

Research Report

## Gender Inequality at the National University of Comahue in Traditionally Male-Dominated Fields

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### Abstract

The study focused on Sustainable Development Goal 5 (SDG 5), which is aimed at achieving gender equality, with the purpose of highlighting the micro-inequalities that persist in the university environment—particularly within the teaching programs of Economics and Mathematics at the National University of Comahue. Through research that combined a literature review and anonymous digital surveys conducted among the academic community, perceptions of gender disparity were explored.

The results reveal that structural and cultural barriers remain present, and that traditional stereotypes and roles continue to shape women's experiences. Women often feel the need to constantly prove their worth in male-dominated fields. This situation affects their sense of belonging and participation, creating discomfort when expressing themselves in spaces where they are a minority. Likewise, the study identified experiences of harassment and inequality that are often overlooked within the university setting.

The study concludes that in order to advance toward true gender equity, it is necessary to strengthen education with a gender perspective, implement effective institutional policies, and promote a collective commitment that includes the active participation of the entire university community—especially men—as a fundamental part of cultural change.

**Keywords:** Gender equality; STEM; Gender stereotypes

### 1. INTRODUCTION

The present paper focuses on Sustainable Development Goal 5 (SDG 5), which aims to achieve gender equality and empower all women and girls. The role of women has evolved over the years in the pursuit of gender equality with men. However, there is still a long way to go to achieve it. This disparity, rooted in social norms, stereotypes, and systemic biases, creates barriers that shape women's educational and professional trajectories throughout the different stages of their lives. In this context, educational institutions play a crucial role as transformative cultural centers, with the capacity either to perpetuate these inequalities or, conversely, to dismantle them through the implementation of inclusive and equitable policies.

## Research Report

Within the academic sphere, there continues to be an underrepresentation of women in the fields of science, technology, engineering, and mathematics (STEM). Therefore, it is crucial that female students develop a sense of belonging in their learning environments, feeling safe and comfortable, as the lack of such conditions may affect their performance, commitment, and persistence within the institution (Dost, 2024). In this regard, fostering an inclusive academic culture becomes a fundamental element in advancing toward genuine equity (Warner, 2025).

Academic institutions are recognized as transformative cultural centers that influence social values and perceptions of gender roles (Warner, 2025). Academic and professional environments in technical fields often reproduce a toxic and hostile atmosphere, characterized by a lack of inclusion, harassment, and the constant need for women to prove their competence, which can lead to demotivation and hinder their development (Fortunato et al., 2024).

Another relevant factor is gender stereotypes, which influence the self-perception of abilities and lead, for instance, female students to perceive fields such as economics as typically male domains. Consequently, those who choose to enter stereotyped areas must possess comparatively higher levels of knowledge and interest in order to self-select and persist, revealing a more demanding selection process than that experienced by their male counterparts (Jüttler & Schumann, 2019).

Based on this, our research focuses on the context of the National University of Comahue, specifically at the Neuquén Capital campus, addressing the lack of female representation and how this affects the educational trajectories of students across different programs. Our objective is to understand the perspectives of both students and teachers regarding the current educational environment, to analyze which situations promote or hinder gender disparity, to identify the possible causes of this issue, and finally, to assess the level of direct support that some of the solutions proposed by our group would receive. This will be determined through surveys distributed via digital communication channels. Based on the results, we will design a small awareness campaign aimed at making this issue more visible.

## 2. METHODOLOGY

**Research Design:** The research is framed within a mixed-methods approach, combining a literature review with an empirical study conducted through surveys. This design was chosen because specialized literature on gender equality in university contexts primarily relies on statistics and surveys as analytical tools.

In this case, a virtual survey was administered to the university community, complemented by a literature review that allowed for the systematization of the main challenges and documented solutions related to gender equity in STEM-related fields. This methodological triangulation proved suitable for achieving the proposed objectives: To understand and categorize the challenges faced by

## Research Report

women in the university environment. To disseminate knowledge about these challenges and possible solutions. To share results and experiences through public talks.

