Journal University Management 9 [20]1-15: e2920115
Article

The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres

La trayectoria de las mujeres SNII en Instituto Tecnológico Superior de San Martín Texmelucan. La disputa del trabajo de reproducción social en el espacio público y privado

Soto-Rivas, Soledad[a], Hernández-Hernández, María Elena[b] and Irigoyen-Arroyo, Luis Ernesto[c]

[a] Tecnológico Nacional de México Campus San Martín Texmelucan • LMO-8430-2024 • 0000-0003-3730-7586 • 329347
[b] Tecnológico Nacional de México Campus San Martín Texmelucan • O-8193-2018 • 0000-0001-7172-3802 • 927536
[c] Tecnológico Nacional de México Campus San Martín Texmelucan • ABC-1173-2021 • 0000-0002-2037-1621 • 472901

Classification:

Area: Social Sciences
Field: Sociology
Discipline: Topical social or social problems
Subdiscipline: Gender studies and women

https://doi.org/10.35429/JUM.2025.9.20.2.1.15
History of the article:
Received: June 07, 2025
Accepted: November 10, 2025

* ✉ [soledad.soto@smartin.tecnm.mx]

Abstract

This article presents an analysis of the trajectory of the women members of the SNII attached to the Instituto Tecnológico Superior de San Martín Texmelucan through a qualitative methodology with a feminist perspective with the aim of making visible the academic and scientific work they carry out within a Decentralized Higher Education Institution, which is characterized by particular nuances of hiring and structural organization that exacerbate the job insecurity and hiring instability that configures the public space of science and academia.

The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres.		
Objectives	Methodology	Contribution
Make visible the academic and scientific work carried out by women members of the SNII in the face of the disputes they experience in private spaces.	Qualitative methodology, particularly critical narrative as a possible and coherent format with the theoretical foundations of feminisms	The disputes between academic and scientific work and the reproductive work carried out in the private sphere. The representation of women in the SNII of the ITSSMT

Researchers women, Academic Work, Social Reproduction

Resumen

El presente artículo presenta un análisis de la trayectoria de las mujeres integrantes del SNII adscritas al Instituto Tecnológico Superior de San Martín Texmelucan a través de una metodología cualitativa con perspectiva feminista con la finalidad de visibilizar el trabajo académico y científico que realizan dentro de una Institución de Educación Superior Descentralizada, que es caracterizada por matices de contratación y organización estructural particulares que agudizan la precariedad laboral y la inestabilidad de contratación que configura el espacio público de la ciencia y la academia.

La trayectoria de las mujeres SNII en Instituto Tecnológico Superior de San Martín Texmelucan. La disputa del trabajo de reproducción social en el espacio público y privado		
Objetivos	Metodología	Contribución
Visibilizar el trabajo académico y científico que realizan las mujeres integrantes del SNII frente a las disputas que viven en los espacios privados	Metodología de carácter cualitativo, particularmente la narrativa crítica como un formato posible y coherente con las bases teóricas de los feminismos.	Las disputas que llevan a cabo entre el trabajo académico y cientifico con el trabajo de reproducción llevado a cabo en el espacio privado. La representatividad de las mujeres en el SNII del ITSSMT

Investigadoras, Trabajo académico, Reproducción Social

Area: Advocacy and attention to national problems

Citation: Soto-Rivas, Soledad, Hernández-Hernández, María Elena and Irigoyen-Arroyo, Luis Ernesto. [2025]. The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres. 9 [20] 1-15: e2920115

Introduction

This is a qualitative study on disputes over public spaces in science and academia through the recognition of academic work within the educational projects of the ITSSMT and the social reproduction work carried out by researchers recognised by the SNII and affiliated with the Descentralised Technological Institute. This is important because it highlights the work carried out by women who work double and triple shifts in the domestic sphere and yet are researchers appointed within the science evaluation system in Mexico.

The added value is that gender studies place the subjects of study as women researchers who are protagonists in the transformation of science, since despite being less represented at the national level with a participation rate of 40% for the SNII in 2025, their performance at the ITSSMT represents a break with the so-called glass ceiling and shows that, despite being mature women, they are examples of women's historic struggle to make their presence felt in public spheres such as science and academia.

The central hypothesis is that the gender roles performed by female researchers through social reproduction work is a factor that causes greater emotional and health strain, but that despite this, at the ITSSMT, it is female researchers who are recognised in the evaluation system.

To carry out the study, the following topics are developed:

a] Description of the Decentralised Technological Institutes as the institutional space where female researchers carry out their work; b] The transformation of teaching work under neoliberalism, where productivity is rewarded and evaluation systems such as the SNII, PRODEP and ESDEPED emerge; c] The need for a gender perspective in the representativeness of the SNII to identify participatory gender quotas and analyse the viability of public policies in pursuit of equity, d] the qualitative methodology used in the interpretation of the researchers' narratives, e] interpreted results and finally g] conclusions that highlight the trajectories of teachers appointed by the SNII at the ITSSMT.

Decentralised Technological Institutes

Meza, *et al*. (2024) document that higher education in Mexico is composed of thirteen subsystems based on their legal regime or the areas of training in which they specialise. They can be classified as public or private; autonomous or state-run; universities or technological institutes or of various kinds.

It is composed of the following 13 variables: Federal public universities, State public universities, Technological universities, state public universities with solidarity support, technological institutes, polytechnic universities, the National Pedagogical University, the Open and Distance University of Mexico, intercultural universities, public research centres, public teacher training colleges, other higher education institutions that, due to their particular characteristics, cannot be placed within the above subsystems, and private higher education institutions.

Once located within the universe of higher education in Mexico, the National Technological Institute of Mexico [TECNM] is one of the main public institutions of technological higher education in Mexico, with a student enrolment of 602,954 in 2021. Its coverage represents 12.9% of higher education enrolment and, through its engineering and exact sciences profile, it trains 41% of engineers throughout the country annually.

Institutionally, the TECNM's objective is to provide higher technological education, continuing education, dual education, refresher courses, training and academic improvement, and its scope in higher and postgraduate education aims to focus on strategic sectors of the country's development. It is important to discuss the construction of academic and scientific spaces as mechanisms of power that regulate positioning and permanence in teaching work.

