

PUBLIC POLICIES, GENDER, AND STEM CAREERS

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ABSTRACT. In this work, the role of the State in public policies that subsidize the guarantee of social rights is discussed, as well as gender disparities are addressed as a historical product of the discrimination to which women have been subjected and which result in their absence in STEM careers. (Science, Technology, Engineering and Mathematics). The mapping of existing public policies and the requirement that advances be established is a necessity to allow equal access for women to opportunities and spaces of power.

KEYWORDS: public policies / gender / STEM

POLÍTICA PÚBLICA, GÉNERO Y CARRERAS STEM

RESUMEN: Este trabajo discute el papel del Estado en relación a las políticas públicas que subsidian la garantía de los derechos sociales, así como el abordaje de las disparidades de género como producto histórico de la discriminación a la que han sido sometidas las mujeres y que resulta en su ausencia de las carreras STEM (Ciencia, Tecnología, Ingeniería y Matemáticas). Mapear las políticas públicas existentes y exigir que se avance es una necesidad para que las mujeres puedan acceder en igualdad de oportunidades a los espacios de poder.

PALABRAS CLAVE: políticas públicas / género / STEM

POLÍTICA PÚBLICA, GÊNERO E CARREIRAS STEM

RESUMO. Este trabalho discute o papel do Estado em relação às políticas públicas que subsidiam a garantia de direitos sociais, bem como a abordagem das disparidades de gênero como um produto histórico da discriminação enfrentada pelas mulheres, resultando em sua ausência nas carreiras em STEM (Ciência, Tecnologia, Engenharia e Matemática). Mapear as políticas públicas existentes e a exigência de avanços é uma necessidade para que as mulheres possam acessar igualdade de oportunidades nos espaços de poder.

PALAVRAS-CHAVE: políticas públicas / gênero / STEM

1. INTRODUCTION

When significant social issues arise during a particular period, it is common to see a demand for the establishment of public policies that protect specific rights of the population through legislation. Similarly, it is not uncommon to find situations where it is claimed that a particular issue is legislated but remains as “dead letter.” This means that the public policy has been established but is not properly or satisfactorily applied in practice. What stands out in these circumstances is the recognition of the need, first and foremost, to adopt a public policy and then have the groundwork to request its practical implementation, in a way that benefits the affected group.

Historically, in the struggle for equality, the demand for gender-focused public policies enabled women to: i) pursue higher education, as the Decree Law No. 7,247/1879 allowed women to enter universities, but enrollment was the responsibility of their parents or husbands; ii) vote, which was significant for their subsequent participation in representative politics, a domain traditionally dominated by men (women’s suffrage was recognized in 1932, incorporated into the 1934 Constitution as optional, and in 1965, it became mandatory and equivalent to men’s); and iii) be protected from domestic and family violence, with prevention measures established by Law No. 11,340, dated August 7, 2006, commonly known as the Maria da Penha Law.

These examples inevitably lead us to think that there is still a long way to go. A major obstacle is the patriarchal representations that remain and support revolting situations, such as the differentiated pay for women, as confirmed by data from the Brazilian Institute of Geography and Statistics: “In 2019, women earned 77.7% or just over $\frac{3}{4}$ of men’s income”, such inequality in labor income was more expressive among the occupational groups with the highest incomes, “such as Directors and managers and Science and intellectual professionals, groups in which women earned, respectively, 61.9% and 63.6% of men’s income” (Instituto Brasileiro de Geografia e Estatística, 2023).

Having laid out these initial reflections, the subsequent sections of this work, which follows a qualitative approach involving exploratory research through literature review, will address: the characterization of public policies and the role of the state, as well as the disparities found in careers related to Science, Technology, Engineering, and Mathematics (abbreviated as STEM).

2. PUBLIC POLICIES AND THE ROLE OF THE STATE

It is acknowledged that the state plays a role in public management. In this sense, it is worth examining “what society would be like without a state, an analysis necessary to distinguish the contributions of the state and the consequences of its existence” (Avelino, 2020). Regarding public policies, the state is indispensable; however, it is naive to believe that it always prioritizes social interests.

