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Gender Disparities in the Russian Academic Profession

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1. Abstract

Despite the burgeoning field of gender studies, inequalities persist within academia both globally and specifically in Russia. While women outnumber men as undergraduate and graduate students, men dominate higher academic positions, encompassing managerial and scholarly roles. This research analyzes patterns of similarities and differences between men and women academics in Russia. It also identifies the main factors affecting gender dynamics in the academic environment and examines the perception of gender issues in academia within the Russian context.

Employing a mixed-method approach, the research integrates a survey, bibliometric analysis, and interviews as principal empirical methodologies. The initial focus centers on the examination of the representation of men and women Russian academics in terms of research output. The purpose of the study is to analyze the perception of gender-related issues among Russian academics. To fulfill this objective, a survey was conducted, complemented by interviews with representatives of academia, aiming to glean insights into their perspectives on the gender landscape within Russian academia. The conceptual framework guiding this inquiry comprises contemporary feminist theories alongside established methodologies in social research, encompassing feminist institutionalism and Derek Layder's analytical framework for multilevel analysis.

The study's findings underscore several salient points. First, theoretical exploration posits that socially constructed gender norms play a pivotal role in delineating gender challenges within academic environments. Secondly, bibliometric analysis reveals a persistent gender gap in Russian academia, with women significantly underrepresented in scholarly publications, comprising only 37% of authors from Russia. Thirdly, gender inequality is discerned as a broader societal issue rather than being confined solely to the academic sphere. Notably, responses from surveyed members of the Russian academic community depict varying degrees of acknowledgment of gender inequality, ranging from 12% to 27% among both male and female academics. Finally, the study elucidates how gendered institutional features emanate from entrenched notions of femininity and masculinity, thereby exerting discernible impacts on professional trajectories within academia, potentially serving as either constraining or facilitating factors.

2. Introduction

The intersection of gender and academia has garnered unprecedented attention within scholarly discourse (Grasswick, 2011). Gender studies, as an interdisciplinary field, has emerged from diverse academic disciplines and spans various social science subjects, including research of academic profession (Reay, David & Ball, 2005; Eddy, Ward & Khwaja, 2017; Aiston & Yang, 2017). Despite the growing interest in gender studies and the imperative for gender equality policies, there remains a paucity of research on gender issues within educational contexts, particularly in Russia. This statement underscores the deficiency in scholarly inquiries accurately depicting the gender landscape within academic environment.

Notwithstanding significant advancements in promoting equality agendas, gender-related challenges persist within the academic profession (Larivière et al., 2013; Resnyansky & Amiantova, 2019). Presently, a prevalent trend across many nations indicates a surplus of women undergraduate and graduate students within universities (O'Connor, Carvalho, Vabø & Cardoso, 2015; Bilton, 2018; Hare, 2020). However, the academic arena presents a contrasting scenario, with men constituting 72% of the global academic workforce (UNESCO, 2016). Although women continue to outnumber men in attaining bachelor's, master's, and doctoral degrees, their representation diminishes notably at advanced career stages within academia.

Subsequently, a pervasive perception persists that women lag behind men in competing for esteemed academic positions (Ginther & Kahn, 2009; Dubois-Shaik & Fusulier, 2017; Shalaby, Allam & Buttorff, 2021). Indeed, women scholars occupy fewer senior academic positions than men, resulting in gender disparities across various facets of academic performance, including publication output and citation rates (Bentley, 2012; Astin & Davis, 2019; Dolan & Lawless, 2020). Consequently, there is an exigent need for further examination of the obstacles impeding women's career advancement.

This trend is similar to the Russian academic landscape. While women predominate at the early stages of their academic careers, their representation dwindles significantly at subsequent ranks (HSE, 2020). Women scholars constitute a majority among university students, with the number of male graduates experiencing a decline (Vinokurova, 2009). Russia boasts the highest proportion of female faculty in tertiary education globally, comprising approximately 60% of the overall academic staff (Rudakov & Prakhov, 2021).

However, the numerical predominance of women scholars does not preclude the existence of gender disparities. Indeed, the professional distribution of women within the education system forms a pyramid-shaped structure, with the majority occupying the lowest

levels of position and a sharp decline in representation at each subsequent level of seniority. For instance, women account for only 18.8% of rectors and 11% of rectors at the top-ranked universities in Russia (Kryshchanovskaya, Lavrov & YUshkina, 2023).

The disparity between men and women within the realm of Russian academia exerts an apparent influence on the qualitative dimensions of career trajectories, particularly the participation and roles of women within academic circles. Scholarly investigations underscore women in Russian academia exhibited underrepresentation in terms of their research output across various disciplines during the 2010s (Lewison & Markusova, 2011; Paul-Hus et al., 2014). Recent empirical inquiries confirm this prevailing trend, evidencing a lesser presence of women within Russian scientific spheres in terms of their research contributions (Pilkina & Lovakov, 2022).

The significance of gender-focused research within diverse institutional contexts remains a subject of academic discussion. Scholars have meticulously documented the historical marginalization and exclusion of women from academia (Crasnow, 2009). It has been observed that the scientific community has exhibited reluctance in examining women's experiences and gender-related issues, attributable to a prevailing lack of interest among male researchers in pursuing such inquiries. Gender disparity is explicated through the dual lenses of both knowledge objects and subjects. Nevertheless, the relationship between gender balance and the perpetuation of scientific knowledge as well as the negative outcomes of persistent gender disparities stands as an established verity.

One of the most immediate consequences of gender disparities in academia is the narrowing of the academic perspective. It has been demonstrated that diverse teams are more likely to produce innovative and comprehensive research (Hong & Page, 2004). Concurrently, the underrepresentation of women in academic roles, particularly in senior positions, precludes the full contribution of a significant proportion of women's unique perspectives and experiences to the scholarly discourse from its inception. However, the roots of women scholars' underrepresentation lie in the relatively low academic productivity of women, which in turn produces a vicious circle in the institutional environment of the academy.

In addition to the social implications of the problem, which relate to issues of justice and gender inequality within academia, there are also significant economic consequences. These include losses both directly and indirectly. This multifaceted issue encompasses a range of disparities, including gender-based differences in hiring, promotion, salary, research funding, and representation in leadership positions (see e.g., Blau & Kahn, 2017; Huang et al., 2020; Rudakov & Prakhov, 2021). Collectively, these disparities undermine the economic potential

of academic institutions and the broader economy. Moreover, the gender disparities in research funding and publication opportunities serve to exacerbate the economic losses. Empirical studies have demonstrated that women scholars receive less research funding than their male counterparts, which impedes their capacity to conduct groundbreaking research (Moss-Racusin et al., 2012).

Furthermore, academic institutions with significant gender disparities may also experience a decline in overall effectiveness. Leadership positions in academic institutions, such as department chairs, deans, and university presidents, are predominantly occupied by men, which influences institutional priorities and resource allocation (Huang et al., 2020). The absence of gender equity may result in policies within academia failing to fully support all faculty members, which could lead to reduced job satisfaction and increased turnover rates among women academics. This, in turn, could have a detrimental impact on institutional effectiveness and economic efficiency (Settles et al., 2006; O'Meara et al., 2014).