It is important to mention the scope of the programmes offered through the TECNM, which are: 5 higher technical degrees, 2,059 bachelor's degrees and 280 postgraduate degrees.

ISSN: 2523-2495
RENIECYT: 1702902

Soto-Rivas, Soledad, Hernández-Hernández, María Elena and Irigoyen-Arroyo, Luis Ernesto. [2025]. The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres. 9 [20] 1-15: e2920115
https://doi.org/10.35429/JUM.2025.9.20.2.1.15

There are eight scientific fields in which the programmes are developed: arts and humanities; social sciences and law; administration and business; natural sciences, mathematics and statistics; information and communication technologies; engineering, manufacturing and construction; agronomy and veterinary science; and services. The former National Quality Postgraduate Programme [PNPC], now the National Postgraduate System [SNP], is divided into 105 master's degrees and 33 doctorates. In terms of the PNPC level, there are 30 consolidated programmes, 79 in development, 26 recently created and 3 of international competence. The TECNM is made up of 254 institutes, of which 126 are federal and 122 are decentralised.

In other words, decentralised technological institutes represent 48% of all technological institutes. It also has four regional development and equipment centres and two research centres. Given the structure of the TECNM, the actors involved in the goal of education as a human right include teachers, administrators, and support staff.

Technological Institutes in the State of Puebla

This section presents data on the ITFs and ITDs in the state of Puebla, their year of creation, and student enrolment for the 2024-2025 academic year. There are 17 ITs in the state of Puebla, of which 3 are ITFs [18%] and 14 are ITDs [82%]. The ITs in Puebla were founded between the early 1970s and 2007, following four decades of implementation of technological higher education in the state. Carro and Lima [2024] identify the need to reverse the established neoliberal educational model, as pointed out by Villalvazo [2016], in three stages: the post-revolutionary [1921-1940], the urban capitalist [1940-1976], and the globalisation [1976-2007] stages. The years of creation of the ITs in Puebla are used to link the nation project with the educational models and, with that, the infrastructure created.

The approach to the public university as a space for analysis identifies the importance of educational projects. Latapí [1998], cited in Carro y Lima (2024), refers to five educational projects in the 20th century: the original Vasconcelos project through rural education, the creation of the SEP in 1921;

The socialist project [1934-1946] with compulsory education; the technological and industrial project proposed in 1928 by Sáenz and continued by Cárdenas; the national unity project [1943-1958]; and the modernisation project from the 1970s onwards [Carro y Lima (2024)]. In the state of Puebla, the creation of ITs emerged in the final stage of the capitalist urban educational model and that of globalisation, as identified by Villalvazo [2016] or the so-called modernising model (Carro y Lima, 2024).

Thus, the public university is the public space where the researchers in this study carry out their academic and scientific work. The university as a public space is perhaps one of the institutions that has changed the most in its structure and organisation since the implementation of neoliberalism in Mexico in the late 1980s (Gutiérrez y Echeverria, 2023).

In particular, the ITSSMT was founded in the early 20th century in the municipality of San Martín Texmelucan, in an industrial area that evolved from an agricultural economy to an industrial and service region, as detailed in the import products of the Texmelucan region [Secretariat of Economy, 2025]. Thus, the ITSSMT emerged in response to a neoliberal education policy, founded as a decentralised public body of the state government.

Currently, ITSSMT and its teaching staff find themselves in a postmodern context described as ‘innovative’ by Acosta (2022). University governance, power and autonomy in the era of innovation date back to the years of educational modernisation in the 1990s, when evaluation and accreditation were placed at the centre of institutional management from the second decade of the 21st century onwards, right at the time of the COVID-19 pandemic.

Higher education institutions coexist with "information and communication technologies, the robotisation of public and private services, data science, digitisation and artificial intelligence, as well as the proliferation of boot camps, digital platforms and hubs, tools that are considered to be the causal basis of innovative processes in industry, government, public services and global trade, as well as in academic and professional training processes" (Acosta, 2022).

ISSN: 2523-2495
RENIECYT: 1702902

Soto-Rivas, Soledad, Hernández-Hernández, María Elena and Irigoyen-Arroyo, Luis Ernesto. [2025]. The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres. 9 [20] 1-15: e2920115
https://doi.org/10.35429/JUM.2025.9.20.2.1.15

Transformation of academic work in globalisation

The teaching staff hired at TECNM is configured as a transforming agent that cuts across educational policies. Educational policies in globalisation create "a narrative of cultural development and educational ideology at the global level (García y Chavoya, 2014).The human capital that contributes to Article 3 of the Constitution related to education is an important part. According to TECNM reports [TECNM (2020)], for the 2020-2021 school year, there are 30,483 teachers, of whom 13,671 are classified as full-time teachers, 13,693 have postgraduate degrees [17% with doctorates, 82% with master's degrees and 1% with specialisations] and 3,478 have desirable profiles. It should be noted that academic staff are required to complete compulsory diploma courses, which include: Diploma in Tutor Training, Diploma in Teacher Training and Skills Development, Diploma in Educational Resources in Virtual Learning Environments, Comprehensive Programme for Professionalisation, Training and Updating of Digital Skills, among others that are requested. The constant credentialisation of teacher training at TECNM is characteristic of the incursion of neoliberalism into higher education [Carrasco, 2020; Ordorika, 2010]. This research aims to contribute to the debate on academic work in a neoliberal context.

Through a feminist methodology, the strategies of the SNII researchers at ITSSMT as ITD are highlighted. The narratives of the researchers allow us to situate knowledge and experiences in order to politicise the disputes or reconciliations that take place between science, capital and domestic spaces.

In the neoliberal context, academics affiliated with the SNII face conflicts in their academic and research work due to the new productivity standards required [SNII, PRODEP, ESDEPED]. Researchers are mostly responsible for unpaid reproductive work, which is devalued by societies such as Mexico's, since, although they are researchers, they are first and foremost women, and as women, they are culturally assigned domestic work. One of the main theses of this article is the complexity that exists between the public and private spaces in which women are immersed in the dichotomy of the sexual division of labour (Toledo y Aguilar, 2016).

However, the public space where academic and scientific work is carried out by women academics faces competitive neoliberal educational environments. Aboites (2010) refers to a crossroads for Latin American universities in the face of the dismantling of the principles of nationalist and welfare society that identified them in the 20th century.