**Participants or Sample:** The survey participants included students, faculty, and administrative staff from the National University of Comahue, particularly from the Neuquén campus. The sample primarily consisted of individuals involved in STEM areas (Science, Technology, Engineering, and Mathematics), although it is acknowledged that other university programs also include subjects related to these fields and may reflect similar gender inequalities. Regarding the community talks, most participants belonged to the following groups: Students from the Faculty of Engineering. Students from the Faculty of Economics and Administration. Students from the Faculty of Informatics. Faculty members from the Teaching and Bachelor's programs in Mathematics. In this way, the research incorporated diverse voices within the university community, aiming to obtain a broader understanding of the challenges and potential solutions.

**Instruments and Measures:** Data collection was carried out through a digital survey designed using Google Forms. The results obtained were exported to an Excel document, where the initial descriptive and statistical analyses were conducted. The questionnaire was developed based on a prior literature review, ensuring that the questions directly addressed the main issues identified in previous studies on gender inequality in university contexts. From the collected data, patterns and trends were examined to identify recurring issues within the local academic community.

**Procedure:** The study was conducted in three main phases, each corresponding to the research objectives:

- **Study Phase:** At the beginning of September, a literature review was conducted to identify the main challenges faced by women in male-dominated academic fields, as well as the solutions documented in previous studies. Based on these findings, a virtual survey was designed and distributed through social networks and the university's institutional communication channels.
- **Dissemination Phase:** Once the data had been analyzed, discussion sessions were organized in various university departments (Engineering, Economics, and Mathematics Education). Each meeting followed the same structure: presentation of the project, exposition of the identified challenges, group discussion of possible solutions, and comparison with the solutions reported in the literature.
- **Reporting Phase:** Finally, the results obtained were systematized into documents and presentations aimed at the university community and others interested in the issue. Through this process, the goal was not only to collect quantitative and qualitative data but also to create a space for reflection and discussion that would enrich the analysis of the information.

### 3. Results

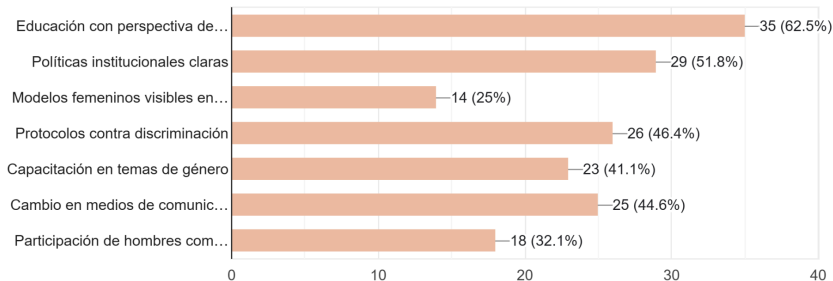
## Research Report

The survey sample, with a total of  $N = 57$ , consisted primarily of university students (87.7%), while faculty members and non-teaching staff represented a much smaller proportion. The survey was completed by a total of 57 participants. Within the sample, there was greater participation from female respondents (61.4%), showing a difference of less than 15% compared to male participants. This reflects a slightly higher level of interest among women in issues related to gender equality.

Among the specific questions, regarding experiences of gender-based discrimination, the majority of respondents reported having heard comments about a person's abilities based on their gender (54.4%), followed by harassment or inappropriate remarks (47.4%). Other notable experiences included pressure to conform to certain roles (31.6%) and lower recognition for achievements (26.3%). To a lesser extent, 12.3% mentioned being excluded from activities or groups, while 24.6% stated that they had not witnessed any of these situations. These results indicate that experiences of gender discrimination or bias remain present within a significant portion of the university community.

Most respondents also identified traditional gender stereotypes and roles as the main challenge (74.5%), followed by a lack of information or education on equality (54.5%). These data reveal that respondents perceive cultural biases and the lack of training in gender equality as the factors that most hinder the achievement of genuine gender equity.

¿Qué consideras más importante para promover la igualdad de género? (Selecciona las 3 más importantes)  
56 respuestas



On the other hand, according to the respondents, the three most important actions to promote gender equality are “education with a gender perspective” (62.5%), “institutional policies” (51.8%), and “anti-discrimination protocols” (46.1%).

COUNTA de ¿Participarías de for ¿Participarías de forma recurrente en actividades de sensibilización sobre igualdad de género (charlas, talleres, campañas)?