The existence of gender disparities within academia has significant implications for the institutional development of academic institutions, the quality of research activities, and research production. Russia is no exception. Such disparities manifest in several ways, and this particular study is specifically designed to address them in the context of Russian academia. These disparities have the potential to impact the development and overall dynamics of the academic community. This discrepancy highlights the necessity for more comprehensive scholarly investigations to accurately portray the gender landscape within Russian academia.

Consequently, *the central aim of this dissertation* is to analyze patterns of similarities and differences between men and women scholars in Russia to identify the main specific gender gaps. Indeed, gender disparities within academia in Russia present a significant issue, affecting the development and overall dynamics of the academic community. This gap underscores the need for more comprehensive scholarly inquiries to accurately depict the gender landscape in Russian academia.

The examination of gender aspects in the Russian academic environment is influenced by several factors. Over recent decades, universities have transcended their conventional role as mere educational institutions, assuming additional roles encompassing social and scientific functions. The evolving role of universities now encompasses not only pedagogical endeavors but also scientific and societal dimensions.

This paradigmatic shift has engendered repercussions within the academic profession, which now amalgamates educational and scientific functions within the institutional milieu of the university. Thereby, the exploration of gender inequality within the Russian academic

landscape is aimed at examining the specifics of university actors in the context of gender disparity among members of the academic profession, encompassing both faculty members and researchers.

The *research significance* is substantiated by several provisions. In light of the preceding arguments, which have outlined the complex and myriad gender disparities within the academic community, it seems reasonable to contend that an integrated and holistic research strategy is necessary if the problem under investigation is to be adequately addressed. In contrast to the existing literature, which tends to focus on a specific aspect of women's underrepresentation in Russian academia, this research posits that gender-related issues can be most effectively explained through a unified research framework with the capacity to operate across multiple levels of analysis. Analyzing the gender situation empirically can help explain existing gender inequalities and identify potential ways to introduce a gender agenda in academia. Promoting gender equality in academia leads to high-quality research and academic competitiveness (Shannon et al., 2019).

As will be further elucidated in Chapter 5, the research map comprises differentiated levels of analysis and mixed methodologies. The map progresses from the concrete empirical phenomenon of gender disparities within Russian academia to the generative mechanisms of the manifestation and perception of gender issues by scholars themselves. Such an approach implies that the study is divided into a selected number of analytically distinct explanatory components, including macro-level (i.e., institutional settings) and micro-level (i.e., interaction and perception) perspectives.

The theoretical novelty lies in its examination of gender concerns within the institutional framework, considering a spectrum of social, systemic, and individual factors that underlie the genesis of gender disparity. This study applies feminist institutionalism to the Russian academic environment, making it one of the pioneering endeavors within the domain of sociology of education.

3. Framing the Research Problem

3.1. Degree of Elaboration of the Research Topic

Gender studies have emerged as a burgeoning area of research within academic disciplines (Söderlund & Madison, 2015). In recent years, their integration into the academic domain has notably transformed the discourse applied in social research (Crocco, 2008; Woodward & Woodward, 2015). Currently, there is a growing body of literature that scrutinizes the gendered nature of universities and academic institutions (see, e.g., Currie, Harris & Thiele, 2000; Bird, 2011; Benschop & Doorewaard, 2012; Lester, Sallee & Hart, 2017; and Mihăilă, 2018). The prevailing argument posits that academic institutions generally confer greater advantages to men compared to women.

Indeed, women have historically been under-recognized within the academic profession (Antony, 2012; Odic & Wojcik, 2020). In 1993, Rossiter coined the term ‘the Matilda effect,’ which suggests that men’s contributions are more central within a field, leading to their work being more frequently sought out and more highly evaluated. This phenomenon indicates a systematic misrecognition and widespread denial of women’s scientific contributions and breakthroughs within the academic profession. Over the past 40 years, women have made substantial inroads into academia (Bradley & Charles, 2003; Franco-Orozco & Franco-Orozco, 2018) and various specific areas within it (Blackburn, 2017; Atchison, 2018).

Despite significant improvements in gender agenda proliferation, gender inequality still remains in academic profession across the globe and also in Russia (Larivière et al., 2013; UNESCO, 2020). The evidence of underrepresentation and biases toward women in academic roles is pervasive (Knights & Richards, 2003; Pasquerella & Clauss-Ehlers, 2017). A bulk of studies has shown that women face different forms of biases to perpetuate the “leaky pipeline”, “glass ceiling” and “sticky floor” effects that continues for women in academic environment. It means that women are more likely than men to face discrimination and other barriers to career advancement in academia (Pell, 1996; Clark Blickenstaff, 2005; Tessens, White & Web, 2011; Rauhaus & Carr, 2022). Currently, various indicators highlight the challenges faced by women in academia, including pay inequities, disparities in grant applications and awards, publication patterns, and citation rates (Mauleón & Bordons, 2006; Ranga et al., 2012; Cruz Castro & Sanz Menéndez, 2015; Witteman et al., 2019; Astin & Davis, 2019; Dolan & Lawless, 2020; Rudakov & Prakhov, 2021).

Russia is no exception to these trends with a long history behind. The participation of women in Russia’s professional and academic life is deeply rooted in the country’s historical

commitment to gender equality, which began under the Bolshevik government of Vladimir Lenin. The revolutionary government that came to power in 1917 promoted equality for women, including in the scientific community. Significant changes in the status of female scientists in academia became possible only after the October Revolution, when the Soviet government actively included women in professional activities, thereby ensuring their involvement in the academic system (Grishina, 2008).

In its historical context, the Soviet Union espoused an official ideology of gender equality, which encouraged women's participation in all sectors, including academic area. By the 1970s, women constituted a significant proportion of students and academic staff in Soviet universities. Nevertheless, despite these apparent gains, women often encountered significant obstacles to career advancement within academia. Women academics were underrepresented in senior academic positions and leadership roles, with the majority occupying lower-ranking, less influential positions (Lapidus, 1978).

The dissolution of the Soviet Union in 1991 ushered in a period of significant transformation within the higher education system in Russia. The economic instability and political turmoil that accompanied the dissolution of the Soviet Union led to substantial cuts in funding for universities and research institutions, which further exacerbated existing gender inequalities. Women, who were already underrepresented in senior academic positions, were disproportionately affected by these changes, as they often held less secure, lower-paid positions that were more vulnerable to cuts (Ashwin, 2000).

A targeted study of the various gender aspects of institutional environments, including academia, commenced during the period of perestroika (Pushkareva, 2015). The further development of gender studies in the 2000s and beyond has continued to illuminate the persistent gender disparities that persist in the Russian academic profession. Nevertheless, the current state of scholarship on this topic is marked by a dearth of recent publications, with many studies dating back a decade or more (Uvarova & Myasina, 2006; Pushkareva, 2014). This further underscores the timeliness and significance of this dissertation.