With the alignment to neoliberal policies implemented in Brazil in the 1990s as a reference point, Peroni (2003) argues that the reform of the Brazilian state during that period transformed the citizen into a customer-citizen, excluding some and not encompassing all. Social policies were no longer solely the responsibility of the state but became part of non-exclusive services, which aligns with the idea of promoting privatization (transferring management to the private sector), decentralization (transferring some of the services previously provided by the state to the private sector), and publicization (transforming a state organization into a private-law organization).

Also, considering the period after the 1990s, in a report signed by civil society organizations, including the Latin American Council of Women's Rights - Brazil, titled "Antigender Offensives in Brazil: State Policies, Legislation, Social Mobilization," and published in 2022, it is stated that the growing influence of religious neoconservatism, especially evangelical, in the legislative sphere has led to reactions and confrontations when proposed or approved legal changes dealt with gender and sexuality issues. In the same document, the victory of Jair Bolsonaro in 2018 is discussed as a central point for the support of what the authors call antigender offensives, which have been present since his inauguration speech.

The main implication of the view of the State's role is precisely the societal and political project implicit in it. The minds that think about priority actions and the hands that sign legal determinations are inevitably reflected in the atmosphere of institutional politics and the formulation of public policies. Therefore, it becomes even more urgent to ensure women's participation in positions of power and decision-making, as well as to have more women in certain careers, in order to combat the two types of female segregation mentioned by Tonini and Araújo (2019), namely vertical (underrepresentation of women in prestigious and powerful positions) and horizontal (few women in specific areas of knowledge).

3. GENDER AND STEM CAREERS

The introductory notes highlight that history leaves traces in the present. Indeed, what is currently observed is the need for public policies that combat the disparity in women's participation in STEM careers compared to men. These policies should not be mere government policies, subject to a specific administration.

In Brazil, women make up the majority of enrollments in higher education in courses related to Humanities and Applied Social Sciences and are in smaller numbers in STEM-related fields (Tonini and Araújo, 2019).

This is linked to certain expectations of careers for women, particularly those related to what, in a prejudiced and mistaken bias, might require maternal instinct or a certain sensitivity associated with femininity. This reinforces patriarchal models and positions men as the leading figures in the realms of knowledge (Figueiredo and Maciel, 2016).

In order to combine the discussion of gender, public policies, and higher education, an interinstitutional and international research project was developed: Latin American Open Data for gender equality policies focusing on leadership in STEM [IDRC 2022]. Its central objective is to generate open and connected data to enable the assessment of policies and interventions aimed at reducing the gender gap in STEM. This gender gap has been identified since the 1960s and 70s, according to Figueiredo and Maciel (2016), by the feminist movement, through the recognition of the erasure and minimization of women in the history of science and technology.

Specifically, regarding the search for public policies directed towards women in Brazil, it is important to highlight the difficulty in finding them, which also involves the definition of policy undertaken. According to Avelino (2020), policy 'decides which individual ends should be discussed and decided collectively,' meaning, it is 'a set of coercive actions to decide on collectivized ends' (emphasis by the author).

With this broader definition and considering, in agreement with Avelino (2020), politics as 'a subset of society,' the challenge in researching the topic, when conducting an integrative literature review, for example, becomes identifying whether a particular account is an action, a project, or effectively a policy. A necessary distinction for such classification pertains to the discussion in the previous section about the role of the State. Although Montaña (2002) acknowledges that the lines separating the public and private sectors are increasingly blurred, due to public-private partnerships and agreements between sectors. These often involve the transfer of public funds to the private sector.

This entanglement stems from a widespread logic of outsourcing and privatization, which, according to Montaña (2002), characterizes a 'loss of citizenship rights for services and social policies.' The concept of the Third Way aims to overcome this public/private dichotomy based on the idea of a 'third sector,' beyond the State and the market, which would perform public functions through private initiatives. A major concern to be noted is the transfer of state responsibility in the face of the reality of wage inequalities, which are obviously accompanied by gender discrimination when two people occupy exactly the same position, with the same professional qualifications, and are remunerated differently, with women receiving less.

