: dissemination of the project  
*Source: Own elaboration*

## Results

The most important achievement was the elaboration of a research product at the beginning, which was subsequently published and shared in congresses organised by FIME, of the 14 students who participated: 13 were success stories, as they obtained improvements in the proposed indicators, and 7 of them were selected to be published in journals with ISSN. As shown in table 1.

| Semester               | Number of students | Completed projects | Published projects |
|------------------------|--------------------|--------------------|--------------------|
| August - December 2020 | 1                  | 1                  | 1                  |
| January - June 2021    | 2                  | 2                  | 2                  |
| August - December      | 5                  | 5                  | 2                  |
| January - June 2022    | 6                  | 5                  | 2                  |

**Table 1** Projects carried out by social service students in the industry during the confinement

Source: Own elaboration

The purpose of the Colloquium of Institutional and Liaison Projects is to disseminate scientific production and promote academic reflection in all fields of engineering at national and international level.

Therefore, the link with the productive sector is fundamental to realise the results of the learning of future engineers when implementing a project in the industry, as well as documenting the strategies for improvement, which in the future will be useful in the processes of the same, creating opportunities for them to later join their staff and transcend professionally.

## Conclusions

After the analysis of the good practices of the Social Service during the pandemic in the Faculty of Mechanical and Electrical Engineering of the Universidad Autónoma de Nuevo León, Mexico, it is concluded that the purpose of the integral self-transformation of the student has borne fruit, as the provider is able to implement strategies, processes and results for continuous improvement in the industry, having the support and advice of the faculty members of the academic body UANL-275 "Academic and Administrative Management of Higher Education Institutions", through constant feedback to obtain successful results, within the framework of the digital strategy implemented with the use of digital platforms and therefore document the evidence with this to achieve that they are published in peer-reviewed and indexed journals during the period 2020-2022.

Likewise, FIME's objective is for the Social Service provider to achieve their professional development in order to stand out in society with their good practices and have their professional growth within the industry.

It represents a joint effort for both the student and the teacher, as they fulfil a dual purpose: on the part of the student to develop a project in the company, generating a positive impact that can insert him/her in the productive sector, and on the other hand, the teacher documents the success stories and increases his/her academic production.

## References

- Águila, C. (2005) "El concepto calidad en la educación universitaria: clave para el logro de la competitividad institucional". Ministerio de Educación Superior. Retrieved 01 August 2022 from: <https://rieoei.org/RIE/article/view/2886/3819>
- Amaya, A. A., Ramos, M. C., & Castillo, G. L. (2017). "El servicio social en los programas educativos en línea". Dialnet. Retrieved 08 August 2022 from: <https://dialnet.unirioja.es/servlet/articulo?codigo=5906403>

Ibarra, G. (2018). “Análisis documental de las metodologías de enseñanza”. Revista Electrónica Desafíos Educativos. REDECI. Retrieved 01 August 2022 from: <http://ciinsev.com/web/revistas/2017-2018/primerEdicion/REVISTA4/03.pdf>

FIME, (2022). “Servicio Social” - Facultad de Ingeniería Mecánica y Eléctrica. Facultad de Ingeniería Mecánica y Eléctrica. Retrieved 12 August 2022 from: <https://www.fime.uanl.mx/tramites/servicio-social>

Palacios, R. (2006). “Investigación cualitativa y cuantitativa Diferencias y limitaciones”. Retrieved 08 August 2022 from: [https://www.insp.mx/resources/images/stories/Centros/nucleo/docs/dip\\_lsp/investigacion.pdf](https://www.insp.mx/resources/images/stories/Centros/nucleo/docs/dip_lsp/investigacion.pdf)

Revista Internacional de Educación para la Justicia Social (2020) “Adaptación de las Metodologías Activas en la Educación Universitaria en Tiempos de Pandemia” revistas UAM. Retrieved 01 August 2022 from: [https://revistas.uam.es/riejs/article/view/riejs2020\\_9\\_3\\_022/13140](https://revistas.uam.es/riejs/article/view/riejs2020_9_3_022/13140)