Education and public universities, conceived as training grounds for the highly competitive human capital required by international corporations, face the even greater needs for knowledge generated by thirty years of dispossession and dismantling of education as a social heritage in the deeply differentiated Latin American societies (Aboites, 2010, p. 96).

Academic and research work faces the scientific productivity required by evaluation systems in terms of quantity, while globalisation as a stage of capitalism forces public institutions to compete in the major rankings, and with this, teaching staff, both women and men, take on the task of being present with the required output.

Women dedicated to science who are in ITDs, as in the case study, face the crossroads of globalisation, understood as ‘a stage in the development of capitalism and a hegemonic model of capital that establishes a set of different relationships within and between state institutions’. Public institutions founded on the modernising educational model, such as the TSSMT in the study, regulate the academic work of the researchers in the study. Constant evaluations, courses and diplomas shape the training of the researchers in the study.

Higher education institutions in the neoliberal model promote the quality, competence and productivity characteristic of the hegemonic model of capitalism. The way in which Mexican public universities that carry out research face international rankings goes through what Ordorika (2006, p. 42-44) calls a ‘powerful mechanism for reproducing inequalities which faces a system of value allocation’.

ISSN: 2523-2495
RENIECYT: 1702902

Soto-Rivas, Soledad, Hernández-Hernández, María Elena and Irigoyen-Arroyo, Luis Ernesto. [2025]. The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres. 9 [20] 1-15: e2920115
https://doi.org/10.35429/JUM.2025.9.20.2.1.15

The way research is conducted within academia has undergone changes aimed at distinguishing scientific productivity. For Galaz *et al* (2012), members of the S.N.I.I. within the Teaching Involvement Classification - Research Classification based on productivity carried out by the highest academic degree indicates that professors who meet the levels required by the scientific evaluation system, together with the criteria of the faculty improvement programmes, face external demands to increase research.

In other words, S.N.I.I. members face greater qualification challenges than faculty hired in public institutions that do not have this distinction. However, they face social questioning as to whether their scientific productivity addresses social realities. The disputes are complex because they arise both from the configuration of the teaching profession through the historical construction of recent decades in Mexico and from the link between the social science they produce and the search for common/social welfare.

According to Estévez y Martínez (2012), there have been transformations for academics working in Mexican higher education – as is the case with the S.N.I.I. – who, in addition to working for higher education institutions, are regulated by quality assessment systems with regard to scientific productivity. For the authors, since the 1960s there has been a greater demand for teaching services.

From the perspective of Galaz, *et al* [2008], cited in Estévez y Martínez (2012, p. 372), the configuration of the role of academics in Mexico has undergone four fundamental stages: the first, known as the 'professor' stage, covering only hours per week and increasing their professional status; the second stage, known as the 'teacher' stage, lacked professional experience and, due to the expansion of university enrolment beginning in the 1970s, staff were hired who sometimes lacked a university degree; the stage emphasising the academic as a 'researcher', created in 1984, saw federal support within schools to carry out these functions; Finally, the stage of the 'integral' and "desirable" functions of the academic.

Similarly, in their study, Estévez y Martínez, when referring to the analysis of gender equality, point out that 'women are not fewer in number, but also occupy positions of lesser importance within the institutional hierarchy' [2012, p. 382]. However, as can be seen in the ITSSMT reports, only three women are recognised by the SNII. These reports refer to work to be recognised as teachers, academics and scientists in a neoliberal educational context.

The formation of teachers with S.N.I.I. and PRODEP profiles are desirable characteristics in a context of international competition and productivity measurement standards that are so important in the current stage of neoliberalism that it permeates the fields of research and public higher education. Public policies in education and the Mexican scientific system cannot be separated from the formation of human resources that are desirable for their 'quality and productivity.'

The race for meritocracy rewarded in the neoliberal context is the framework of quality and productivity required by scientific evaluation systems. Public universities also meet the productivity standards required by global organisations such as the International Monetary Fund [IMF] and UNESCO, among others. Casanova y Rodríguez (2014, p. 13) point out that 'the governance of public universities was modified by the influence of changes in belief systems, contextual transformations, and the profile of public policies.'

Other evaluation programmes have emerged in the arena of academic competition. Acosta (2014) notes that the emergence of programmes such as the Fund for the Modernisation of Higher Education [FOMES] [1991-2000], the National System of Researchers [SNII] [1984-present], the Comprehensive Institutional Strengthening Programme [PIFI] [2000-present], the Teacher Improvement Programme [PROMEP] [1998-present] and the systems of incentives for the academic performance of university professors [1994-present], 'these funds can represent up to 17% of the total budget of universities, although the overall average is estimated at around 10%' [Acosta 2014, p. 39].

ISSN: 2523-2495
RENIECYT: 1702902

For Navarro and Pacheco [2014, p. 84], 'The Teaching Performance Incentive Programme is part of a policy to compensate for the low salaries received by teachers, created by the federal government and implemented in public universities.'

ESDEPED began in May 1992, in the context of the so-called modernisation of public universities, aimed at academics whose main activity is teaching. As established in the BUAP Academic Portal user manual. ESDEPED Programme 'The federal government, seeking to promote and accelerate the process of modernisation of upper secondary and higher education, proposes a policy of incentives that emphasises the establishment of differentiated economic benefit programmes.'

At the national level, 28,601 staff members are contracted by the TECNM for the 2024-2025 period, of whom 17,865 are men [62%] and 10,736 are women [38%]. By type of contract, 14,163 teachers are full-time, representing 49.51%, 12,512 teachers are hired by the hour [43.74%], 996 teachers are part-time, representing 3.4%, and 930 teachers are hired for ¾ time [3.3%]. (TECNM, 2024).

Within the ITs in the state of Puebla, 1,538 teachers are employed, of whom 917 are men [60%] and 621 are women [40%]. By type of contract, 549 are full-time [35%], 917 are paid by the hour [60%], 40 are part-time [3%], and 32 are three-quarters time [2%] [(TECNM, 2024).