Despite the promotion of gender equality, the formal equality in academia often remained unfulfilled. While this period expanded professional opportunities for women, significant limitations on their social rights persisted, reinforcing traditional gender roles. The process of integrating into an academic career and the likelihood of achieving permanent academic positions were influenced by gender. Women were widely represented in scientific institutes, but their status positions were generally low (Dolgova, 2020; Metel, 2021). From a historical perspective, it is evident that the quantitative dominance of women in academic

institutions is merely a reflection of labor division without any tangible outcomes in terms of qualitative presence. Consequently, women scholars in Russia have been underrepresented in terms of their relative contribution to scientific output across disciplines, which has constrained their career advancement opportunities (Lewison & Markusova, 2011; Paul-Hus et al., 2014).

Thereby, to analyze various dimensions of gender disparities in academia, the thesis scrutinizes the complex myriad of possible explanations slowing down women's advancement and keeping them from occupying the same organizational status as their men colleagues. The paper tries to explain how different gendered issues are institutionalized into the current academic sphere in Russia. The analysis of gender disparities should first start with their manifestation and perception. However, currently there is a dearth of research on such. Indeed, despite numerous scholarly discussions of gender and the necessity of gender mainstreaming, there has been traditionally little research on the gender disparities that are relevant for the Russian academic community and how they are perceived by scholars themselves. This implies that the first and initial dimension of a problem statement is the lack of research, covering up the real gender issues perception in Russian academia.

The second dimension of the problem statement is about gender disparities per se. For more than two decades, various studies have shown that men academics perform better and receive approximate recognition as their women colleagues, despite performing to a lower standard (Reuben, Sapienza & Zingales, 2014; Rørstad & Aksnes, 2015; Witteman et al., 2019; Astin & Davis, 2019). Such a tendency is expressed in the fact that women academics face most gender challenges, for example, they have lower publication rates, contribute more labor for less credit on publications, receive less citation and letters of recommendation and are more likely to experience sexual-based behavior and harassment (see, e.g., Madera, Hebl & Martin, 2009; Hesli & Lee, 2011; Larivière et al., 2013; Rørstad & Aksnes, 2015; Jagsi, et al., 2016; Dolan & Lawless, 2020). All in all, women academics are facing gender-related issues in many academic systems, which Russia is not an exception.

Gender segregation within the academic environment also comes from historical aspects of scientific development. Modern Russia inherited 'female' and 'male' branches from Soviet Russia and the Russian Empire (Khasbulatova, 2005). Indeed, to this day, gender inequality persists at all levels of academia: girls are concentrated in the humanities and social sciences, while boys are concentrated in technical specialities (Khasbulatova, 2016). As a consequence, further gender inequality manifests itself in lower expectations for professional development and career advancement in these fields (Maloshonok, Vilкова & Shcheglova, 2022).

There are multiple explanations for the status of women in academia. The most prevalent explanation is the formation of gender stereotypes regarding the professional activities of men and women. In this context, the academic environment is not an exception; rather, it is one example of inequality in the professional environment. From the earliest stages of professional formation, beginning in kindergarten, all relations within educational institutions reproduce culturally embedded ideas about “women as subordinate and not striving for achievements, and about men as dominant, independent, and achievers” (Yarskaya-Smirnova, 2001, p. 102).

However, the main differences that make the Russian case different from the global picture is due to the quantitative dominance of women among tertiary institutions staff. Women academics, despite their prevailing presence with approximately 60% of all academic positions, are significantly less represented at the high and highest ranks (HSE, 2021; Reznik, Makarova & Sazykina, 2017). Women mostly occupy lower positions such as research fellows, lecturers, and assistants, while senior academic positions, on the contrary, are generally held by men (Bagirova & Surina, 2017; Sterligov, 2017). This implies women academics might be even more marginalized in Russian academia than other academic systems. That is exactly what makes the Russian case unique and worth of separate research. Russian academia is demonstrated as an evident example of how formal representation by quantitative predominance does not lead to equal descriptive representation.

In recent years, there have been significant changes in the Russian academic community that may affect the gender situation in academia. Such changes include, for example, orientation towards international scientometric indicators, development of megagrant policy to increase the number of publications and co-authorship (see, e.g., Sobkin, Rzayeva, 2016; Guba, Slovgorodsky, 2022; Erkina, Malakhov & Yurevich, 2022). Some research has indicated that one of the possible outcomes of such a governmental interventionist approach to the Russian academic system will be the increased share of women in Russian academic space (Paul-Hus, et al., 2014). Currently, it is evident that gender disparities are still relevant for the Russian academic community. Overall, it is questionable to be expected that such differences between men and women academics may simply be diminished over time “as earlier observed trends may suggest” (van den Besselaar & Sandström, 2017).

This study, in addition to describing gender disparities within Russian academia and their perception, also emphasizes the significance of gender diversity in the Russian academic profession. To address gender inequality, it is necessary to integrate gender issues into the educational system (Sukhorukova, 2012). Therefore, the main idea of the research is first to

promote awareness of gender-related problems, as it is the most common first step in gender inequality diminishing.

3.2. Research Goals and Objectives

This dissertation presents a comprehensive assessment of gender inequality within the Russian academic sphere through the lens of institutional educational environment representatives. The objective of the study is to delineate the main factors fostering gender inequality and explain the prevalent gender-related challenges in the Russian academic environment. While the primary focus is on comprehending the gender landscape in Russian academia, the research also delves into models of research productivity and their reception among Russian scholars.

The main *research question* is how to understand and explain persistent gender challenges for women in the Russian academic landscape. The research question is operationalized by the following additional questions, which are the main *research objectives*. To do so, the research is presented in an integrated paper format, consisting of distinct studies designed to address multi-component research questions. Specifically, the research papers are embedded within empirical chapters, each addressing a specific research sub-question. To illustrate the complex and interconnected nature of gender issues in academia, all research questions and tasks are initially framed using Derek Layder's research map of differentiated levels of analysis.

- (1) Context of gender disparities: Which theoretical approach offers the most comprehensive and pertinent analysis of gender disparities within academic institutions?

As detailed in Chapter 5.2, the first step of this dissertation in exploring the paradigm of gender disparities in academia involves conducting a descriptive analysis of theoretical approaches to gender and gender inequality. The terms 'gender' and 'gender equality' are frequently used in academic and public discussions about social dynamics, including in academic settings. The terms 'gender' and 'gender equality' are frequently used in academic and public discussions about social dynamics, including in academic settings. However, educational researchers frequently encounter challenges in delineating precise definitions of these concepts. The examination of gender and gender equality within academia research is frequently hindered by classification complexities arising from the multiplicity of definitions and methodologies employed. Consequently, the primary task in investigating gender

inequality within academia entails scrutinizing the prevalent theoretical frameworks aimed at elucidating gender and gender (in-)equality.

The findings are presented in the article *Пилкина М., (2023). Проблема категоризации гендерных вопросов в исследованиях образования. Вестник Томского государственного университета. Философия. Социология. Политология, 75, 279–288. doi: 10.17223/1998863X/75/23*

(2) Setting of gender disparities: What are the differences and similarities in research productivity between men and women scholars in Russia?