Género con el que te identificas:	No, no estoy interesado/a	Sí, sin dudarlo	Tal vez, depende de mis horarios	Suma total
Hombre	10		11	21
Mujer	4	3	28	35
Prefiero no responder			1	1
<b>Suma total</b>	<b>14</b>	<b>3</b>	<b>40</b>	<b>57</b>

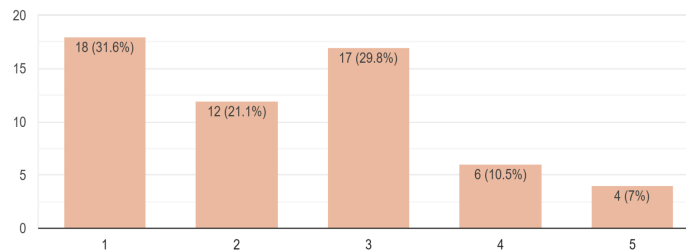
The results show that most students would be willing to participate in awareness-raising activities on gender equality. Among female respondents, the majority answered “Maybe, depending on my schedule,” indicating interest, though contingent upon their availability. Only a few expressed complete disinterest. In contrast, among male respondents, the answers were more divided, with a

## Research Report

similar number of participants stating they were not interested and others indicating they might participate depending on their schedules.

With 1 representing “strongly disagree” and 5 representing “strongly agree,” please rate your opinion on the following statements.

Es incómodo expresar opiniones en grupos donde soy una minoría de género  
57 respuestas



In this statement, 31.6% of respondents strongly disagreed with feeling uncomfortable expressing their opinions in a group where they are a minority, while 29.8% expressed a more neutral perception on the matter. Based on these values, the responses were further analyzed according to each participant's gender identification. It was found that 42.9% of male respondents felt neutral about the situation, whereas 33.3% of female respondents reported feeling uncomfortable in such circumstances.

On the other hand, statements related to institutional policies concerning gender equity showed a higher frequency of responses rated as “3,” indicating neutral opinions on the subject. This may suggest that there is little transparency or clarity regarding which policies exist within the institution and how they are implemented, or that respondents believe such policies are not particularly relevant to reducing the institutional gender gap.

Regarding the question of whether women have the same professional growth opportunities as men, 53.6% of respondents agreed with the statement, 28.6% disagreed, and 17.6% remained neutral. Overall, these results suggest that although a considerable proportion believes that equitable opportunities exist, a significant segment still perceives gender gaps in professional advancement.

Another issue addressed in the survey concerned whether men should participate in gender-related initiatives. The results revealed that within the university, 41.1% of respondents believed that men should participate actively, while 37.5% considered men's participation to be of little relevance.

COUNT de La socialización (cómo La socialización (cómo nos educan de niños/as) influye en las carreras que eligen hombres y mujeres					
Género con el que te identificas:	2	3	4	5	Suma total
Hombre	1	6	3	11	21
Mujer	0	3	4	5	22
Prefiero no responder	1				1
Suma total	0	5	10	8	33
					56

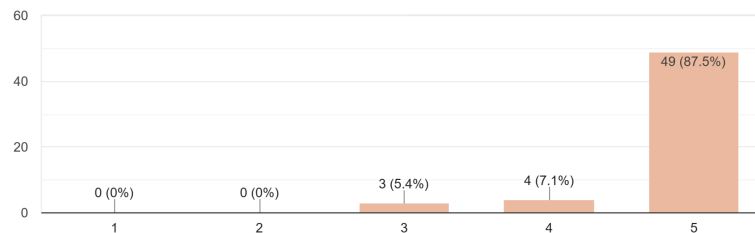
## Research Report

The results show that both men and women acknowledge that childhood socialization influences career choices based on gender. Among men, the majority fall within the “agree” and “strongly agree” categories, with 14 out of 21 responses in these groups, while among women, 27 out of 34 responses also indicate agreement or strong agreement.

