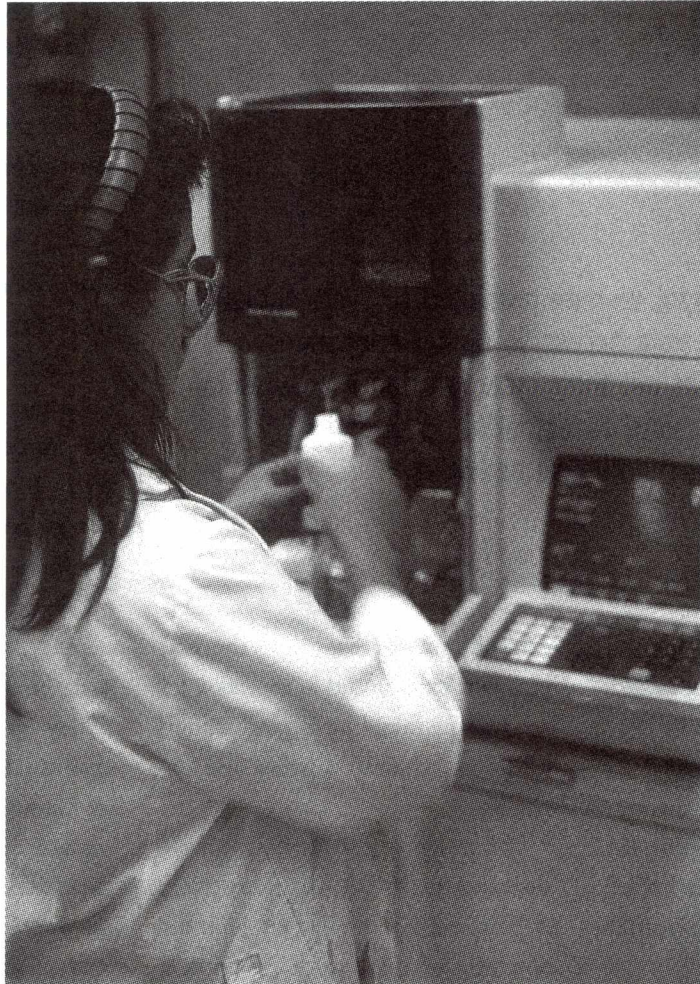


# Sociocultural Aspects of Mexican Women in Science

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Photos by Juan Antonio López/doi

Mexico's urban and rural areas, like those in most Latin American countries, are both multiethnic and multicultural. The cultural variations translate into values, norms, symbols and social representations

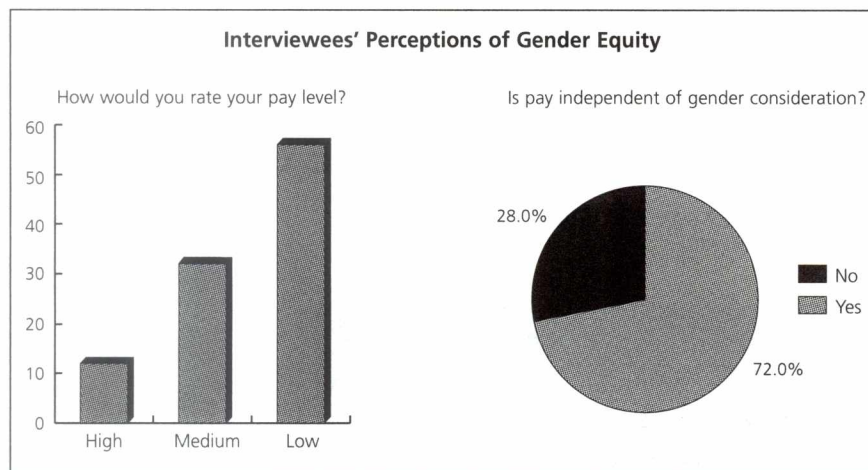
that in turn are transposed into behavior patterns distinct from one region to another with ethnic, linguistic and social variations. They regulate the mesh of social relations—interaction between men and women—that make up the different lifestyles and systems of activities, as Piaget says, carried out by men and women in today's society in Mexico.

Women's traditional activities in the private sphere are reproduction, caring for and educating children and managing the family economy. This explains their late access to all levels of formal education well into the twentieth century.

The change in the feminine work force comes between 1950 and 1970, a period characterized by a drop in women's

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participation in agricultural work and their increasing entry into the manufacturing and service sectors. Between 1960 and 1970, women managed to systematically and continually gain access to higher education, and from that moment on, their incorporation in academia has led to a growing participation in scientific and technological activities.

Disinterest in women's education is nothing new; throughout Mexican history women were marginalized. In the pre-Hispanic period, the educational system of indigenous peoples—the Aztecs and Mayas among others— included formal education for boys in public establishments created expressly for that end, while girls were taught inside the family by their mothers. This situation did not improve substantially during the 300 years

of Spanish rule. In that period, the most important step forward in education for girls was the founding of girls' schools in Texcoco, Otumba, Cholula and Coyoacán.

The period of the formation of the Mexican state (1810-1920, from the War of Independence to the revolutionary movement of 1910) sheds certain light on the lives of several outstanding women, who were in contact with the liberal heroes and leaders who supported a struggle for women's independence.