The principal aim of research endeavors is the production of novel knowledge. In academic research evaluation, productivity serves as the predominant metric. Academic or research productivity is generally defined as “the output produced in a given period per unit of production factors used to produce it” (Abramo & D’Angelo, 2014, p. 1131). It also determines “how reputations are earned, grants acquired (and) promotions awarded” (Bentley & Blackburn, 1992, p. 698). Indeed, publication activity indicators are extensively employed for gauging scholarly recognition and prognosticating future performance (Nielsen, 2016), thus serving as a common approach of measuring gender disparities among scholars. The present study scrutinizes the publication output of men and women scientists from Russia, with the aim of delineating similarities and differences in research productivity.

The findings are presented in the article *Pilkina, M., & Lovakov, A. (2022). Gender disparities in Russian academia: a bibliometric analysis. Scientometrics, 127(6), 3577-3591. doi.org/10.1007/s11192-022-04383-w*

(3) Self-level of gender disparities: How do men and women scholars perceive and experience gender disparities within the context of Russian academia?

Despite the evident issue of gender inequality in academia, little attention has been given to how academics perceive gender inequality in their workplaces. Gender inequality in academia can create an unpleasant atmosphere for women, where their professional role is not visible or valued (Eslen-Ziya & Yildirim, 2022). However, the perception of the ‘chilly climate’ and the differences between male and female academics remain under-researched. This study objects to address gender inequality in academia by studying academics’ perceptions of these issues.

The findings are presented in the article *Pilkina, M., (2024). What are the differences in perception of gender disparities in academia? A survey of academics from Russia. Educational Studies (in print).*

- (4) Self-level of gender disparities: What are the most and least common gendered challenges men and women academics encounter in their workplaces?

For a thorough examination of gender-related challenges within the context of Russian academia, it is important to delineate the distinct manifestations of inequity experienced by men and women scholars in their professional environments. A survey conducted among members of the Russian academic community has unveiled the principal instances of gender disparity.

The findings are presented in the article *Pilkina, M., (2024). What are the differences in perception of gender disparities in academia? A survey of academics from Russia. Educational Studies (in print).*

- (5) Situated activity of gender disparities: What are the factors determining women's academic career trajectories in Russia?

This article is relevant to the dissertation in that it offers an explanation of why this topic is worthy of further investigation. From the perspective of institutional settings and disparities within, the research indicates that academic career trajectory does not fundamentally differ from other professional career paths, particularly for women (Mason & Goulden, 2004). Like other institutional areas, academia is characterised by hierarchical structures, opportunities for advancement, and challenges related to work-life balance. For women, these challenges often mirror those found in any governmental institutions, including the underrepresentation in senior positions and the persistent gender pay gap (Perna, 2001).

Research indicates that women in academia face similar barriers to those in other industries, including the need for networking, mentorship, and the balancing of professional and personal responsibilities (Probert, 2005). These barriers contribute to a slower rate of career progression and lower job satisfaction compared to their male counterparts (August & Waltman, 2004). Moreover, the phenomenon of women being disproportionately lost at various career stages, known as the "leaky pipeline", is evident in both academia and other professional fields (Blickenstaff, 2005).

Despite these challenges, women in academia employ similar strategies for career advancement as those in other sectors, including continuous professional development, building supportive networks, and seeking out leadership opportunities (Dean, Bracken, & Allen, 2009). In light of the preceding arguments, it is of interest to examine the similarities and differences in career trajectories within the context of the Russian academic community, with a particular focus on identifying those that are unique to academia. Thereby, the paper conducts a comparative analysis to assess the reasons that affect women's career trajectories in

Russia. It analyzes the factors that influence women's career trajectories and possible causes of gender gaps, providing insight into the peculiarities of women's career trajectories in Russia from a comparative perspective. The study is also based on feminist institutionalism, the main theoretical framework of the dissertation research.

The findings are presented in the article *Пилкина, М., (2024). Гендерные аспекты карьерных траекторий женщин в России. Вестник Пермского Университета, 18(1), 73–81. doi: 10.17072/2218-1067-2024-1-73-81*

4. Research Design

4.1. Theoretical Framework

4.1.1. Gender Notion in the Context of Academia

It is commonplace to encounter assertions regarding the socially constructed nature of various phenomena, and gender is no exception. Since its inception in the 1970s, aimed at distinguishing gender from physiological attributes of biological sex, the conceptualization of gender itself has engendered considerable debate (see, e.g., West & Zimmerman, 1987; Schiebinger, 1999; Risman, 2004; Nielsen, 2015; Risman, 2021). Presently, gender remains subject to diverse interpretations, contingent upon epistemological and ontological perspectives (Schilt & Westbrook, 2019).

Over the years, gender, a pivotal concept in social sciences, has undergone significant scrutiny and evolution in theoretical frameworks. The discourse has transitioned from essentialist paradigms rooted in biological determinism to more intricate social theories that illuminate the interplay of culture, power dynamics, and socialization processes in shaping gender behaviors (Salzinger, 2018). The social theory of gender posits that gender is not simply a product of biological differences but is constructed and maintained through social processes, institutions, and interactions.

Broadly speaking, gender connotes the social attributes ascribed to the categories of manhood and womanhood. According to the ‘Gender Terms’ Dictionary, gender encompasses “a set of social and cultural norms that society prescribes to be fulfilled by individuals based on their biological sex” (European Institute for Gender Equality, 2020). This section furnishes definitions and conceptions of gender to elucidate its essence within the purview of educational studies. Primarily, gender is defined as the alleged product of social construction.

During the third wave of feminism, Judith Butler, a seminal gender scholar, posited that gender is perpetuated and defined as a category through socially constructed understandings of gender. In her work “Gender Trouble: Feminism and the Subversion of Identity” (1990), Butler offers the notion of gender performativity, contending that “repetitive performances of ‘male’ and ‘female’ in alignment with societal norms solidify the categories, fabricating the semblance of a naturalized and essentialized binary”.

The conception of gender as a social construct posits that societal, rather than biological, disparities underpin gender identity (Anderson, Logio & Taylor, 2005; West & Zimmerman, 2020). Essentially, this viewpoint posits socially constructed gender as an outcome of varied social factors and phenomena, including social institutions, normative frameworks, and communal conventions. It assumes that the socially constructed object is “causally or non-

causally derived from and reliant upon specific social factors for its existence, nature, or attributes; absent these factors, the entity would not exist, or manifest as it does” (Griffith, 2018, p. 394).

Consequently, it follows that gender constitutes not a fixed descriptor of an individual, but rather a performative enactment, wherein individuals conform to or deviate from socially endorsed gender stereotypes. This suggests that individuals embody specific gender norms and comport themselves in accordance with practices aligned with those norms. In other words, this implies that men and women are essentially different in what makes them behave in ways that appear essentially different and, thus, being perceived inherently distinct.