¿A qué facultad perteneces?	1	2	3	4	5	Suma total
Facultad de Ciencias del Ambiente y la Salud					1	1
Facultad de Economía y Administración	0	5	6	9	12	32
Facultad de Economía y Administración, Facultad de Informática.		1				1
Facultad de Humanidades	1				1	2
Facultad de Informática.	4	1	1	3	6	15
Facultad de Ingeniería	1		1	1	2	5
<b>Suma total</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>8</b>	<b>22</b>	<b>56</b>

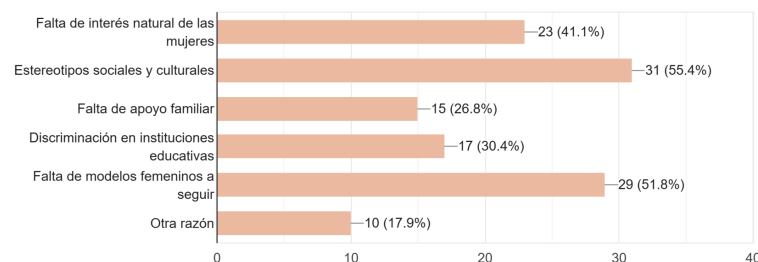
The results show that most students perceive that women must “prove their worth” more than men in traditionally male-dominated fields such as engineering or economics. Most responses fall within the “agree” and “strongly agree” categories, particularly among students from the Faculties of Economics and Administration, Informatics, and Engineering, reflecting a widespread awareness of gender inequality in these areas. Although some respondents expressed mild disagreement, no group indicated total disagreement, suggesting that, overall, students acknowledge the additional pressure women face in these fields.

Las mujeres y los hombres tienen las mismas capacidades para carreras de ingeniería, matemáticas y tecnología.  
56 respuestas



On the other hand, while a considerable portion of respondents believe that full equality of opportunities between men and women does not exist in academic, everyday, or workplace settings (4%), an even larger proportion acknowledges the importance of female participation in leadership roles (with 41.1% strongly agreeing).

En tu opinión, ¿Cuál es la principal razón por la que hay menos mujeres en carreras de ingeniería, matemáticas, tecnología y ciencia? (Puedes seleccionar más de una opción)  
56 respuestas



The results indicate that, despite social progress regarding gender issues, there are still contexts in which the gap remains evident. These findings are significant because they reveal that institutional

## Research Report

policies are still unclear and that there is limited participation in activities and events aimed at raising awareness about the gender gap.

### Interpretations: What Do the Results Mean?

The results reflect a growing awareness of gender inequality within the university environment, although perceptions and experiences of discrimination still persist. Most respondents acknowledged having witnessed comments or attitudes based on gender, indicating that biases and stereotypes remain present in academic life. They also reported having observed inappropriate remarks about abilities according to gender, harassment, and pressure to conform to traditional roles—findings consistent with those of Fortunato et al. (2025).

It is perceived that hostile patterns persist in university educational and work environments, affecting women's sense of belonging and confidence. This, combined with the perception of stereotypes and traditional roles as the main obstacle, and the belief that women must prove their competence more than men in male-dominated fields, reflects the gap between the ideal of equality promoted by SDG 5 and the reality within the university setting.

Dost, G. (2024) addresses how these stereotypes directly impact students' ability to develop a sense of belonging in STEM. The author explains that masculine stereotypes about the skills required in these disciplines act as active barriers, discouraging female students from pursuing a career in the field. This directly validates the survey results, showing that respondents' perceptions of the influence of cultural stereotypes are indeed grounded in reality.

Dost, G. (2024): "Consequently, the existence of masculine gender stereotypes regarding the skills and knowledge necessary for success in STEM careers acts as a barrier for female students to feel a sense of belonging in STEM fields and pursue a career in STEM." (p. 6)

Participants identified traditional gender roles and the lack of gender equality education as the main obstacles to achieving equity, revealing the need to strengthen gender-sensitive training and implement clear and effective institutional policies. This aligns with Fortunato et al. (2025), who emphasize that these factors are among the main drivers of gender inequality in academia.