Secretaría de Economía, (2016). “Nuevo León y sus principales sectores productivos y estratégicos”. Gobierno de México. Retrieved 08 August 2022 from: <https://www.gob.mx/se/articulos/nuevo-leon-y-sus-principales-sectores-productivos-y-estrategicos>

Somos Industria (2011). “Es Nuevo León Líder Industrial”. Retrieved 08 August 2022 from: <https://www.somosindustria.com/articulo/es-nuevo-leon-lider-industrial/0>

UNESCO (2020). “La educación en tiempos de pandemia COVID-19”. CEPAL-UNESCO. Retrieved 08 August 2022 from: [https://repositorio.cepal.org/bitstream/handle/11362/45904/1/S2000510\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/45904/1/S2000510_es.pdf)

.

[Title in Times New Roman and Bold No. 14 in English and Spanish]

Surname (IN UPPERCASE), Name 1<sup>st</sup> Author†\*, Surname (IN UPPERCASE), Name 1<sup>st</sup> Coauthor, Surname (IN UPPERCASE), Name 2<sup>nd</sup> Coauthor and Surname (IN UPPERCASE), Name 3<sup>rd</sup> Coauthor

*Institutional Affiliation of Author including Dependency (No.10 Times New Roman and Italic)*

International Identification of Science - Technology and Innovation

ID 1<sup>st</sup> Author: (ORC ID - Researcher ID Thomson, arXiv Author ID - PubMed Author ID - Open ID) and CVU 1<sup>st</sup> author: (Scholar-PNPC or SNI-CONACYT) (No.10 Times New Roman)

ID 1<sup>st</sup> Coauthor: (ORC ID - Researcher ID Thomson, arXiv Author ID - PubMed Author ID - Open ID) and CVU 1<sup>st</sup> coauthor: (Scholar or SNI) (No.10 Times New Roman)

ID 2<sup>nd</sup> Coauthor: (ORC ID - Researcher ID Thomson, arXiv Author ID - PubMed Author ID - Open ID) and CVU 2<sup>nd</sup> coauthor: (Scholar or SNI) (No.10 Times New Roman)

ID 3<sup>rd</sup> Coauthor: (ORC ID - Researcher ID Thomson, arXiv Author ID - PubMed Author ID - Open ID) and CVU 3<sup>rd</sup> coauthor: (Scholar or SNI) (No.10 Times New Roman)

(Report Submission Date: Month, Day, and Year); Accepted (Insert date of Acceptance: Use Only ECORFAN)

**Abstract (In English, 150-200 words)**

Objectives  
Methodology  
Contribution

**Abstract (In Spanish, 150-200 words)**

Objectives  
Methodology  
Contribution

**Keywords (In English)**

Indicate 3 keywords in Times New Roman and Bold No. 10

**Keywords (In Spanish)**

Indicate 3 keywords in Times New Roman and Bold No. 10

**Citation:** Surname (IN UPPERCASE), Name 1st Author, Surname (IN UPPERCASE), Name 1st Coauthor, Surname (IN UPPERCASE), Name 2nd Coauthor and Surname (IN UPPERCASE), Name 3rd Coauthor. Paper Title. Journal University Management. Year 1-1: 1-11 [Times New Roman No.10]

\* Correspondence to Author (example@example.org)

† Researcher contributing as first author.

**Introduction**

Text in Times New Roman No.12, single space.

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

What is your added value with respect to other techniques?

Clearly focus each of its features

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

Explanation of sections Article.

**Development of headings and subheadings of the article with subsequent numbers**

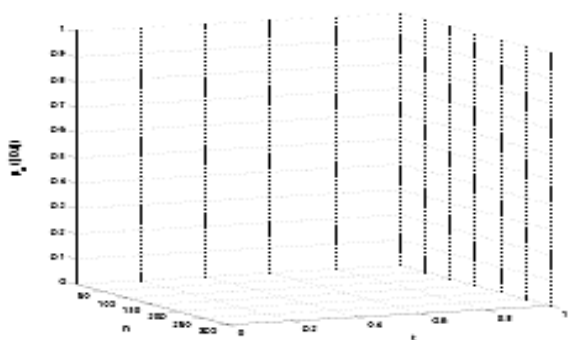
[Title No.12 in Times New Roman, single spaced and bold]

Products in development No.12 Times New Roman, single spaced.

