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Presentation date: April, 2024
Date of acceptance: October, 2024
Publication date: November, 2024

RESILIENCE IN UNIVERSITY TEACHERS: CASE STUDY IN CHIMBORAZO NATIONAL UNIVERSITY

RESILIENCIA EN DOCENTES UNIVERSITARIOS: ESTUDIO DE CASO EN LA UNIVERSIDAD NACIONAL DE CHIMBORAZO

Edmundo Cabezas Heredia [1*]
E-mail: ecabezas@unach.edu.ec
ORCID: https://orcid.org/0000-0001-5708-0054
Fernando Molina Granja [1]
E-mail: fmolina@unach.edu.ec
ORCID: https://orcid.org/0000-0003-2486-894X
Patricia Elena Viñán Guerrero [1]
E-mail: patricia.vinan@unach.edu.ec
ORCID: https://orcid.org/0000-0002-9820-6087
Juan Carlos Santillán Lima [2]
E-mail: carlos.santillan01@espoch.edu.ec
ORCID: https://orcid.org/0000-0001-5812-7766
César Javier Ayala Martínez [1]
E-mail: javier.ayala@espoch.edu.ec
ORCID: https://orcid.org/0009-0006-3269-7967
[1] Universidad Nacional de Chimborazo, Ecuador.
[2] Escuela Superior Politécnica de Chimborazo, Ecuador.
*Autor para correspondencia

Suggested citation (APA, seventh ed.)

Cabezas Heredia, E., Molina Granja, F., Viñán Guerrero, P. E., Santillán Lima, J. C., & Ayala Martínez, C. J.(2024). Resilience in university teachers: case study in Chimborazo national university. ***Universidad y Sociedad, 16***(6), 560-569.

ABSTRACT

The present research was about evaluating resilience in teachers of the Faculty of Engineering of the National University of Chimborazo, where resilience is the ability to recover and adapt in the face of adversity, it is the ability of people to overcome difficulties and grow from them. The objective is to determine the resilience levels of the Faculty of Engineering teachers. The Wagnild and Young resilience test was applied to teachers and was complemented with sociodemographic variables. The population was made up of 97 university teachers. The result found for resilience by levels was: 2.1 medium and 97.9% high. The correlation is established through Cramer's V between the variables and the test applied with results that influence and others do not influence the phenomenon investigated. We conclude the presence of levels of resilience that are between medium and high in the analyzed sample, this demonstrates how teachers face the problems of academic and family activity to avoid future health problems.

Keywords: Resilience, Teachers, Preventive measures.

RESUMEN

La presente investigación versó sobre evaluar la resiliencia en docentes de la Facultad de Ingeniería de la Universidad Nacional de Chimborazo, donde la resiliencia es la capacidad de recuperarse y adaptarse ante la adversidad, es la capacidad que tienen las personas para superar las dificultades y crecer a partir de ellas. El objetivo es determinar los niveles de resiliencia de los docentes de la Facultad de Ingeniería. Se aplicó la prueba de resiliencia de Wagnild y Young a docentes y se complementó con variables sociodemográficas. La población estuvo conformada por 97 docentes universitarios. El resultado encontrado para la resiliencia por niveles fue: 2,1 medio y 97,9% alto; La correlación se establece mediante la V de Cramer entre las variables y la prueba aplicada con resultados que influyen y

otros no influyen en el fenómeno investigado. Concluimos la presencia de niveles de resiliencia que se encuentran entre medio y alto en la muestra analizada, esto demuestra cómo los docentes enfrentan los problemas de la actividad académica y familiar para evitar futuros problemas de salud.

Palabras clave: Resiliencia, Docentes, Medidas preventivas.

Introduction

Resilience is the ability of people to face problems, currently, the world experiences a series of situations such as climate change, armed conflicts, economic crises, diseases, poverty, malnutrition, pandemics, accidents, and occupational diseases in the workplace, etc., resilience is used as the ability to adapt and recover, which not only helps to resist adversity but also to learn from past experiences, anticipate future challenges and work collaboratively to build a more resilient and just world. Promoting resilience globally is critical to mitigating the negative impacts of these challenges and building a more prosperous and equitable future for all (Ortiz & Cabezas, 2024).