The concept of gender, understood as a social construct, is inextricably linked with other social markers, including race, class, ethnicity, and socioeconomic background. This approach posits that social identities do not exist in isolation but rather intersect to create complex systems of oppression and privilege (Crenshaw, 1989). The intersection of gender with race and ethnicity demonstrates that the lived experiences of individuals are diverse and cannot be generalized. For example, the stereotypes and societal expectations placed upon women from disparate backgrounds can diverge considerably. In the context of the dissertation, the primary focus is on gender. However, the perspective of analyzing a diverse range of social constructs that influence the development of the academic profession might be considered as a possible continuation of the dissertation research.

In the context of gender, various processes contribute to the transmission of societal norms associated with masculinity and femininity. Particularly this happens during childhood when children encounter a dichotomous ‘blue’ and ‘pink’ gender paradigm, the way they internalize and reproduce gendered expectations (Martin & Ruble, 2020). This evident example extends to academic settings, wherein boys and girls are often pigeonholed, for instance, with science, technology, engineering, and mathematics (STEM) fields predominantly perceived as male-dominated, thereby significantly influencing the subsequent professional trajectories of men and women within academia (Law et al., 2021).

From this perspective, it is essential to mention how such gender norms might be constructed and incorporated within society. One of the most common approaches is that of Michel Foucault, who emphasizes that gender norms are inextricably linked to power relations and the discourses that circulate within society. Foucault posits that power is not merely a top-down force but a pervasive network of relationships that permeate every level of social interaction (Foucault, 1978).

Foucault's analysis of power and discourse reveals that societal norms, including those related to gender, are produced and perpetuated through various institutional and social practices (Foucault, 1972). In the context of gender, discourses around masculinity and femininity are not simply reflections of natural differences but are actively constructed through power-laden practices that enforce specific roles and behaviors. In practice, within the context of the boys-girls division in STEM, it can be observed that gendered norms are not only involved at the so-called entrance to these research fields but are also promoted within them. For instance, a male scholar from the survey described in Article 3 stated, "Some sciences are simply not for women. They cannot make physical or chemical experiments as men do due to their capabilities".

Another example is the manner in which academic institutions discuss and regulate gender roles, which contributes to the reinforcement of traditional gender roles. These institutions may disseminate discourses that define and limit acceptable gender expressions and identities, often privileging certain masculinities and femininities while marginalizing others (Butler, 1990). This process of exercising power is not limited to overt coercion but also encompasses the subtle shaping of desires, beliefs, and self-perceptions, thereby, influencing the perception of both scholars' own roles and gender-related issues.

Within the framework of feminist institutionalism, a prominent theoretical underpinning, gender is construed as an integral facet of social relations predicated on perceived socially constructed and culturally variable disparities between women and men (Scott, 1986; Hawkesworth, 2005). This implies that gender is shaped by cultural and societal influences, assumes diverse manifestations, and evolves over time. While gender may exhibit cross-cultural variations, within a single culture, multiple iterations may coexist. Hence, such a social construct engenders perceptions of gender-related attributes contingent upon institutional spheres, primarily informal institutions.

Gender disparities in organizational settings are correspondingly characterized by systematic inequities in power dynamics and control over various aspects, including goals, resources, and outcomes. These disparities encompass workplace decisions such as work organization, opportunities for advancement and engaging tasks, job security and benefits, compensation, respect, and satisfaction derived from work and interpersonal relationships (Acker, 2006). Extending this perspective to the academic milieu, gender disparities entail differential assessments of individuals based on their gender, as well as the evaluation of fields predominantly occupied by men or women within higher education institutions (O'Connor, 2020; O'Mullane, 2021).

Gender bias within institutions can be demonstrated through various factors, such as the spatial and temporal arrangements of work, principles of management, job evaluation processes, and the value placed on instrumental versus nurturing tasks. Additionally, career advancement opportunities may be contingent upon access to social networks and promotion pathways (Bird, 2011).

Joan Acker coined and defined the term ‘gendered institutions’ to refer to the presence of gender in the processes, practices, images, ideologies, and distributions of power in various sectors of social life (1992, p. 567). Although institutional norms are formally presented as gender-neutral, they are de facto deeply androcentric, meaning to be oriented towards men (Clavero & Galligan, 2020).

Acker (1990) identified multiple ways to identify gender disparities within an organization. One way is through an evident division of labor, where men are almost always better represented in the highest positions of organizational power, such as academic and managerial positions (Herschberg & Berger, 2015; Graddy-Reed et al., 2019). Secondly, organizations can be gendered through informal features such as images, language, wordings, and symbols that reinforce unequal labor divisions. For instance, the positioning of successful and productive researchers in STEM is often associated with the image of a man possessing epistemic qualifications (Clavero & Galligan, 2020). Third, in gendered organizations, actors may adopt gendered ways of thinking about their professional activity, such as the belief that working more than colleagues is necessary for a successful academic career. Fourth, gender disparities in gendered institutions are manifested in interactions of dominance and submission between actors, including gender biases.

Gender bias is embedded in organizational logic, such as job evaluation systems that favor masculine characteristics and preferences for professional roles. One example of a manifestation of this issue is the evaluative criteria in academia that favor uninterrupted careers, including the consideration of maternity leave as a barrier to career advancement (Goulden, Mason & Frasch, 2011; Bos, Sweet-Cushman & Schneider, 2017; Ysseldyk et al., 2019).

The integration process into an academic career and the likelihood of obtaining a permanent academic position may be influenced by gender (Murgia & Poggio, 2018; Bozzon, Murgia & Poggio, 2019). Therefore, if this study solely examines indicators of successful academic careers, it may be biased due to gender stereotypes associated with the academic profession. As Stromquist (2017) emphasizes, it is essential to focus on both performance and quantitative indicators, as well as the qualitative aspect, of an academic career. Scholars should strive for a balance between performance orientation and self-reflection (Stromquist, 2017).

Epstein and Fischer (2017) investigate academic career intentions, revealing that self-efficacy beliefs wield a significant predictive influence over such aspirations. This study underscores the combination of organizational and societal contextual factors is crucial in fostering a successful academic trajectory. Angervall, Gustafsson, and Silfver (2018) analyze the interplay of gender dynamics within the academic realm, clarifying the complicated intersection of diverse gender and institutional contexts in shaping career trajectories. From this vantage point, the connection between individual scholars and their affiliated institutions is characterized by multifaceted considerations of career progression and gender itself. The present paper adopts a dual lens, examining gender disparities in academia from both individual and institutional perspectives, with the objective to provide a cogent and comprehensive assessment of how gender issues impact academics and the academic environment.

In conclusion, gender functions not only at the subjective and interpersonal levels but also as an intrinsic feature of institutions and social structures. It permeates institutional settings in all environments, including academia, influencing systemic practices and norms. When discussing gender and gender inequality within the academic profession, both can be considered fundamentally contested concepts. Indeed, individuals frequently engage in mixed-gender environments at work and in family life, shaping their personal perspectives and beliefs about gender roles and the reasons for gender disparities across various occupations. Consequently, most people are more likely to express their opinions and consider themselves informed on these issues compared to other less contentious and less personally relevant topics.

Thereby, addressing gender inequality in academia thus involves navigating a highly charged and politicized domain. This dissertation aims to establish a foundation for a deeper and more comprehensive understanding of the complex phenomenon of gender inequality within Russian academia.