**Including graphs, figures and tables-Editable**

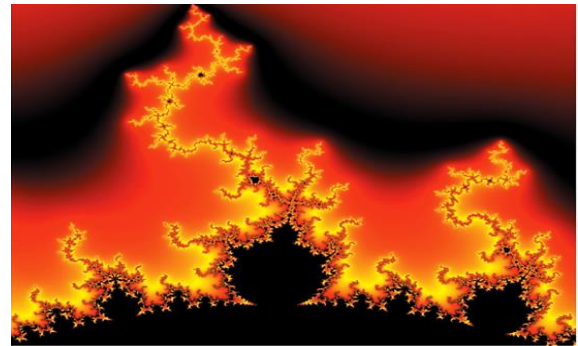
In the article content any graphic, table and figure should be editable formats that can change size, type and number of letter, for the purposes of edition, these must be high quality, not pixelated and should be noticeable even reducing image scale.

[Indicating the title at the bottom with No.10 and Times New Roman Bold]



**Graphic 1** Title and *Source (in italics)*

Should not be images-everything must be editable.



**Figure 1** Title and *Source (in italics)*

Should not be images-everything must be editable.

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Table 1** Title and *Source (in italics)*

Should not be images-everything must be editable.

Each article shall present separately in **3 folders**:  
 a) Figures, b) Charts and c) Tables in .JPG format, indicating the number and sequential Bold Title.

**For the use of equations, noted as follows:**

$$Y_{ij} = \alpha + \sum_{h=1}^r \beta_h X_{hij} + u_j + e_{ij} \quad (1)$$

Must be editable and number aligned on the right side.

**Methodology**

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

**Results**

The results shall be by section of the article.

**Annexes**

Tables and adequate sources

**Thanks**

Indicate if they were financed by any institution, University or company.

**Conclusions**

Explain clearly the results and possibilities of improvement.

**References**

Use APA system. Should not be numbered, nor with bullets, however if necessary, numbering will be because reference or mention is made somewhere in the Article.

Use Roman Alphabet, all references you have used must be in the Roman Alphabet, even if you have quoted an article, book in any of the official languages of the United Nations (English, French, German, Chinese, Russian, Portuguese, Italian, Spanish, Arabic), you must write the reference in Roman script and not in any of the official languages.

**Technical Specifications**

Each article must submit your dates into a Word document (.docx):

Journal Name

Article title

Abstract

Keywords

Article sections, for example:

1. *Introduction*
2. *Description of the method*
3. *Analysis from the regression demand curve*
4. *Results*
5. *Thanks*
6. *Conclusions*
7. *References*

Author Name (s)

Email Correspondence to Author

References

**Intellectual Property Requirements for editing:**

- Authentic Signature in Color of Originality Format Author and Coauthors.
- Authentic Signature in Color of the Acceptance Format of Author and Coauthors.
- Authentic Signature in blue colour of the Conflict of Interest Format of Author and Coauthors.

## **Reservation to Editorial Policy**

Journal University Management reserves the right to make editorial changes required to adapt the Articles to the Editorial Policy of the Journal. Once the Article is accepted in its final version, the Journal will send the author the proofs for review. ECORFAN® will only accept the correction of errata and errors or omissions arising from the editing process of the Journal, reserving in full the copyrights and content dissemination. No deletions, substitutions or additions that alter the formation of the Article will be accepted.

## **Code of Ethics - Good Practices and Declaration of Solution to Editorial Conflicts**

### **Declaration of Originality and unpublished character of the Article, of Authors, on the obtaining of data and interpretation of results, Acknowledgments, Conflict of interests, Assignment of rights and Distribution**

The ECORFAN-Mexico, S.C Management claims to Authors of Articles that its content must be original, unpublished and of Scientific, Technological and Innovation content to be submitted for evaluation.

The Authors signing the Article must be the same that have contributed to its conception, realization and development, as well as obtaining the data, interpreting the results, drafting and reviewing it. The Corresponding Author of the proposed Article will request the form that follows.