Medina (2012), a person's resilience is the ability to develop and apply various skills and approaches to face and solve challenges. These individual skills and approaches become valuable assets for organizations since they help decision-making to be able to maintain better control at the time of a certain crisis.

According to some experts, organizational resilience is metaphorically described as the search for the "silver cover," which means finding opportunities within a crisis to emerge more robust and in better condition than those that existed before the critical event (McManus, 2008), this means that the company has opportunities to be able to get out of a crisis to achieve this, it must have properly trained personnel, with a relevant organizational climate, in which the staff is immersed and adapts to sudden changes to achieve new achievements and this is done with resilience.

Saavedra & Villalta (2008), resilience are an individual attribute that develops throughout a person's life and that may have been formed as an early connection, being essential for the way the person faces the events of their life.

Emili (2019), he describes resilience as the ability to face challenges and grow from them, achieving an optimal level both professionally and personally because of lived experiences.

Resilience is among the personal resources that can help prevent burnout. It is described as the positive attitude of individuals in the face of difficult situations that they must face at certain times in their lives, thus representing a favorable aspect of mental health. In addition, those who are resilient see defeat as an opportunity to grow personally (Santos, 2013).

In their study, Saavedra & Villalta (2008) suggest that resilience is linked to concepts such as "protective factors", "risk factors" and "vulnerability", which describe the elements that predispose the individual. These factors are associated with both contextual and personal aspects in people. However, so far, a conceptual model has not been developed that integrates these elements sufficiently to explain the behavior of the individual in the face of adversity (Sarabia-Ramírez & Cabezas-Heredia, 2024).

Mental health and resilience are focused on the well-being of everyone. Resilience is part of an adequate psychosocial adaptation and is linked to mental health. For this reason, organizations such as the university seek to value the resilience that their teachers must face a problem since it is an aspect of occupational health and has to do with effects of which many are positive, but there are negative ones such as: denying emotions, over understanding, emotional exhaustion, among others.

In the field of education, a series of rapid changes are currently taking place, such as the incorporation of new technologies in the classroom, the evolution of family models, modifications in legislation, and adjustments in the selection processes to enter the teaching profession (Ballantyne & Retell, 2020; Scheepers, 2017). These transformations, together with the speed with which they are taking place, are hurting educators, as the demands placed on them increase.

During and after the pandemic, teachers have been forced to quickly adapt their subjects, originally designed to be taught in face-to-face (or in some cases, blended) mode, to a digital format. This process highlights one of the most significant gaps and challenges in education during these times (Fernádez, 2020). This difficulty is related to the digital skills of both teachers and students to effectively use digital platforms for educational purposes, as well as the ability to create or provide educational content and activities through these platforms, so the university teacher had to change and face this situation in a resilient way and face this new challenge.

According to Cyrulnik (2009), the teacher can play the role of resilience mentor for students. However, this can only be achieved if the teacher has cultivated resilient strategies that positively impact the development of students' skills (Pérez et al., 2010).

Resilience is not only limited to a personal skill but also implies the ability to establish connections and provide support in relationships between people, with the role of the teacher being crucial in this aspect (Gu & Day, 2020).

This research is the product of a project titled: Creation of a Web and Mobile Application to Determine Psychosocial Risk Factors in University Teachers one of the aspects analyzed is resilience, so the following research problem is posed to be solved: Determine the levels of resilience of teachers at the National University of Chimborazo?

MATERIALS AND METHODS

The study population was the teachers at the National University of Chimborazo, there were 97 teachers surveyed chosen at random who filled out the survey freely and voluntarily through the link of the institutional platform SICOA, so the entire population was used, and no sampling was carried out.

The methodology used was the elaboration of the resilience survey in Google Forms, the link was attached to the corresponding official letter for the authorization of the Vice-Rectorate for Research and Graduate Studies so that it can be published on the institutional platform SICOA, and the teacher's can answer it.

The applied survey downloaded its data from Google Drive in an electronic Excel sheet, for the respective programming and exported to the SPSS V26 program to be programmed again, then the corresponding results of teacher resilience are obtained.

The applied resilience test consists of 25 items scored with a 7-point licker scale, which is as follows: 1 = disagree to 7 = agree (Wagnild & Young, 1993) (Table 1).

The resilience scale has the following dimensions:

Table 1. Dimensions of the Wagnild and Young Resilience Test.