4.1.2. Feminist institutionalism

The field of gender and feminist studies is interdisciplinary, covering a diverse range of theoretical frameworks and methodological approaches. This study utilizes feminist institutionalism, which views gender balance as a feature of both institutions and social structures (Walby, 1990), to address gender disparities. Specifically, it examines the relationship between institutions and actors. This theoretical approach considers gender equality as an integral element of institutional development.

Feminist institutionalism examines gender questions through the formal architecture and informal networks, connections, conventions, rules, and norms of institutions (Krook &

Mackay, 2010). According to feminist theories, mainstream theoretical approaches may include implicit biases because they were developed mostly by men and thus inevitably reflect male experiences and ideas. The feminist movement's growth and the incorporation of democratic ideals into political theory have emphasized the significance of raising issues related to the representation of female opinions and interests. This study primarily focuses on gender-related problems faced by women in academia. It is widely accepted to apply a more 'woman-centered' perspective (Smith, 1987; Carver, 2012).

The feminist institutionalism provides an explanation the social phenomena (e.g., academic organization) is always experienced from a particular social standpoint where individuals, in the case of research – academics, are in the social structure (Smith, 1987; Harding, 2009; Phillips & Milner, 2017). This research strategy recognizes critical orientation toward the efforts to develop "objective" research that is not grounded explicitly in the ongoing subjective experiences of human beings in their everyday lives (Johnson, 2008). Thereby, the generalization of gender-related aspects is essential to intensify the research objectivity.

Feminist institutionalism, as other neo-institutionalist approaches, contends that there are two types of institutions: formal and informal. In feminist institutionalism, the term 'institution' is applicable to formal institutional norms, practices, and structures as well as informal mechanisms. Such an approach subsequently makes formal and informal institutions more susceptible to gender-equitable development. Formal institutions are considered as specifically designed and clearly specified practices (Lowndes & Wilson, 2003).

Feminist institutionalism thus applies new institutionalism through a gendered lens, starting from the premise that both formal and informal institutions are gendered (Minto & Mergaert, 2018). Indeed, the starting point is that institutions are highly gendered, with the possibility of gendered change within them. According to this approach, all rules (i.e., informal institutions) are gendered and not only contribute to gendered power dynamics, but also affect opportunities for change in institutional settings (Krook & Mackay, 2011).

In general, feminist institutionalism helps to answer questions about how and to what extent particular institutions and sectors are gendered, how gendered institutions came to be, and the relationship between different actors and the institutional context. It is crucial to examine why some institutions can reproduce or exacerbate patterns of gender discrimination, even when they are supposed to promote equality (Mackay & Waylen, 2009). For example, the distinction between male and female leadership and specific forms of professional activity should ideally be eradicated and become the norm of institutional essence. Feminist

institutionalism consequently emphasizes the importance of regenerating institutions with due consideration to women's empowerment.

Feminist institutionalism requires that feminist research be approached with a more "institutional" concept (Lovenduski, 1998; Mackay, 2004; Beckwith, 2005). This means that the focus is on examining the interactions of women and men "as gendered institutional actors" within institutions, namely academia, rather than emphasizing the importance of equal representation of women (Mackay, 2004). Thus, men and women are seen as equal actors, not as unequal representatives striving for parity.

Initially feminist institutionalism has been applied mainly to political institutions, more recent research strands have extended to other types of institutions, including higher education institutions and particularly academic ones. O'Mullane (2021) applies feminist institutionalist theory to investigate "how higher education institutions in Ireland have the capacity to make Athena SWAN Charter gender-equity actions (commitments), while being mindful of the role played by traditional gender norms" (p. 235).

Verge et al. (2018), using feminist institutionalism, identify the types and forms of resistance to the integration of gender into the higher education curriculum in a Spanish University and display the informal norms underpinning the reinterpretation of gender equality and mainstreaming policies had an impact on the implementation of new gender-oriented curricula. Bencivenga (2019) applies feminist institutionalist approach to analyze gender equality in academia based on two European gender equality initiatives (the Athena SWAN Charter in Ireland and the Italian "Comitati Unici di Garanzia") and confirms its utility in terms of research on the academic environment.

Clavero & Galligan (2020), drawing on feminist institutionalist theoretical approach, explores the interactions between gender and institutional change in universities to understand the factors hindering implementation of gender equality plans in the context of institutional changes. The authors conclude the recent evolution of feminist institutionalist theory could be particularly useful for an analysis of institutional change towards gender equality and the resistances to such changes in academic settings.

Based on feminist institutionalism, this research assumes that socially constructed feminine and masculine characteristics might explain some gender-related problems in the Russian academic environment. Any institution, including academic institutions, may be imbued with a masculinized gender that shows that it was created by and for men (Buckley et al., 2014). Therefore, women might be marginalized and more constrained by institutional norms established primarily by men, and thus still face gender-related problems in academia.

4.2. Differentiated levels of analysis

This study analyzes gender inequality in science at several levels. To do so, the paper uses the ‘research map’ (hereafter referred to as the Map) developed by Derek Layder (1993). This approach identifies the relationship between “different levels and dimensions of social reality” (Layder, 1993, p. 7). Layder’s map is widely used in educational research, including primary education, higher education, and the academic profession (see, for example, Czerniawski, 2009; Furlong & Maynard, 2012; Ukkonen-Mikkola & Fonsén, 2018). The Map assumes a multilevel analytical approach that focuses on examining the macro level (large-scale phenomena such as global, national, and institutional levels), the meso level (organizational processes), and the micro level (individual social interactions). These three levels can operate on different time scales in a complex and multifaceted social world (Czerniawski, 2009, 423).

In Layder’s research map, there are research elements relevant to each level: context, setting, situated activity, and self. In very general terms, each of the elements defines and describes a separate level of an institution (which can be both formal and informal). To understand each level in detail, the direct definition of each level is quoted from Derek Layder’s paper: “The research focus indicated by the term ‘self’ refers primarily to the individual’s relationship to his or her social environment and is characterized by the intersection of biographical experiences and social involvements. In ‘situated activity’ the focus shifts away from the individual to the emergent dynamics of social interaction. ‘Setting’ denotes a research focus on the intermediate forms of social organization that provide the immediate arena for social activity. ‘Context’ refers to the broader macro-social forms that provide the more distant environment of social activity” (Layder, 1993, p. 9).

The study of the academic environment transcends its conventional boundaries, encompassing a myriad of social, individual, and systemic causes and characteristics. These elements exhibit dynamic fluctuations, undergoing transformations, transient disappearances, and reappearances in diverse manifestations. Indeed, the academic community is susceptible to the influences of global and national trends, alongside the individual attributes of its members and a spectrum of organizational dynamics.

Table 1 demonstrates the interrelation between each research strand and the various components delineated within Layder’s research framework. The table underscores the focal points of this paper, namely the ‘context’ and ‘setting’ dimensions. The study is centered on

examining gender characteristics to understand how these characteristics influence and are influenced by different strata of gender dynamics within the academic realm.