This process of formation of the nation-state was affected by clashes between conservatives and liberals, each of whom defended their own national project. This led to political instability but did not affect the social fabric based on family ties.

The continuity and specificity of several historic events that changed the values and roles assigned to men and women in Mexican society today have gone unstudied.

In Latin America, like in Mexico, historical, sociological and anthropological studies about women, their lives, their interests and their activities, have not been considered a priority. This is reflected in the fact that only recently has there been interest in analyzing the gradual incorporation and participation of women in science and technology. Very few studies analyze women's presence in the different fields of knowledge or in the fastest growing disciplines over the last few years.

In our country, women have undoubtedly played a role in all the professions in recent decades; however, their participation has been lower than in industrialized countries.

Women in the sciences in most cases not only work for a wage and contribute to the family income, but also take responsibility for housework and bringing up children. In this way, a woman who works in institutions of higher learning as a researcher and/or teacher has a double or triple workday, just like other women in the work force.

I will present here a summary of some of the results of the research project "Women's Participation and Creativity in National Scientific Research in the Field of Physics," promoted by the Iberoamerican Institute for Studies on Science and Technology, carried out with the support of the National Council for Science and Technology (CONACYT) in 1992.

The tables developed on the basis of the data obtained in the field research attempt to answer the study's general

questions: What is the level of women's participation in scientific and technology-linked activities in Mexico? and What is their contribution to scientific and technological knowledge?

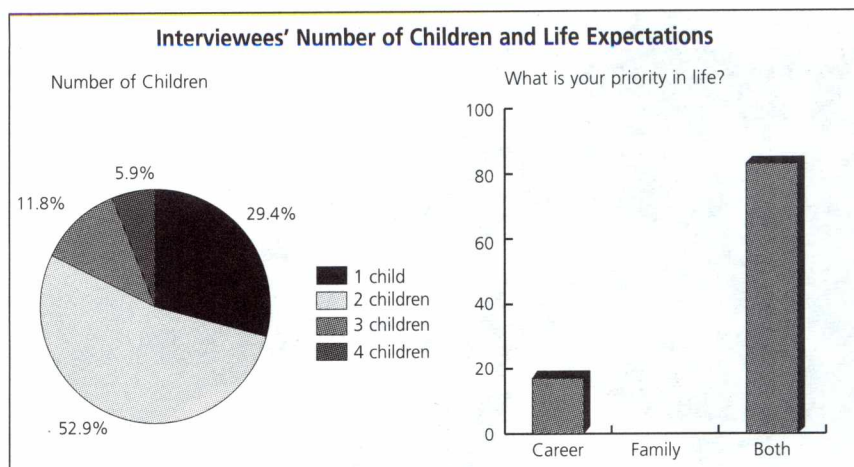
The answer to these questions allows us to get closer to them, to know who they are, where they are, what academic profile they have and the specific problems they confront in their fields of endeavor because they are women.

These results include some of the data obtained from broader research into women's participation in the following fields: medicine, physics, agronomy and social anthropology. Here, we exclusively show the outcome of interviews with selected Mexican physicists. The questions involved their family and social surroundings, including information about their parents' or spouse's activities and the number and age of their children.

In this sense, the study shows that the majority of the researchers in the sample come from homes in which their fathers had been to the university and their mothers were housewives. Their husbands have a university education and their activities are mutually compatible since more than 50 percent of them are also researchers.

With regard to their social surroundings, the questionnaire delved into who had encouraged them to go into research, the age at which they began their first project, whether they ran into obstacles or were encouraged in their work and in what way.

The researchers interviewed in the sample thought their careers were not an obstacle to having a family. All of them have children. They have had more incentives (48%) than obstacles (28%) to devel-



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op in their scientific career. The vast majority (68%) also said that their teachers were the ones who encouraged them to go into research.

It is interesting to note that the researchers interviewed did not consider their salary levels gender-linked. More than 60 percent said that even though their salaries are low, this was not gender-determined.

The sample, which includes 25 scientists who in 1992 belonged to the National System of Researchers (SNI), while not representative, is indicative of the activities carried out in their field.

The following institutions were studied: at the National Autonomous University of Mexico, the Institutes of Physics, Geophy-

sics, Astronomy, Atmospheric Sciences, the Institute for Research in Matters and the School of Sciences; at the Autonomous Metropolitan University, the Azcapotzalco and Iztapalapa campuses; and at the National Polytechnic Institute, the Center for Research and Advanced Studies (CINVESTAV) and the CINVESTAV School of Higher Learning in Physics and Mathematics.

The indicators used to select the women canvased were:

- 1) Their belonging or having belonged to the National System of Researchers (SNI).
- 2) Their having worked during 1990, 1991 and 1992 on research projects related to and/or in teaching physics. **NM**

## NOTES

- a. Coordinator in charge of the project: Virginia López Villegas. Researchers in charge of the different fields: medicine, Ana María Carrillo; physics, Laura Oseo; social anthropology, Patricia Ortega; and agrarian sciences, Elvira Mazcorro and María Luisa Jiménez.
- b. The project studied the participation and creativity of women scientists according to the following criteria: employment at specialized research and/or teaching centers; mean productivity and creativity in terms of publications, books, specialized journals, patents, trademarks, research reports and even popular informational publications about the use of innovations; membership in scientific societies; and participation in congresses, seminars and workshops.

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