Specifically, at ITSSMT, 85 teachers were hired in 2024, of whom 41 are men [48%] and 44 are women [52%]. By type of contract, 61 teachers are hired on an hourly basis [72%] and 24 are full-time teachers [28%]. It should be noted that ITDs do not hire part-time or three-quarter time teachers.

This reflects the precarious nature of employment in this type of contract.

According to the degree of ITSSMT teachers, they are distributed as follows: 38 teachers have a bachelor's degree [16 F, 22 M], 32 teachers have a master's degree [20 F, 12 M], and 15 teachers have a doctorate [5 F, 10 M].

Of the 24 full-time teachers, 10 are men [42%] and 14 are women [58%]. With regard to the desirable profile, 19 teachers have recognition, 7 of whom are men and 12 are women. However, the teachers with SNII recognition for 2024 are 3 women, 2 with candidate status and 1 with level I status.

The need for a gender perspective in the analysis of the SNII at the TECNM

It is important to recognise teachers through scientific evaluation systems. By 2020, there were 1,202 academics recognised by the National System of Researchers [SNII], of whom 443 are candidates [37%], 663 are level I [55%], 71 are level II [6%], and 19 are level III [2%]. It should be noted that the most common designation is Level I. By 2024, there were 1,773 SNII members affiliated with the TECNM, of whom 498 were candidates [28%], 935 were Level I [53%], 129 were Level II [7%], and 37 were Level III [2%]. Similarly, the contribution that this research aims to make is to identify that the scientific work carried out within the SNII is a social construct under mechanisms of power [Soto, 2017].

The SNII recognition of teachers hired at the TECNM is represented in Table 1, which identifies the evolution of SNII members over the last 9 years.

Box 1

Table 1
Evolution of SNII in the TECNM.

Year	Candidate	SNII Level I	SNII Level II	SNII Level III	Total
2015	185	324	45	10	564
2016	203	355	56	13	627
2017	234	402	56	13	705
2018	275	426	56	12	769
2019	310	493	62	13	878
2020	379	560	65	16	1020
2021	443	669	71	19	1202
2022	450	821	88	30	1389
2023	498	935	129	37	1599
2024	579	1013	140	41	1773

Source: (TECNM, 2024)

ISSN: 2523-2495
RENIECYT: 1702902

Based on these statistical data issued by the TECNM (2020, 2024),, there is a need to analyse the representativeness of the SNII from a gender perspective, as there are no statistical data on women and men assigned to the SNII in the TECNM, and a critical feminist perspective is required to distinguish categories such as the sexual division of labour, gender roles, and power relations in patriarchy and capitalism embedded in science and academia.

Research methodology

Gender studies favour qualitative methodology, particularly critical narrative as a possible format consistent with the theoretical foundations of feminism, to show the political and ethical importance of feminist projects (Beiras, *et al* 2017). The orientation of this work is based on qualitative research that attempts to understand subjectivity, interactions, and meanings through the interpretation of narratives. These narrative structures serve as guides for interpretation, including thoughts, desires, feelings, and dispositions. The experience is lived, narrated, shared, and reflected upon.

Listening to experiences and narratives allows us to map discourses and experiences [Nava and Ramos, 2025]. This qualitative methodology allows us to contribute to listening to their demands and projecting them onto the need for public policies. The working hypothesis of the research is: The academic and scientific work carried out by researchers is developed under productivity standards required in science and academia, which rewards high indices while ignoring power relations in public [ITSSMT] and private [domestic] spaces.

This article therefore aims to identify disputes in public spaces as an opportunity for state intervention through public policies. In this regard, Loaiza (2025) refers to the articulation of women's demands at the macrosocial level to ‘destructure the social systems that reproduce and internalise gender inequality’. Thus, the strategies carried out by the researchers are specific to their employment status at the ITSSMT, SNII level, academic bodies, teaching activities, outreach, academic management and marital status, caregiving, care for economic dependents, i.e., social reproduction work such as domestic work, caregiving and biological reproduction, which involves specific reconciliation strategies.

The objective of this research is to highlight the academic and scientific work carried out by women members of the SNII in the face of the disputes they experience in private spaces where social reproduction work, domestic work and biological reproduction take place.

At the ITSSMT, of the 85 teachers hired in 2025, only 4 are members of the SNII. As detailed in Table No. 2, 3 of them are women, i.e. 75% of the teaching staff assigned to the ITSSMT.

Box 2

Table 2
Researchers assigned to the ITSSMT in 2025

Pseudonym	Age	Nivel	Marital status	Children	Year of recruitment
Laura	44	I	Married	2 [12 and 14 years]	2008
Diana	57	C	Married	NA	2008
María	54	C	Married	2 [22 Y 24 years]	2019
Juan	44	I	Married	4 daughters	2023

Results

The ITSSMT was contextualised within the educational projects of the regions by identifying the public space where SNII researchers are assigned. Through a critical perspective, it was identified that the ITSSMT is a decentralised technological institute, ranking fifth in order of importance according to its enrolment. The focus of this research is on SNII researchers, of which there will be three by 2025.

This section critically interprets the narratives of teachers affiliated with the ITSSMT. When analysing the meaning of recognition for teachers, they refer to it as not only an economic incentive, but also a source of personal satisfaction. Aguado y Becerril (2021)] identify the importance of the SNII as ‘the conditional transfer of economic resources from the institutionalised programme.’ However, for SNII candidates at the ITSSMT, this financial remuneration is not the only driver of recognition; social and family appreciation, as well as that of students, is also important. This appreciation is complicated by the challenge of balancing activities in the public and private spheres.

ISSN: 2523-2495
RENIECYT: 1702902

More than the financial benefit, I feel socially recognised because my students recognise the academic work I do [Diana, 57 years old, SNII C].

I have just joined the SNII and have no experience in this, but I consider that my main challenge is the time I devote to the ITSSMT to carry out activities. I am aware that remaining in the SNII means working more and more, being productive and, with that productivity, maintaining my position in the SNII [María, 54 years old, married, two children, SNII C].

For me, the SNII appointment is very important financially because I am the breadwinner in my family. My husband has additional income, but it does not match the contribution I make to our family [Laura, 44 years old, two children, SNII level I].