Table 1. Approach to analyzing gender inequality in the context of the study map

Element	Focus	Research Direction	Empirical Analysis
Context	Macro social forms, e.g., gender, national culture, national economic situation	Gender within academia	Secondary data analysis on the gender composition of academic staff in Russia
Setting	Immediate environment of social activity, e.g., organization, department, team	Research performance assessment	Bibliometric analysis of research performance and publication patterns of Russian academics
Situated activity	Dynamics of “face-to-face” interaction	Factors influencing career advancement	Interviews with academia representatives and women leaders
Self	Biographical experience and social involvements	Perception of gender-related issues	Survey data on gendered challenges within academia

As indicated in Table 2, the analysis starts from the general description of the gender situation in academia and is intended to provide an overview of gender representation at different academic career levels. With the aim of understanding the overall context of the gender order in the Russian academic environment, this part is situated in what Layder calls the ‘context’ – “macro-social forms that form the more distant environment of social activity” (Layder, 1993, p. 9).

The ‘setting’ element is about the description of gender inequalities that are relevant to Russian science. This implies that various gender-based inferences are analyzed through the evaluation of research performance. The analysis of factors influencing academic career advancement is then based on the ‘situated activities’ element, which is concerned with how different meanings and understandings are influenced by ‘context’ (i.e., the general gender situation in academia) and ‘self’ (i.e., perceptions of gender-related issues). The final level of research is based on the analysis of individual experiences and personal perceptions of gender

issues in the workplace. This level focuses on how individuals are influenced by and respond to social situations, reflecting the social experiences of academics and their interaction with the context and conditions in which they find themselves.

4.3. Research Methodology

The dissertation is a mixed-method study that includes three complementary methods: (1) a bibliometric analysis of scientific activity - a quantitative method, (2) a survey to elucidate perceptions of gender differences among scientists - a quantitative method, and (3) qualitative in-depth interviews to identify possible institutional features that explain the existing gender order in career trajectories. The choice of methods is based primarily on their relevance to answering the research questions. In addition, feminist research is considered as such if it is based on the reflection of women's experiences (Shalaeva, 2004). In addition to quantitative approaches, it is important to include a qualitative perspective in the research. This is represented by in-depth interviews that analyze the factors that influence women's professional careers.

Given the purpose of the research, the use of qualitative methods seems justified and even inherent. Qualitative methods are considered more relevant to gender research because they allow for the inclusion of subjective knowledge and create an equitable relationship between researcher and respondent (Westmarland, 2001). However, there is also an alternative view that understanding gender specificity in any institutional setting is limited due to the use of descriptive approaches and/or lack of quantitative methods (Wu, Li & Zhang, 2019). Therefore, in order to minimize the potential limitations of the study, this paper makes equal use of qualitative and quantitative approaches.

(1) Bibliometric analysis

The bibliometric approach is an analysis of the scientific productivity of Russian scientists through publication activity. The data for the bibliometric analysis were obtained from the Web of Science (WoS, Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index) and InCites databases. In order to retrieve publications by representatives of the Russian academic community, an advanced search was performed by (1) field of study; (2) location; (3) publication date; (4) document type. All 'articles' and 'reviews' published between 2017 and 2019 were included in the analysis. This timeframe allows us to analyze the current situation in the Russian scientific environment and to consider articles that have already been fully indexed. All reviewed articles included at least

one author affiliated with a Russian scientific organization. As a result, 121,953 papers were included in the analysis.

Each publication was assigned to a specific research area to identify the most and least gender-balanced research areas. The analysis is based on the Essential Science Indicators (ESI) scheme, which includes 22 research fields. Each research paper was assigned to one of the 22 research fields (Table 2). The received publications with at least one Russian author had many co-authors from other countries. To search for Russian authors by address data, a special code was created to highlight authors from Russia. The analysis of the relative contribution of Russian male and female scientists to published papers is based on the share of articles and reviews published by authors of each gender from Russia. The analysis is based on the full-count method, which is one of the most popular approaches for calculating bibliometric indicators (Waltman & Van Eck, 2015; Perianes-Rodriguez, Waltman & Van Eck, 2016). This means that a publication authored by several researchers is fully attributed to each author, with a weight equal to one. Thus, the empirical basis of the bibliometric study was 171,296 unique authors and 602,907 authorships.

Table 2. List of research fields with numbers of papers with at least one Russian author in 2017-2019.

Field	Number of Papers	Field	Number of Papers
Physics	28,277	Environment / Ecology	2716
Chemistry	25,187	Social Science	2153
Materials Science	10,026	Computer Science	1894
Geoscience	8357	Pharmacology & Toxicology	1518
Engineering	7969	Neuroscience & Behavior	1481
Mathematics	6563	Microbiology	1165
Clinical Medicine	5783	Agricultural Science	1036
Biology & Biochemistry	4823	Psychiatry / Psychology	930
Plant & Animal Science	4465	Immunology	571
Space Science	3499	Economics & Business	568
Molecular Biology & Genetics	2887	Multidisciplinary	85

(2) Russian academia representatives' survey

From a population of 171,296 authors, 29,740 scientists affiliated with Russian scientific institutions and with email addresses ending in .ru were identified. This approach allows the use of non-probability sampling, which can be applied in similar studies with analysis based on the author database (Rowley and Scaffi, 2021). A total of 901 questionnaires were deemed acceptable for analysis, representing a response rate of 3%, which is consistent with other studies conducted by scholars using surveys (e.g., Rowley and Scaffi, 2021; Ni et al., 2021).

The survey itself was a 20-item anonymous online questionnaire with five main blocks: (1) demographic characteristics (gender, age, presence of children, current workplace), (2) academic experience (degree, field of study, and position), (3) gender experiences as an academic, (4) perceptions of gender issues, and (5) causes and directions of gender issues in academia.

Several methods of statistical analysis were used to examine differences in perceptions of gender issues. First, descriptive statistics of respondents' questionnaires and responses to each question were conducted. In addition, the types of gender inequalities experienced (or not) by male and female scientists were analyzed. Then, the non-parametric Mann-Whitney U-test was used to assess the statistical significance of differences (p) between genders.