Montaña (2002) understands that the proponents of social regulation 'organized in an abstract civil society ('third sector'), whether admitted or not, are generally close to the so-called third way (supposedly neither Keynesian nor neoliberal)'. The author's questioning of the separation of civil society from the State and the market is agreed upon, as if it were possible for civil society to be apart from these spheres. Furthermore, it is noted that the author advocates for state action as a means of ensuring the achievement of collectivized ends.

The term 'third sector' is reductionist, in that it establishes the political as belonging to the state, the economic to the market, and the social to civil society, which indicates

a 'clear connection with class interests, in the transformations necessary for the upper bourgeoisie'. Thus, Montaño (2002, p.53) states that it is a term constructed 'from a division of the social into spheres: the State ('first sector'), the market ('second sector'), and 'civil society' ('third sector')'.

The ideological promotion of social regulation by civil society, in the 'perspective of the 'third sector', 'non-classist', 'non-political', but harmonious, negotiating between heterogeneous sectors, in a sphere outside the cruel market and outside the Leviathan State' (Montaño, 2002, p. 142-143) should be considered in depth, weighing what lies behind an apparently harmless defense of greater civil society participation.

Therefore, understanding the treatment of the 'social question' (Montaño 2002, p.135) as an eminently public responsibility, it is believed that changing the disparate gender situation in STEM fields should be on the public policy agenda and that these policies should be publicized and easily accessible. In this regard, the aforementioned initiative of the research with Innovation Latin American Open Data for gender equality policies focusing on leadership in STEM (IDRC, 2022). stands out. This does not mean that actions, programs, and projects that originate from private initiative are not relevant.

The study by Souza (2019), for example, addresses the disparity between women and men in the corporate world and investigates the transformative moment of two Information Technology companies regarding the adoption of inclusive policies and a culture of diversity, particularly in terms of gender and sexual orientation issues. The results show that these companies are betting on minorities, especially in recruitment, with selection campaigns and promotions focused on specific groups, aiming to 'increase the representativeness of these identity groups in their workforce, as well as investing in educating their employees' (Souza, 2019).

For many companies, Souza (2019, p.38), states, the stance on diversity and inclusion has been 'a matter of strategic positioning. There is a growing trend among corporations to embrace minority causes [...] in a bid to become more competitive and innovative.' Initiatives like the one the author describes are desirable and should be valued.

Moving away from the profit-driven concept inherent in the corporate world, the relevance of this strategic positioning is emphasized. In the case of the public sector, this is achieved through public policies, including punitive ones that encourage students from Basic Education to pursue careers in STEM fields and break the glass ceiling, a metaphor referring to the invisibility of barriers that hinder and prevent women's advancement in their careers (Leite, 1994).

An example in this regard is the Digital Girls Program (Maciel et al., 2018), whose actions and those of partner projects focus on women and girls, due to their decreasing representation in Computational area careers (de Lima et al., 2022).

4. FINAL CONSIDERATIONS

The initiatives to map public policies aimed at combating gender inequality and encouraging the occupation of spaces predominantly held by male figures, due to a history of discrimination, are essential to raise awareness about the importance of women in STEM, in power spaces, decision-making, and the development of public policies.

It's not just about assigning the responsibility to the State to address the continued under-representation of women in prestigious and leadership positions, but about understanding its role in the absence of public policy formulation to combat this reality.

The shift of responsibility with the supposed valorization of the third sector draws attention to its corollary: overlooking the fact that, even today, individual characteristics of workers (gender, in this case) influence salary determination, the type of career pursued, or career progression, even with similar levels of education and experience between men and women, without any sanction.

The discussions throughout this text highlight that the current situation calls for a deepening of public policies aimed at combating discrimination, and for these policies to be increasingly widespread and numerous. This is due to the reality that still shows gender discrepancies and discriminations impacting women's access to STEM careers and their rise to leadership positions.

Furthermore, the importance of building an open data platform, as proposed by the cited Research Project, is emphasized. This project aims, among other objectives, to organize accessible information about Latin America for gender equality policies focusing on leadership in STEM. In this context, more investigations into this theme are crucial as sources of evidence for gaps, issues obscured by sexist discourses, or powerful policies that propel gender issues and increasingly enable equality.

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