Emotional exhaustion and lack of infrastructure at the ITSSMT

ITSSMT researchers affiliated with the SNII recognise that having an appointment with the SNII brings with it more work and greater stress in maintaining academic work and scientific recognition. Magaña y Sánchez (2008), in a comparative study of emotional exhaustion syndrome between the Technological System, Research Centres and Universities, identified that in the technological system there is emotional exhaustion due to "working conditions such as lack of resources, laboratories and infrastructure. The excessive quantitative and qualitative workload. The multiplicity of roles they have to assume."

The work at ITSSMT in academia, teaching and research is very stressful and has indeed had an impact on my health. My husband tells me that I have given up on work... I am apprehensive about things... something I learned from my father as a child was that if you are going to do something, do it well or don't even bother, make it the best it can be, and that has made me apprehensive, making it difficult for me to relax. If I am in the SNII, more than the financial incentive, it is a source of pride and personal recognition, not for my partner or my children, but for me. It is an achievement and a source of personal satisfaction... Suddenly, I value it and think, “Forget all this, it's too much and I'm just getting started...” [María, 54 years old, married, two children, SNII C].

Here at work within the ITSSMT, I believe that we have teaching, tutoring, outreach and academic management activities that take away time from activities that help us build our CVs and increase productivity to remain in the SNII [María, 54 years old, married, two children, SNII C].

We don't have access to database platforms, we don't have licences. For example, I want to consult journals, but we don't have any agreements, budget or licences to access these scientific databases. We don't even have access to EBSCO [María, 54 years old, married, two children, SNII C].

It should be noted that contracts at the ITSSMT are temporary, and full-time status must be evaluated annually based on productivity. Therefore, there is no stability or certainty in terms of seniority in the employment relationship.

There are SNII researchers in other departments who have job security, but we do not have job security; there is no such thing at this IT [María, 54 years old, married, two children, SNII C].

The type of contract contributes to obtaining recognition, as Aquino y Álvarez (2024) point out, although teachers hired by the hour have greater job insecurity and are therefore less likely to obtain and remain in the SNII. ITSSMT researchers have no certainty regarding their seniority, and the type of full-time appointment represents a type of job insecurity that is rarely addressed.

Domestic work among researchers without gender roles and with older children

Cortes y Campos (2024) refer to the obstacles and limitations that women face when entering the SNII, one of which concerns the sexual division of labour in terms of domestic work. When asked if there is any dispute over domestic work carried out in the private sphere, the researchers report:

At first, it was difficult to balance my family role and adapt to my full-time job as a teacher, but we have been adjusting as we go along, so I have not had any problems.

ISSN: 2523-2495
RENIECYT: 1702902

I have a husband who supports women's development, I have fulfilled myself as a professional, and he is developing in another direction... now I support him, and there is no rivalry as a couple in that sense... [Diana, 57 years old, SNII C].

My children get upset if I bring work home, so I try to do all my ITSSMT work at the university. However, when I have to hand in work, I stay up late to finish the article or chapter that we have as full-time lecturers [Laura, 44 years old, 2 children, SNII level I].

When there is no domestic work or caregiving, there is time to devote to academic and scientific activities. As Gutiérrez and Echeverría [2023] refer to, based on the study by Caldera *et al* (2019), older female researchers have a greater chance of climbing the SNII ladder.

As for balancing family life, we do things as they come up and according to circumstances. When I can't cook or do the housework, I have my mother's support... [Diana, 57 years old, SNII C].

Therefore, when there are no children to care for and there is commitment on the part of the teachers' partners, academic work is not impacted by domestic work.

The study of masculinities in interactions between couples where women are the breadwinners emerges alongside strategies for reconciling public and private spaces. 'Some of the participants negotiate and discuss with their partners, in a rational and explicit manner, how they will manage to keep their jobs, develop their profession and continue to advance in the public sphere and in their working lives' (Castañeda y Contreras, 2021).

Domestic work does not affect me because work at home is not a priority. If I have to sit down to work as a teacher or lecturer, I do not do any work at home, but if I do, it does not matter, we are not demanding ... [Diana, 57 years old, SNII C].

I spend about four hours a day caring for people, two hours on meals, I do not clean, I do not socialise, maybe an hour at most. More than eight hours are devoted to academic and scientific work [María, 54 years old, married, two children, SNII C].

The ITSSMT Level I researcher is younger than the two candidates. She is the leader of the academic body in consolidation, and her strategies for reconciling family and scientific life refer to making academic, research, and management work more efficient.

My mother tells me that 'I'm going to die' if I work in the early hours of the morning, so when we have to submit an article, I have to lie to my mother and say that I didn't stay up late because she worries that I 'don't sleep' because of my research or teaching work [Laura, 44 years old, two children, SNII level I].

Although María [54 years old, married, two children, SNII C] says that she can now devote the necessary time to scientific and academic work, the time spent caring for her children during her postgraduate training was a necessary cost of remaining active in the public sphere of science and academia.

The cost of academic training was sacrificing time together, not being able to go out, but we agreed that my husband would say to me, 'You go first to your master's degree and then I'll go to another training course,' and he was attentive, asking me what I needed for my professional development [Diana, 57 years old, SNII C].

Joint responsibility of couples

The strategies used and developed by the participants to achieve this harmonisation are diverse. On the one hand, they consist of organising and coordinating with their partner the study and training times of each member of the relationship; for example, one member of the couple does a postgraduate degree and then the other (Castañeda y Contreras, 2021)

The way my husband contributes is that, because he has a career similar to mine, he reads my articles and gives me feedback... [Diana, 57 years old, SNII C].

ISSN: 2523-2495
RENIECYT: 1702902

Castañeda y Contreras (2021) point out that 'it is important to analyse not only women, their work-life balance strategies and their life plans, but also to include in the discussion the attack on masculinity that many men experience'. In the case of the ITSSMT researchers, they have defended and built their careers through the mediation of strategies with their husbands.

I did the caregiving work from Monday to Friday, and when my husband helped me with that, it was quite a challenge for him because one summer when I had to work, he had to stay with the children. He had never been 100% in charge before, but he supported me a lot when I returned to teaching. I would go in the morning to drop my son off at nursery, and my husband took care of our daughter. He had to learn how to comb the girl's hair and give her breakfast, and that was great for me and my daughter.