The study also reveals that respondents perceive less recognition for women's achievements and that women must demonstrate their worth more than men in traditionally male fields such as engineering or economics. As Dost, G. (2024) points out:

"She also found that women are often perceived as less competent by their teammates in male-dominated fields like STEM and have less influence on team decision-making processes according to social role theory. Despite their actual knowledge, capabilities, and expertise, this is a result of the fact that women are underrepresented in these settings and atypical." (p. 4)

## Research Report

Citing Joshi (2014), it is noted that in these fields, women are perceived as less competent and have less influence in decision-making processes, regardless of their actual experience, due to their underrepresentation. This explains why female students perceive this situation as persistent and why lack of recognition constitutes a common form of discrimination.

In addition, 33.3% of the women surveyed reported feeling uncomfortable expressing their opinions when they are a minority within a group. This discomfort is central to the definition of belonging in STEM:

Dost, G. (2024): "Compared to male students, it was mostly female, non-binary, non-White, and first-generation students who defined STEM belonging as 'Feeling safe and comfortable in the STEM community and settings.'" (p. 1)

In other words, female students—especially those belonging to minority groups—value the safety and comfort of the environment as the foundation of their sense of belonging in STEM.

Since the university functions as a social epicenter, the policies and norms it adopts are reflected in the broader social environment. Warner (2025) argues that:

"By implementing gender action policies, academic institutions can stimulate cultural changes that transcend the university walls and promote social acceptance of gender equality." (p. 120)

This reinforces the importance of gender policies as instruments for cultural and social transformation.

Despite social progress, perceptions still persist that women must continually prove their worth and that the choice of disciplines such as economics or mathematics depends on prior abilities:

"...female students choose this specific environment only if they have comparatively high economic knowledge and skills as well as interest in economics." (Jüttler & Schumann, 2019, p. 187)

This aligns with the authors' hypothesis:

H1: The effect of economic knowledge and skills on the probability of the decision to study economics is higher for female than for male students.

Likewise, a positive attitude toward participating in awareness-raising activities was observed, especially among women, although limited by lack of available time. This demonstrates the perception that promoting gender equality falls more on women, as men showed less willingness to participate. Regarding professional growth opportunities, most respondents believe that equitable conditions exist, although a significant portion still perceives inequalities.



## Research Report

Finally, respondents agree that women must make greater efforts to gain recognition in male-dominated fields and value their participation in leadership positions. However, a contradiction emerges: respondents believe that men should not participate in awareness campaigns, while Fortunato et al. (2025) suggest that their involvement is beneficial in reducing the gender gap in STEM.

### Implications: Why Do the Results Matter?

The results make it possible to understand how cultural and social dynamics affect the equity and full participation of women, revealing patterns of inequality that influence their academic and professional trajectories. The university, as an institution that shapes society, plays a key role in advancing SDG 5. University actions and policies promote values that are reflected in the broader population, consolidating the practical relevance of these findings.

These findings provide empirical evidence that underscores the urgency of creating inclusive spaces, recognizing gender biases, and consolidating a university culture committed to equality. They make visible the invisible barriers that limit gender equity, highlighting the need for continuous transformation of academic environments to ensure women's participation and recognition on equal terms.

### Limitations: What can the results not tell us?

Although fruitful, the results do not provide a complete view of the university environment due to the subjectivity of the surveys, the researchers' biases, and the limited interpretation of the talks conducted. Opinions from families and individual motivations when choosing a major are not reflected. The University of Comahue has implemented gender equality campaigns, but the survey reflects a lack of awareness about them. This suggests limitations in the dissemination and communication of policies, as well as obstacles such as institutional resistance, cultural biases, and lack of resources.

Fortunato et al. (2025): "The primary challenge was the low number of participants at the workshops, which limited the diversity and size of our sample. Additionally, we found that discussing these sensitive issues required more time and effort than anticipated, as participants needed time to feel comfortable and open up about their experiences." (p. 4)

### Recommendations: What practical actions or scientific studies should follow?

To promote gender equity in STEM, it is crucial to create safe, inclusive, and welcoming academic environments. This involves reviewing cultural practices and spaces that reproduce stereotypes, allowing female students to express ideas, strengthen their confidence, and ensure their retention and success. Dost. G (2024) states, "In order for students to develop a sense of belonging, it is necessary

## Research Report

to adjust the cues in their environment so that they feel secure, and comfortable, and can be who they are.” (p. 24)