Dimensions	Test Questions
Personal Satisfaction	P16, P21, P22, P25
Equanimity	P7, P8, P11, P12
Feeling good alone	P5, P3, P19
Self-confidence	P6, P9, P10, P13, P17, P18, P24
Perseverance	P1, P2, P4, P14, P15, P20, P23

Source: Wagnild and Young resilience test.

The reliability of the Wagnild and Young resilience test is determined in the following table utilizing Cronbach's Alpha (Table 2).

Table. 2 Reliability through Cronbach's Alpha.

Cronbach's Alpha	**Internal Consistency**
$\alpha \geq 0,9$	Excellent
$0,8 \leq \alpha < 0,9$	Well
$0,7 \leq \alpha < 0,8$	Acceptable
$0,6 \leq \alpha < 0,7$	Questionable
$0,5 \leq \alpha < 0,6$	Poor
$\alpha < 0,5$	Unacceptable

Source: Virla (2010).

The reliability of the Wagnild and Young resilience test is determined in the following table utilizing the KMO (Table 3).

Table. 3 Reliability utilizing KMO.

KMO Values	Quality of value
1.00 ≥ KMO > 0.90	Excellent
0.90 ≥ KMO > 0.80	Good
0.80 ≥ KMO > 0.70	Acceptable
0.70 ≥ KMO > 0.60	Regular
0.60 ≥ KMO > 0.50	Bad boy
KMO < 0.50	Unacceptable

Source: Virla (2010).

To determine the correlation between the sociodemographic variables and the dimensions of the Wagnild and Young resilience test is determined in the following table using Cramer's V (Table 4).

Table. 4 Correlation of sociodemographic variables and the dimensions of the resilience test.

Cramer's Phi V	Interpretation
> 0.25	Very strong
from 0.25 - 0.15	Strong
from 0.10 to 0.15	Moderate
from 0.05 to 0.10	Low
from 0 to 0.05	No Relation / Very Low

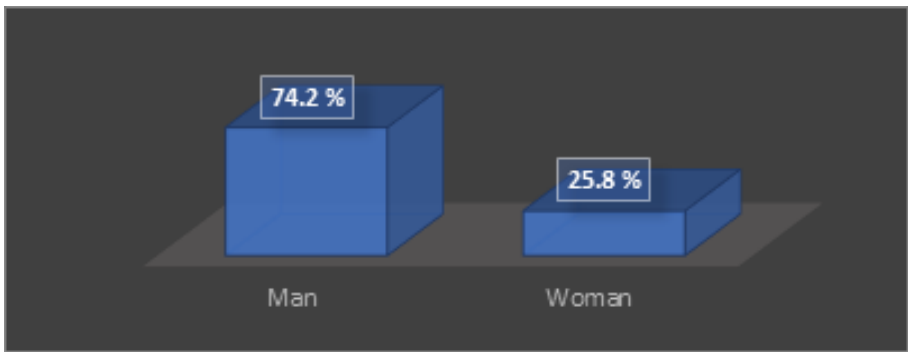
Source: self-elaboration.

RESULTS AND DISCUSSION

Regarding the gender of the professors of the Faculty of Engineering surveyed, we have that 74.2% are men and 25.8% women (Figure. 1). Some authors state in their research that the new practices of life link human beings' men and women, there is a binding presence of in the search for equality of rights as in this research (Álvarez y del Águila, 2003)

This research carries out an analysis of sociodemographic variables, which are the following:

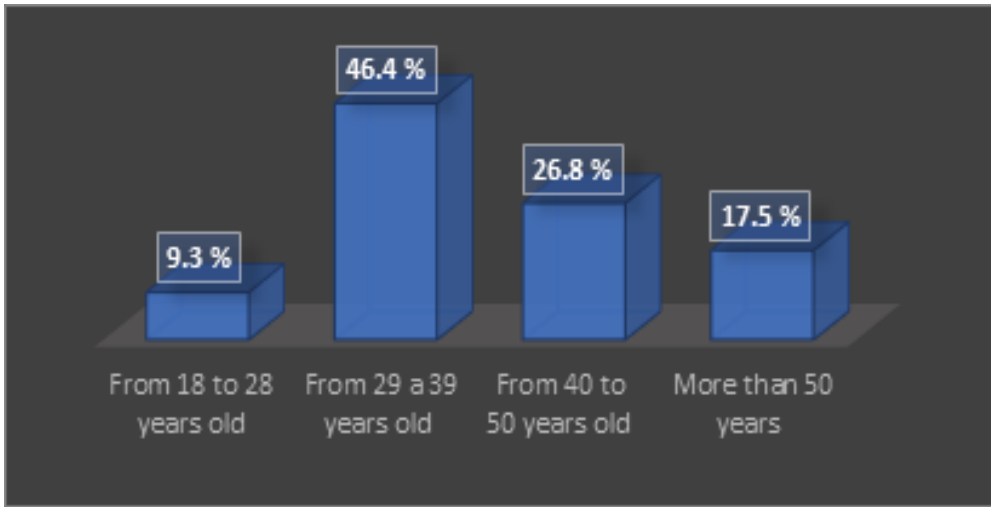
Fig. 1 Gender of the professors of the Faculty of Engineering surveyed.



Source: self-elaboration.

Regarding the age of the teachers of the Faculty of Engineering surveyed, we have that 9.3% are between 18 and 28 years old, 46.4% from 29 to 39 years old, 26.8% from 40 to 50 years old and 17.5% over 50 years old, the surveyed teaching staff is young complemented with experience in the activity (Figure. 2). Gonzales et.al. (2015) states in his research that the age assessment will allow us to see the behavior of resilience by the different age patterns and determine its significance, like what is intended in this research.

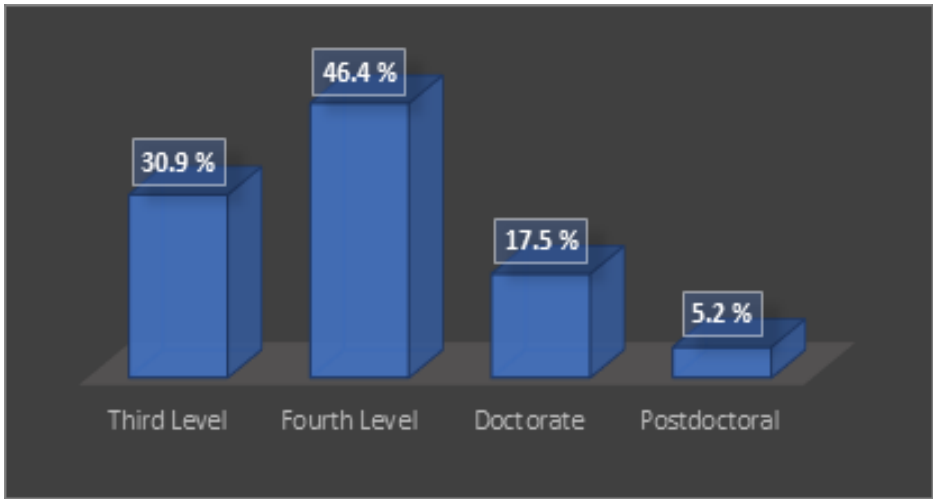
Fig. 2 Age of the professors of the Faculty of Engineering surveyed.



Source: self-elaboration.

Regarding the educational level of the teachers of the Faculty of Engineering surveyed, we have that 30.9% are Third Level, 46.4% Fourth Level, 17.5% with Doctorate, and 5.2% Post-doctorate, the staff working in the Faculty of Engineering are teachers with a high degree of preparation (Figure. 3). Sierra et al. (2019), states in their research reflects the need for a positive organizational view that includes the training of the teacher as a professional, but also as an individual, current research shows the need to see the teacher as a whole and not as an academic individual.

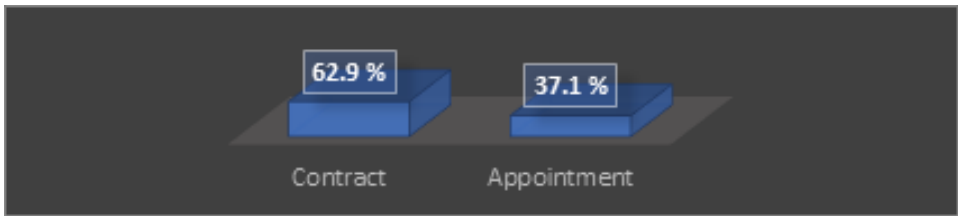
Fig. 3 Educational Level of the Faculty of Engineering Teachers Surveyed.