That's when I felt truly supported. We only had one car, and I took it. I've seen couples where the man uses the car, but I always took the car. My husband used public transport. There was a semester when I started work at 8 a.m. and my husband had to take care of combing our daughter's hair, take the minibus with her backpack and his, drop her off at nursery, and pick her up when I finished work [María, 54, married, two children, SNII C].

During the years I was in graduate school, he was in the national union and was away a lot. He went to national meetings and sometimes came home for a week and then left for work for a week. We got used to him not being there. He didn't mind so much because he was involved in other things, travelling all over the country. It was my children who minded.

They told me themselves when I finished my doctorate, "We don't want you to study anymore." I admit that I was at home, supposedly looking after them, but I was also involved in my doctorate [María, 54 years old, married, two children, SNII C].

My husband doesn't like to cook, so I have to organise and prepare what we are going to eat or buy. My husband has had anxiety attacks when doing housework [Laura, 44 years old, two children, SNII level I].

Although 54-year-old teacher María was appointed as a candidate a year ago, in 2024, it was during the period when she was caring for her children that she consolidated her postgraduate studies with the 'support' of her husband. In her narrative, she refers to how difficult it was for 'him' but that, for them, mother and daughter, it was a "great" experience, as now it was 'his' turn to even comb their daughter's hair and take her to nursery.

When my children were small, I devoted myself solely to the home and to caring for them. It was a challenge. The children were younger and required a lot of my care. I never left them with anyone. The person who really supported me was my husband. I would go to my doctoral classes in the evening from 7 to 10 p.m. By that time, he would arrive and take care of the children, and I would go to the university [María, 54 years old, married, two children, SNII C].

Motherhood and science

Motherhood and science is an epistemic crossroads under debate. Palomar (2009) points out that 'the social construction of motherhood is a revelation of the social gender order.' However, this research is based on the hypothesis that the social reproduction work carried out by women is an important factor in the positioning of the SNII.

I was not a mother, but I think if I had been, it would have had an impact on my productivity. My professional growth is focused on my family, on my husband, who is proud of me. We talk about ourselves as a family and about the achievements I have made, such as my appointment to the SNII [Diana, 57 years old, SNII C].

The exercise of motherhood goes beyond the subjective experience described by Palomar (2009) and represents a form of social reproduction that affects the way academic and scientific work is carried out. That is why the construction of the experience of motherhood in the academic world would reveal new aspects of both that experience and the nature of higher education institutions Palomar (2009).

ISSN: 2523-2495
RENIECYT: 1702902

The decision to become a mother in the career of female academics

When I first got married, I was working in industry by mutual agreement. I did not get pregnant immediately; my thinking was not to have children at that time. I considered it important to spend some time alone without children. It was not in my plans to have children; I had considered not having a family when I was newly married. I had the choice and my husband agreed [María, 54 years old, married, two children, SNII C].

Once I decided to have children, the decision was that one of us had to take care of them. I simply felt that I would never leave the upbringing of my children to someone else, whether it was my brother or my mother. It was my own decision to leave my career and devote myself 100 per cent to my children [María, 54 years old, married, two children, SNII C].

When I became pregnant with my daughter, I began studying for my master's degree, and when I became pregnant with my second child, I began studying for my doctorate [María, 54 years old, SNII C].

Motherhood and teaching

I decided to work in teaching because it allowed me to work a few hours. My strategy was that while I was at work, my children were in kindergarten and nursery school. I would go to my classes for two or three hours, drop them off, and when I left work, I would devote myself to my children [María, 54 years old, married, two children, SNII C].

My family has helped me care for my children, as I have had support from my husband, my father, and my mother to look after my children, so motherhood has been bearable because I have had their support [Laura, 44 years old, two children, SNII level I].

Support when caring for young children

I never used nurseries. When they were at school, I used that time to work outside the home [María, 54 years old, married, two children, SNII C]. As for the care of my children, I did not have any support networks.

I took care of them myself, and the only person I needed support from was one of my sisters, who helped me sporadically [María, 54 years old, married, two children, SNII C].

The age of the researchers as a limitation of the SNII

Until 2020, there was an age restriction for entering the SNII, as Article 4 RSNI [2020] stated as a requirement: ‘d. Be under 40 years of age at the close of the Call for Applications, with exceptions to be decided by the Adjudication Committees.’

In this regard, researcher Diana [57 years old, SNII C] states that she did not plan to join even though she met the productivity requirements, as she has been with the ITSSM for 17 years and has been a full-time professor for 10 years.

I have been working full-time for 10 years and have 17 years of service at ITSSMT. A year ago, I was appointed to the SNII. To be honest, I did not plan to join the SNII because I was already over the age limit required by the SNII. I thought that door was closed for me... That didn't hinder my professional growth because I had an impact on the students, but when this opportunity opened up, I was very happy... It's one of the greatest satisfactions I've had professionally... [Diana, 57 years old, SNII C]. The researchers who are affiliated with the SNII as candidates have an average age of 54 years and one year of seniority in the evaluation system.

I worked at this same institution more than 15 years ago. I returned in 2019 to work at the ITSSMT. I was granted candidate status a year ago [María, 54 years old, SNII C].

The level I researcher [Laura, 44 years old, Level I] has 18 years of seniority at ITSSMT and her first SNII appointment was in 2020 as a candidate, with a one-year extension in 2024 due to illness and a level I appointment in 2025.

Cost of productivity in interpersonal relationships within the domestic sphere

Unfortunately, there is a cost. For example, I spent four years doing my doctorate, at home but not really there, as my children said.

ISSN: 2523-2495
RENIECYT: 1702902

Those years were so absorbing with my doctoral studies that I neglected my partner and my children because they required a lot of time [Maria, 54 years old, married, two children, SNII C].

When I received my appointment to the SNII five years ago, it was a difficult time for me because I got divorced, although I remarried my husband. There were times when I thought I had neglected my family, and it crossed my mind to resign full-time to devote myself to my family [Laura, 44 years old, two children, SNII level I]. I had never dreamed of being in the SNII. I didn't seek this out; it just happened, and here we are. It has been a sacrifice to put my family, my children, and my partner aside. Right now, we can say that my children are grown up and don't need me as much anymore.