As future educators, it is recommended to plan classes in which students solve problems collaboratively, emphasizing that problem-solving depends on knowledge and not on gender, as suggested by Jüttler & Schumann (2019): “Considering economic education at the upper secondary level, the importance of conveying a picture of economics that is not a typically ‘male’ domain and in which female students can be as successful as male students is crucial.” (p. 188)

Warner (2025) and Peña & Les Valls Ortiz (2023) highlight that gender policies transcend the regulatory level, transforming institutional culture: “Gender initiatives in academia transcend mere policy structures.” (p. 123)

“Gender equity policies in academia are critical structures designed to address systemic inequalities that persist in educational institutions and promote an inclusive environment for all individuals.” (p. 120)

Likewise, Fortunato et al. (2025) point out: “Our study not only [highlights] the necessity of addressing immediate issues such as harassment and gender bias but also calls attention to the broader, systemic changes required to foster long-term gender diversity and inclusion in the field.” (p. 3)

It is recommended to make women in STEM and economics more visible, strengthen gender-perspective education from childhood, and ensure the effective implementation of university policies aligned with SDG 5. Only then can institutions establish themselves as reference spaces for a more just, inclusive, and equitable society.

## 5. CONCLUSION

The university, as a social and educational epicenter, plays a strategic role in promoting gender equality and driving cultural transformation toward the fulfillment of SDG 5. However, the effectiveness of institutional policies depends on their dissemination, implementation, and the commitment of the entire academic community, including men, who currently show lower participation in awareness-raising activities.

This study was conducted with the intention of determining whether there is gender disparity caused by inequality itself. Through the surveys carried out, it was observed that within the National University of Comahue, students perceive inequality rooted in sexist stereotypes. This demonstrates that, although there is greater awareness of gender inequality in the university environment, structural and cultural barriers persist that affect the experience and development of women, especially in traditionally male-dominated fields such as STEM or economics. The perception of biases, stereotypes, and traditional gender roles continues to limit women's confidence, sense of belonging,

## Research Report

and recognition of capabilities, forcing them to prove their worth more than men. Additionally, the study made it possible to highlight how much concern or interest each gender shows toward this situation, resulting in greater participation from women compared to men.

It was also revealed that female students at the National University of Comahue experience a certain level of discomfort, although this remains invisible to students in general. The public talks organized by the Dynamite Team brought these problematic issues to the forefront, reinforcing both the literature consulted and the results of the surveys, allowing these taboo topics to become just another point of discussion within the various groups that make up the student body. In addition to this, the participation of both teaching and non-teaching staff provided a different perspective on how they approach these issues, from strategies to combat inequality to personal experiences that occurred within the university space.

In disseminating our project—through surveys, talks, and invitations—we faced challenges due to the low willingness to answer questions or participate in our proposals. We visited different locations, identities, and events within the faculty to promote our project, and the level of interest was reflected in the number of respondents. We also used a TikTok account ([tiktok.com/@rocio\\_vivanco29](https://www.tiktok.com/@rocio_vivanco29)) to showcase our work, posting short videos aimed at receiving comments to spark conversation for future posts, yet this initiative also failed to generate engagement from members of the faculty.

During our participation in the talks, we noticed low interest from men, since most attendees were women. One participant mentioned that she had attended another talk and that none of them had seen significant male participation. Situations related to gender stereotypes and harassment occurring within the university were also addressed, though many are often not made visible. These situations restrict students' freedom, such as being unable to remain on campus at night, which directly affects their academic performance.

Workplace experiences were also mentioned in which hiring decisions were based on physical appearance: one participant recalled that her boss made all kinds of sexist comments and once hired the woman who would become her coworker because "she was ugly," supposedly preventing employees from flirting with one another.

A debate also emerged, in which one student argued that these recommendations were not optimal because "many of these options caused expense without benefit" and the message does not reach the people who are the problem, since "trainings are usually attended by people who are not part of the problem, and those who are, do not attend."

Finally, although the results provide valuable information about perceptions and experiences within the university, they do not reflect all external or individual factors that influence career choice and academic trajectory. Therefore, it is recommended that further complementary studies be conducted, including family, cultural, and motivational variables.

## Research Report

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