Source: self-elaboration.

Regarding the type of action of the Faculty of Engineering Teaching Staff, we have: 62.9% of respondents are contract and 37.1% are appointment (Figure. 4). According to Alvarez (2018), it is possible to understand the resilience of a social system as its ability to withstand pressures without being destroyed, maintaining its current state of equilibrium or evolving towards a considerable one and thus change the individuals within the system and in the same way their desire to do so in the face of the environment of imbalance within the subsystem of university education.

Fig. 4 Type of Personnel Action of the Faculty of Engineering Professors Surveyed



Source: self-elaboration.

Regarding the reliability and reliability of the resilience test applied through Cronbach's Alpha and KMO, it has to be reliable and reliable to apply to this environment, it can be improved by asking questions to increase reliability and increase the sample to increase reliability (Table 5)., Cabello & Barboza-Palomino (2016), state in their research that the resilience scale has adequate psychometric properties to continue with validation studies to be applied as in the present study.

Table.5 Reliability and Reliability of the Resilience Test applied.

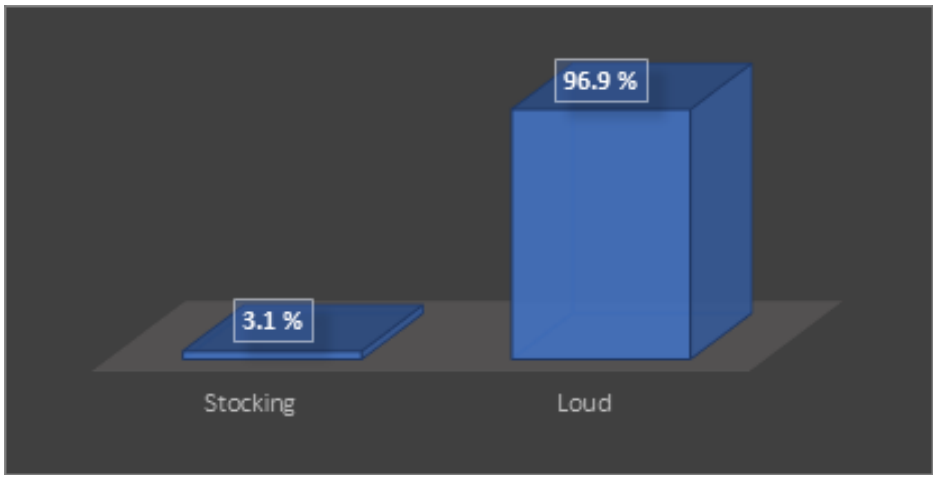
Denomination	Values	Interpretation
Reliability	0.863	Well
Reliability	0.750	Acceptable

Source: self-elaboration.

Regarding the dimensions of the resilience test applied, it is detailed below:

Regarding the Personal Satisfaction dimension of the Resilience test of the surveyed Teachers we have: 3.1 with medium Personal Satisfaction and 96.9% high, it is concluded that it is medium-high this favors the teacher to be able to face problems that need to be solved (Figure. 5)., according to Hilasaca & Mamani (2019), states in their research that there is a greater resilient capacity and a greater probability of feeling satisfied with life being positive for the mental health of the person with the present research.