Article title:

- The sending of an Article to Journal University Management emanates the commitment of the author not to submit it simultaneously to the consideration of other series publications for it must complement the Format of Originality for its Article, unless it is rejected by the Arbitration Committee, it may be withdrawn.
- None of the data presented in this article has been plagiarized or invented. The original data are clearly distinguished from those already published. And it is known of the test in PLAGSCAN if a level of plagiarism is detected Positive will not proceed to arbitrate.
- References are cited on which the information contained in the Article is based, as well as theories and data from other previously published Articles.
- The authors sign the Format of Authorization for their Article to be disseminated by means that ECORFAN-Mexico, S.C. In its Holding Republic of Peru considers pertinent for disclosure and diffusion of its Article its Rights of Work.
- Consent has been obtained from those who have contributed unpublished data obtained through verbal or written communication, and such communication and Authorship are adequately identified.
- The Author and Co-Authors who sign this work have participated in its planning, design and execution, as well as in the interpretation of the results. They also critically reviewed the paper, approved its final version and agreed with its publication.
- No signature responsible for the work has been omitted and the criteria of Scientific Authorization are satisfied.
- The results of this Article have been interpreted objectively. Any results contrary to the point of view of those who sign are exposed and discussed in the Article.

## Copyright and Access

The publication of this Article supposes the transfer of the copyright to ECORFAN-Mexico, SC in its Holding Republic of Peru for its Journal University Management, which reserves the right to distribute on the Web the published version of the Article and the making available of the Article in This format supposes for its Authors the fulfilment of what is established in the Law of Science and Technology of the United Mexican States, regarding the obligation to allow access to the results of Scientific Research.

Article Title:

| Name and Surnames of the Contact Author and the Co-authors | Signature |
|--|-----------|
| 1.   |           |
| 2.   |           |
| 3.   |           |
| 4.   |           |

## Principles of Ethics and Declaration of Solution to Editorial Conflicts

### Editor Responsibilities

The Publisher undertakes to guarantee the confidentiality of the evaluation process, it may not disclose to the Arbitrators the identity of the Authors, nor may it reveal the identity of the Arbitrators at any time.

The Editor assumes the responsibility to properly inform the Author of the stage of the editorial process in which the text is sent, as well as the resolutions of Double-Blind Review.

The Editor should evaluate manuscripts and their intellectual content without distinction of race, gender, sexual orientation, religious beliefs, ethnicity, nationality, or the political philosophy of the Authors.

The Editor and his editing team of ECORFAN® Holdings will not disclose any information about Articles submitted to anyone other than the corresponding Author.

The Editor should make fair and impartial decisions and ensure a fair Double-Blind Review.

### Responsibilities of the Editorial Board

The description of the peer review processes is made known by the Editorial Board in order that the Authors know what the evaluation criteria are and will always be willing to justify any controversy in the evaluation process. In case of Plagiarism Detection to the Article the Committee notifies the Authors for Violation to the Right of Scientific, Technological and Innovation Authorization.

### Responsibilities of the Arbitration Committee

The Arbitrators undertake to notify about any unethical conduct by the Authors and to indicate all the information that may be reason to reject the publication of the Articles. In addition, they must undertake to keep confidential information related to the Articles they evaluate.

Any manuscript received for your arbitration must be treated as confidential, should not be displayed or discussed with other experts, except with the permission of the Editor.

The Arbitrators must be conducted objectively, any personal criticism of the Author is inappropriate.

The Arbitrators must express their points of view with clarity and with valid arguments that contribute to the Scientific, Technological and Innovation of the Author.

The Arbitrators should not evaluate manuscripts in which they have conflicts of interest and have been notified to the Editor before submitting the Article for Double-Blind Review.



## **Responsibilities of the Authors**

Authors must guarantee that their articles are the product of their original work and that the data has been obtained ethically.

Authors must ensure that they have not been previously published or that they are not considered in another serial publication.

Authors must strictly follow the rules for the publication of Defined Articles by the Editorial Board.

The authors have requested that the text in all its forms be an unethical editorial behavior and is unacceptable, consequently, any manuscript that incurs in plagiarism is eliminated and not considered for publication.

Authors should cite publications that have been influential in the nature of the Article submitted to arbitration.