They are independent, but I feel that when they needed me most, I was a little absent. If you want to get something, you have to sacrifice something. You can't have everything without making sacrifices [Maria, 54 years old, married, two children, SNII C].

I requested a one-year extension due to illness. I have had health complications, and my family tells me it is due to stress. It worries me because I am the breadwinner for my family, so I constantly get check-ups to put my mind at ease [Laura, 44 years old, two children, SNII level I].

Motivations for personal satisfaction in pursuing a postgraduate degree

I found my studies particularly difficult because I didn't have the foundation, as I did my primary education at an adult school in six months, not like everyone else, and then secondary school is not the same, because I did it at the INEA in three years.

All of that had an impact on me and made things difficult. It has been complicated, it has taken a lot of dedication in a way, I have sacrificed my family, but I think it has been worth it. It is a personal satisfaction, not so that people will call me “doctor”, but simply for personal satisfaction. It is doing a postgraduate degree for satisfaction, not to achieve better living conditions [María, 54 years old, married, two children, SNII C].

Conclusions

The SNII was created in 1984 and represents recognition of female and male researchers through categories recognised for scientific productivity. The representation of women has increased since the creation of the SNII, reaching 40% by 2025 according to data from the SNII census issued by SECIHTI.

Particularly in the higher education subsystem of decentralised technological institutions, such as the ITSSMT, it can be seen that by 2025 there are three women affiliated with the ITD with a level I distinction and two with candidate level distinctions.

The Level I researcher is married, aged 44, and the two Level Candidate researchers are aged 54 and 57. In their narratives, the interviewees point out that academic work, tutoring, management, and outreach represent a challenge due to the lack of infrastructure, such as access to scientific journal databases, or restricted funding from the institution for research. The type of contract exacerbates the situation, as they have to be evaluated every year to continue working at the institution.

The scientific work carried out is characterised by stress, burnout and emotional exhaustion that they have had to face at some point in their performance in the face of the various requirements of the different activities when hired in the full-time category.

With regard to the reconciliation of private and scientific life, they point out that researchers who have been responsible for children, either during postgraduate training or during their SNII appointment, have an increased social reproduction workload that reduces their scientific productivity.

The exercise of non-hegemonic masculinities, such as shared responsibility for childcare or domestic work, is a necessary requirement for reducing the hours of social reproduction work. In the case of the Level I researcher, being the leader of the only academic body in consolidation at the ITSSMT has meant that she has had to implement work efficiency strategies at the technological institute, as her children demand her time at home. This has also caused stress with her partner, who is not jointly responsible for domestic work.

ISSN: 2523-2495
RENIECYT: 1702902

It is concluded that the researchers affiliated with the SNII at the ITSSMT have implemented strategies that lead to emotional exhaustion and health problems due to the workload required by the institution. However, recognition by the evaluation system gives them personal satisfaction on the one hand and, on the other, financial incentives for the scientific work they have carried out.

The age at which the two candidate researchers obtained their appointments shows that the adaptation of public policies with a gender perspective allowed them access to the system, as they had the required productivity and experience in teaching and science.

In the case of the Level I researcher, collaborative work by the ITSSMT consolidation body allows her to establish networking strategies with the members of the body, which contribute to joint productivity.

Although belonging to an ITD represents a challenge, the three researchers demonstrate the hard work carried out at the ITSSMT. it is worth recognising that the SNII researchers at the technological institute are women and that the social reproduction work carried out in their domestic spheres requires contributions with co-responsibility on the part of their partners and that the time devoted to childcare, domestic work and biological reproduction is a factor present in the trajectories of female scientists.

Conflict of interest

The authors declare that they have no conflict of interest. They have no known competing financial interests or personal relationships that could have appeared to influence the article reported in this article.

Contribution of the authors

The contributions of the researchers were as follows:

Soto-Rivas, Soledad: Conducts the research and writes the article. Applies a qualitative methodology with a gender perspective in order to vindicate the reproductive work carried out by the subjects of the study.

Hernández-Hernández, María Elena: Contributed to the systematisation of the background information for the state of the art, verifying the references. Contributed to the writing of the article.

Irigoyen-Arroyo, Luis Ernesto: Conducted interviews with the TECNM researchers, contributing to the writing of the interviews.

Availability of data and materials

Data and materials are available to readers. Personal interviews were conducted and information was collected.

Funding

This project did not receive funding.

Acknowledgements

We would like to thank ITSSMT, TecNM, SECIHTI, and CIISDER for providing the scientific human capital.

Abbreviations

CIISDER	Centre for Interdisciplinary Research on Regional Development
ESDEPED	Incentives for Teaching Staff Performance
ITD	Decentralised Technological Institute
ITF	Federal Technological Institute
ITSSMT	Higher Technological Institute of San Martín Texmelucan
PRODEP	Programme for Professional Development of Teachers
TecNM	National Technological Institute of Mexico
SDE	Emotional Exhaustion Syndrome
SNII	National System of Researchers

ISSN: 2523-2495
RENIECYT: 1702902

References

Background

Caldera, Diana del Consuelo *et al*. (2019), "Participación de la Mujer en Ciencia y Tecnología. Análisis en Guanajuato, México", en Desarrollo Gerencial, núm, 1.

Secretaría de economía (2025). Municipio de San Martín Texmelucan.

Tecnológico Nacional de México (2020). TECNOLÓGICO NACIONAL DE MÉXICO (TecNM) - Ciclo escolar 2020-2021 LA INSTITUCIÓN DE EDUCACIÓN SUPERIOR MÁS GRANDE DEL PAÍS Y DE AMÉRICA LATINA

TECNM (2025). Miembros SNII. https://www.tecnm.mx/?vista=MiembrosSNI
Tecnológico Nacional de México (2025). Estadística educativa TECM 2024-2025.

Basics

Aboites, H. (2010). "La encrucijada de la universidad latinoamericana". En Por una reforma radical de las universidades latinoamericanas, compilador Leher Roberto. Argentina: CLACSO.

Beiras, A., Cantera Espinosa, L. M., & Casasanta Garcia, A. L. (2017) La construcción de una metodología feminista cualitativa de enfoque narrativo-crítico. Psicoperspectivas. Individuo y Sociedad, 16(2), 54-65. DOI: 10.5027/psicoperspectivas-vol16-issue2-fulltext-1012

Carrasco, A. (2020). Las políticas neoliberales de educación superior como respuesta a un nuevo modelo de Estado. Las prácticas promercado en la universidad pública. revista de la educación superior 196 vol. 49 (2020) 1-19.