Fig. 5 Dimension Personal Satisfaction of the test applied

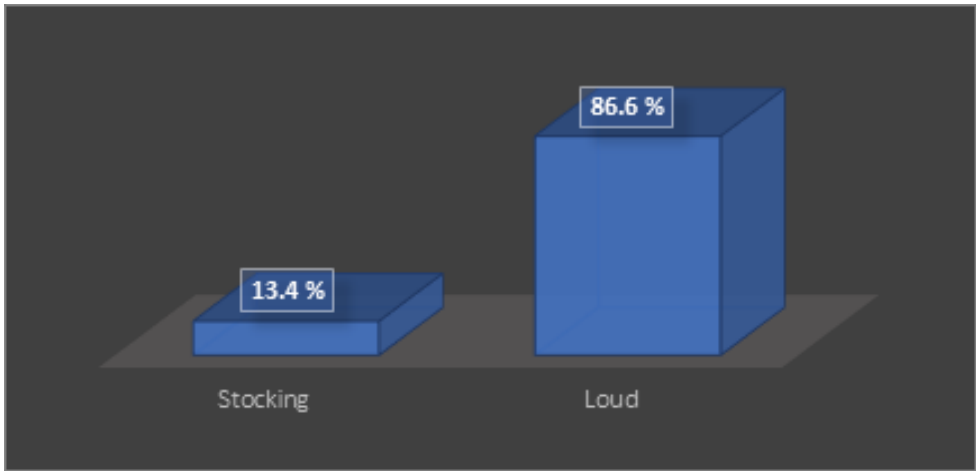


Source: self-elaboration.

Regarding the Equanimity dimension of the Resilience test applied to teachers, we have: 13.4 % with medium equanimity and 86.6 high, it is concluded that it is medium-high this benefits the teacher who despite being in a problem situation acts with equal behavior so as not to see culprits and solve it being part of the problem (Figure. 6). According

to Morgan (2021), he states in his research that a balanced perspective of one's own life and experiences, taking things calmly, moderating attitudes in the face of adversity.

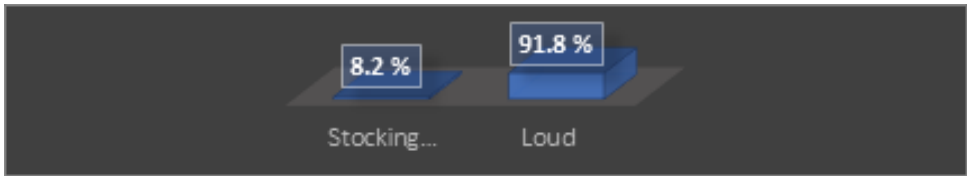
Fig.6. Dimension Equanimity of the test applied.



Source: self-elaboration.

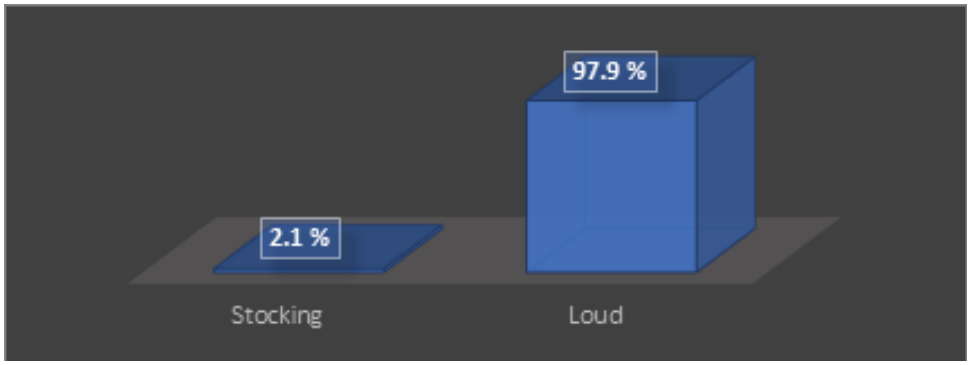
Regarding the Feeling good alone dimension of the Resilience test applied to Teachers, there are: 8.2% is medium and 91.8% high, it is concluded that the prevalence is medium-high, this means that the surveyed university professor generally solves his problems personally, however, feeling lonely can present situations such as loneliness or a lack of communication with other classmates (Figure. 7). According to Morgan (2016), he states in his research that he gives us the meaning of freedom and that we are unique and very important in the role we play (Figure. 8) .

Fig. 7 Dimension Feeling good only from the test applied.



Source: self-elaboration.