## **Information services**

### **Indexation - Bases and Repositories**

LATINDEX (Scientific Journals of Latin America, Spain and Portugal)

EBSCO (Research Database - EBSCO Industries)

RESEARCH GATE (Germany)

GOOGLE SCHOLAR (Citation indices-Google)

MENDELEY (Bibliographic References Manager)

HISPANA (Information and Bibliographic Orientation-Spain)

### **Publishing Services**

Citation and Index Identification H

Management of Originality Format and Authorization

Testing Article with PLAGSCAN

Article Evaluation

Certificate of Double-Blind Review

Article Edition

Web layout

Indexing and Repository

Article Translation

Article Publication

Certificate of Article

Service Billing

### **Editorial Policy and Management**

1047 La Raza Avenue -Santa Ana, Cusco-Peru. Phones: +52 1 55 6159 2296, +52 1 55 1260 0355, +52 1 55 6034 9181; Email: [contact@ecorfan.org](mailto:contact@ecorfan.org) [www.ecorfan.org](http://www.ecorfan.org)

**ECORFAN®**

**Chief Editor**

GUZMÁN - HURTADO, Juan Luis. PhD

**Executive Director**

RAMOS-ESCAMILLA, María. PhD

**Editorial Director**

PERALTA-CASTRO, Enrique. MsC

**Web Designer**

ESCAMILLA-BOUCHAN, Imelda. PhD

**Web Diagrammer**

LUNA-SOTO, Vladimir. PhD

**Editorial Assistant**

TREJO-RAMOS, Iván. BsC

**Philologist**

RAMOS-ARANCIBIA, Alejandra. BsC

**Advertising & Sponsorship**

(ECORFAN® Republic of Peru), [sponsorships@ecorfan.org](mailto:sponsorships@ecorfan.org)

**Site Licences**

03-2010-032610094200-01-For printed material ,03-2010-031613323600-01-For Electronic material,03-2010-032610105200-01-For Photographic material,03-2010-032610115700-14-For the facts Compilation,04-2010-031613323600-01-For its Web page,19502-For the Iberoamerican and Caribbean Indexation,20-281 HB9-For its indexation in Latin-American in Social Sciences and Humanities,671-For its indexing in Electronic Scientific Journals Spanish and Latin-America,7045008-For its divulgation and edition in the Ministry of Education and Culture-Spain,25409-For its repository in the Biblioteca Universitaria-Madrid,16258-For its indexing in the Dialnet,20589-For its indexing in the edited Journals in the countries of Iberian-America and the Caribbean, 15048-For the international registration of Congress and Colloquiums. [financingprograms@ecorfan.org](mailto:financingprograms@ecorfan.org)

**Management Offices**

1047 La Raza Avenue -Santa Ana, Cusco-Peru.

# Journal University Management

“School learning barriers in higher education students”

**SÁNCHEZ-RIVERA, Lilia, ESPERICUETA-MEDINA, Marta Nieves, MUÑOZ-LÓPEZ, Temístocles and LÓPEZ-CUELLAR, Leonardo Daniel**

*Universidad Autónoma de Coahuila*

“Comparative analysis dimensioned by sex on socioeconomic attributes, vocational orientation and gender perspective in career selection, Fresnillo, Zacatecas, Mexico, 2021”

**BARRÓN-PALOS, Eduardo Javier, SALINAS-AGUIRRE, María del Consuelo, URIBE-SIERRA, Sergio Elías and SIERRA-CASTRO, Fátima Stephania**

*Universidad Autónoma de Zacatecas*

“Perception of the conflict in the students of the Universidad Tecnológica de León”

**HERNÁNDEZ-CASTILLO, Adolfo, ARREDONDO-MUÑOZCANO Ana María del Carmen, PADILLA-GUTIÉRREZ Luz Aurora and GONZÁLEZ-ARREDONDO, Liliana**

*Universidad Tecnológica de León*

“Good practices in the self-transformation of the engineering student in continuous improvement projects”

**PALOMARES-RUIZ, María Blanca Elizabeth, DIMAS-RANGEL, María Isabel, TORRES-BUGDUD, Arturo and BÁEZ -VILLARREAL, Esteban**

*Universidad Autónoma de Nuevo León*