Support

Castañeda Rentería, Liliana Ibeth, & Contreras Tinoco, Karla Alejandra. (2021). "Espero que el SNI haya valido la pena". Tensiones, negociaciones y rupturas entre mujeres científicas y sus parejas. Revista de El Colegio de San Luis, 11(22), 00007.

Cortés Campos -, R. L., & Castillo Rocha, C. (2024). Limitaciones y dificultades de académicas para ingresar o mantenerse en el Sistema Nacional de Investigadores. Antrópica revista de ciencias sociales y humanidades, 10(19), 75-100.

García, P. y Chavoya, M. L. (2014). "Los sistemas de evaluación académica: las profesoras-investigadoras de la Universidad de Guadalajara" en Blázquez (Coord.) Evaluación académica: sesgos de género. México: UNAM, CIIECH.

Gutiérrez Aceves, P. E., & Echeverría Echeverría, R. (2023). Mujeres en la academia: experiencias sobre el SNI y el capitalismo académico. Convergencia. Revista de Ciencias Sociales, 30. https://convergencia.uaemex.mx/article/view/21072/16779

Magaña Medina, D. E., & Sánchez Escobedo, P. A. (2008). Síndrome de Desgaste Emocional en Investigadores Mexicanos. Revista Interamericana de Psicología/Interamerican Journal of Psychology, 42(2), 353-362.

Meza-Mejia, M. del C., Ortega-Barba, C. F., & Villarreal-García, M. A. (2024). La mujer en la gobernanza de instituciones públicas de educación superior en México. Estudio comparativo. Revista Española de Educación Comparada, (45), 106–129.

Palomar Verea, C., (2009). Maternidad y mundo académico. Alteridades, 19(38), 55-73.

Differences

Aguado-López, Eduardo, & Becerril-García, Arianna. (2021). Performatividad en la ciencia mexicana: el dispositivo de evaluación del SNI. Revista mexicana de ciencias políticas y sociales, 66(243), 19-53.

Loaiza Castrillón, P. M. (2025) Análisis sociológico del proceso de construcción colectiva de la política pública mujeres y equidad de género en Bogotá DC entre los años 2003 y 2014 sustentado en la epistemología feminista.

Nava Rodríguez, M. T., & Ramos Palomo, M. D. (2025). Historia, espacio público y mujer (siglos XVI-XX).

ISSN: 2523-2495
RENIECYT: 1702902

Discussions

Acosta, Silva, A. (2014) "Gobierno universitario y comportamiento institucional: La experiencia mexicana 1990-2012" en Casanova Cardiel Hugo y Rodríguez Gómez Roberto (Coord.) Gobierno y gobernanza de la universidad: El debate emergente. Madrid: Bordón Revista pedagógica Ene- Marzo Vol. 66 No. 1.

Acosta Silva, A., (2022). Gobernanza, poder y autonomía universitaria en la era de la innovación. Perfiles Educativos, XLIV(178), 150-164.

Aquino, Zuñiga, S.P. y Álvarez, Rodríguez, J. (2024). Condiciones laborales de académicas del Sistema Nacional de Investigadoras e Investigadores en una universidad pública del sureste mexicano. Revista Andina de Educación, vol. 8, núm. 1, 000819, 2024. Universidad Andina Simón Bolívar DOI: https://doi.org/10.32719/26312816.4813.

Carro, A. y Lima, J.A. (2024) Del modelo neoliberal a la Nueva Escuela Mexicana. Referentes teóricos, técnicos e ideológicos Revista mexicana de investigación educativa, vol. 29, no. 103, pp. 987-1000, 2024. Consejo Mexicano de Investigación Educativa A.C.

Casanova, Cardiel Hugo y Rodríguez Gómez Roberto (Coord.). 2014. Gobierno y gobernanza de la universidad: El debate emergente. Madrid: Bordón Revista pedagógica Ene- Marzo Vol. 66 No. 1.

Estévez, Nenninger Etty, Martínez Stack Jorge. 2012. "La actividad docente en la educación terciaria mexicana: La perspectiva de sus académicos" en Fernández Lamarra Norberto y Marquina Mónica (Comp.), El futuro de la profesión académica el reto de los países emergentes

Galaz Fontes Jesús, et al. 2012. "Los divergentes mundos de la docencia y la investigación entre los académicos mexicanos: tendencias e implicaciones" en Galaz Fontes Jesús, Anton Gil et al (Coords.). La reconfiguración de la profesión académica en México. Culiacán Sinaloa: Universidad Autónoma de Sinaloa y Universidad Autónoma de Baja California.

Ordorika Sacristán, I., (2010). La autonomía universitaria. Una perspectiva política. Perfiles Educativos, XXXII(), 79-94.

Ramón, Pedro et al. (2020), "Afrontamiento, vida personal y familiar de profesores que pertenecen al Sistema Nacional de Investigadores (SNI) de una universidad del sureste de México", en Propósitos y Representaciones.

Ramos, José y Gómez, Alicia (2020), ¿Por qué los retos de la conciliación en tiempos de COVID-19 son todavía mayores para las mujeres?, España: Instituto Valenciano de Investigaciones Económicas

TOLEDO GONZÁLEZ, M. P., & AGUILAR PÉREZ, M. (2016). Entre el afecto y las disputas: la casa como espacio laboral feminizado. Espacialidades. Revista de temas contemporáneos sobre lugares, política y cultura, 6(1), 193-219.

Villalvazo, Agustín (2016). "Las reformas educativas en México", Ethos Educativo, núm. 49, julio-diciembre, tercera época.

ISSN: 2523-2495
RENIECYT: 1702902

Soto-Rivas, Soledad, Hernández-Hernández, María Elena and Irigoyen-Arroyo, Luis Ernesto. [2025]. The trajectory of SNII women at the San Martín Texmelucan Higher Technological Institute. The dispute over social reproduction work in the public and private spheres. 9 [20] 1-15: e2920115
https://doi.org/10.35429/JUM.2025.9.20.2.1.15