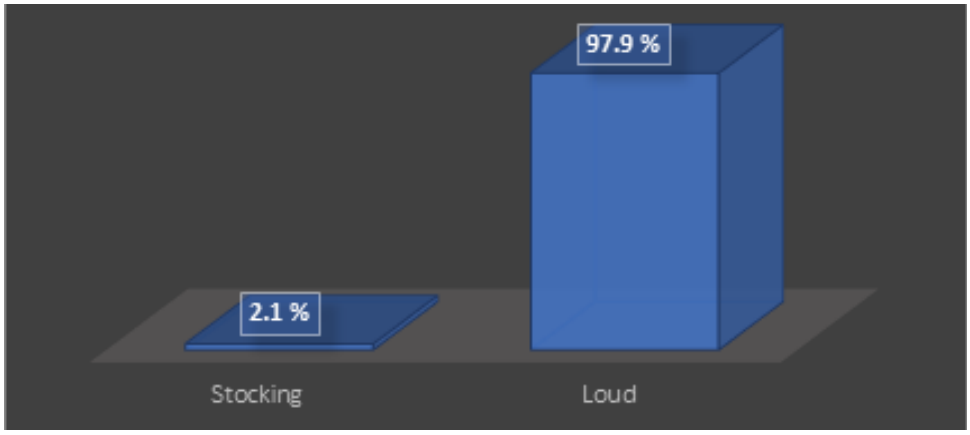
Fig. 8 Dimension Perseverance.



Source: self-elaboration.

Regarding the Resilience of the Faculty of Engineering Teachers, there are: 2.1 % medium resilience and 97.9 % high, it is concluded that the resilience is medium high (Figure. 9), according to Llopis et al. (2022), states in their research that a resilient attitude is observed among the teachers who participated in the study, who find in the pandemic an opportunity to reinvent themselves and improve their teaching. They advocate hybrid teaching in which face-to-face and virtual teaching complement each other, although they consider that this could lead to a change in thinking, because of a greater demand for accompaniment and tutoring of students during the learning process.

Fig.9 Teacher Resilience.



Source: self-elaboration.

With respect to the correlation analysis of the sociodemographic variables with the dimensions of the Resilience test, they are presented below (table 6):

Table 6 Correlations of Sociodemographic Variables and Resilience

Correlations	Frequencies	V for Cramer	Interpretation
Age and Resilience	18-28 years: 9 high cases From 29 to 39 years old: 1 medium case and 44 high 40 to 50 years: 26 cases high Over 50 years: 1 medium case and 16 high cases	0.143	The correlation between age and resilience is medium, that is, there are other factors that influence to have a good way to face problems.
Gender and Resilience	Men: 2 medium cases and 70 high cases Women: 25 high cases	0.085	The correlation between gender and resilience is low, it does not influence, it is concluded that men are more resilient than women
Education Level and Resilience	Third Level: 30 cases high Fourth Level: 1 medium case and 44 high PhD: 1 medium case and 16 high cases Postdoc: 5 high cases	0.143	The correlation between educational level and Resilience is medium, there are other factors that help the teacher to be more resilient.
Personnel Action and Resilience	Contract: 1 medium case and 60 high Appointment: 1 medium case and 35 high	0039	The correlation between the type of personnel action and resilience does not exist, the teacher with or without an employment relationship knows how to deal with problems.

Source: self-elaboration.

The author Tacca and Tacca (2019), states in his research that men show greater emotional exhaustion and depersonalization, women present greater resilience and personal fulfillment. In addition, resilience is greater in teachers over 40 years of age and in those who have at least one child, like the results found in the present study.

The reliability and reliability of the Resilience test, whose value is 0863 and 0.75 calculated by means of Cronbach's alpha and KMO, define the reliability and reliability of the test applied to the teachers of the Faculty of Engineering.

With respect to the Resilience of Teachers is 2.1% medium and 77.9% high, it is concluded that the Resilience of Teachers is good to face the problems of the work environment and life, with respect to the correlations age and educational level is medium, that is, there are other factors that influence the teacher to face problems and seek solutions to problems.

CONCLUSIONS

Adversity in the university educational environment can create challenges in the teaching work; however, it can also foster resilience processes, promoting the development of teaching and learning through information and communication technologies.

Resilience in teachers is a crucial factor in facing and overcoming the challenges inherent in the educational environment. The ability to adapt and recover from adverse situations not only improves the effectiveness of their pedagogical work, but also enriches the teaching and learning process. The integration of information and communication technologies (ICTs) emerges as a powerful tool to enhance this resilience, facilitating methodological innovations and strengthening teachers' commitment to the comprehensive education of students. Ultimately, teacher resilience not only benefits educators, but also positively impacts educational quality and the development of a more robust and adaptable academic community.

Acknowledgments: The authors thank the Engineering and Computer Science Research Network Ri3 for their support in the development and dissemination of this work.

Conflicts of Interest: "The authors declare no conflicts of interest."

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