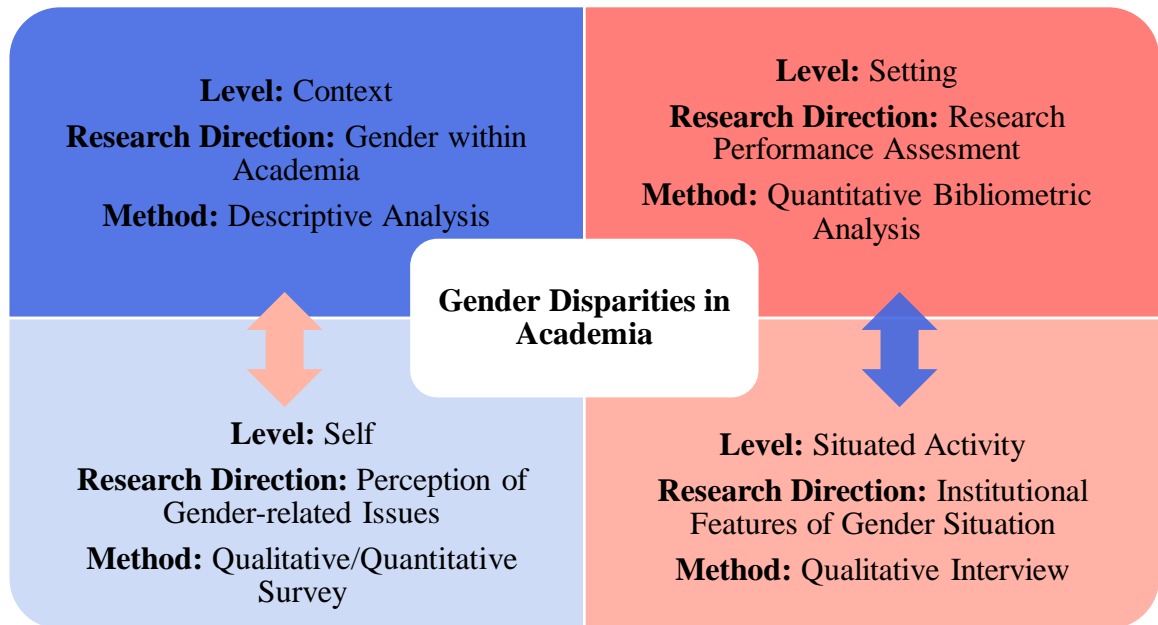
(3) In-depth qualitative interviews

The qualitative phase of the research is based on 23 in-depth semi-structured interviews with women who hold top and senior positions in various professional fields, including education. The study used purposive sampling: all respondents had professional experience in their organizations and were selected to cover different aspects of their career trajectories.

The interviews were analyzed using qualitative content analysis, which is a systematic method for analyzing textual data, including interview analysis. Qualitative content analysis uses a coding system to analyze, interpret, and summarize empirical data. In this study, the factors that influence women's leadership and the gender structure in the institutional environment as a whole were used to develop the coding category. Various formal and informal institutions that directly or abstractly influence women's career trajectories were identified as key categories. In addition, the coding categories were developed through direct use of empirical material. For this purpose, the first stage of the analysis of the interviews involved the compilation of a general list of identified themes that were repeatedly mentioned by the female respondents. These themes were then compared with other factors that influence women's careers to determine the final coding categories and analysis.

Thus, each method used in the dissertation study correlates to a specific level of Layder analysis (Figure 2).

Figure 2: Differentiation of levels of analysis in the context of methodology



4.4. Contributions to the Research Topic and Data Collection

From 2021 to 2023, the author, Marina Pilkina, developed the concept and design of the present dissertation research independently. The author was involved in all aspects of the study, from the formulation of the conceptual framework and the identification of the theoretical and methodological foundations to the collection and analysis of empirical data. In particular, the author personally collected data for each study, namely bibliometric analysis, surveys, and in-depth interviews. Additionally, the author developed specific tools for analyzing research productivity and gender factors and conducted an analysis of both the survey and interviews.

The author was solely responsible for formulating the results and substantiating the conclusions presented in the dissertation. Thus, the author conducted an analysis of the influence of gender factors on research productivity within Russian academia, the perception of gender issues by scholars, and then career trajectories relevant to women professionals.

5. Dissertation Findings: Outline of the Papers

The results of the dissertation work are presented in four scientific articles, each of which corresponds to one or another research task. Taken together, the publications aim to achieve the set goal - to explain the existing gender problems in the Russian academic environment and to identify the main aspects of gender inequality (Table 3). From a theoretical point of view, this section presents aspects of the study of gender and gender (in)equality in the context of the academic environment in Russia. Then, the practical results of the work are described, namely the scientific productivity of Russian scientists, the perception of gender issues, the most and least common gender differences, and the gender specificity of career trajectories.

Table 3: Summary of research articles

	Article #1	Article #2	Article #3	Article #4
Data	Gender-related research articles	121 953 publications	901 questionnaire	23 interviews
Theory	Literature review	Bibliometrics	Feminist Institutionalism	
Method		Research performance analysis	Online survey	In-depth interviews
Results	Choice of theoretical approach to gender interpretation and operationalization of feminist institutionalism	Evidence of gender gaps in the research production of Russian scientists	Perceptions of gender issues and major manifestations of gender inequality	Analysis of factors influencing women's career trajectories and possible causes of gender gaps

5.1. Conceptualizing Gender in Academia

Research Context

Over the past few decades, gender studies have emerged as a prominent field of academic inquiry worldwide, significantly altering the discourse applied in research. Originating as an interdisciplinary area derived from primary scientific disciplines, gender studies have expanded into new fields, including various aspects of research within academia.

Despite the growth of gender studies across different social domains, there remains a paucity of work dedicated specifically to gender in the context of academia. Typically, research on gender and academic environments focuses on gender differences in professional outcomes rather than on gender itself. Another limitation of gender studies in academic environments is their emphasis on student experiences, often excluding the perspectives of scholars.

A similar situation is observed in Russian research. Currently, the field of gender studies in Russian science is characterized by a lack of breakthroughs in the conceptual development of gender and its derivatives, despite the demand for gender issues within Russian society. The activation of the gender agenda is significantly constrained by gender asymmetry in Russian society and academia, which implies unequal representation and distribution of social roles between women and men in various spheres of life. For these reasons, there is an objective need within the academic environment to describe contemporary approaches to gender issues and to identify mechanisms for further integrating the gender equality agenda into research of academic profession.

The varying interpretation of concepts is influenced not only by the development of gender theory in the context of academia but also by perceptions of actors within the institutional academic environment, social identities, and their interrelations. This pluralism leads to theoretical and methodological complexities due to fundamentally contested research approaches. Gender is a sociocultural phenomenon perceived differently depending on the context and time period. Similarly, the concept of gender equality encompasses a wide range of meanings and definitions, dependent on epistemological and ontological positions.

Thus, the relevance of the study is conditioned both by the demand for “the study and integration of gender issues in the educational system” (Sukhorukova, 2012, p. 156), and by the need to interpret the concept of ‘gender’ and ‘gender equality’ within academic community in order to develop and implement measures aimed at solving existing gender problems. This study is an attempt to fill the gaps in the literature by reviewing scientific works to identify specific interpretations of the concepts of gender and gender (in)equality in academia.

Research Results

The main theoretical approaches to gender and its derivatives in academia are diverse. Societal norms transmit expectations of masculinity and femininity, leading to various processes related to gender. To ensure meaningful research on gender within academic environment, it is necessary to clarify the concept of gender and distinguish it from sex.

Despite the challenges of conceptualizing and defining gender, the term provides a framework for examining norms and expectations that shape human behavior in social contexts,

including academia. However, a clear understanding of gender and its impact cannot be achieved without focused efforts to define its meaning in academic institutions. Theoretically, socially constructed gender characteristics can also account for existing gender issues in academia.

Interpretation of gender in academic settings, as in any institutional environment, can be based on power relations and hierarchy. Gender operates not only at the level of a personal perception but is also a characteristic of institutions and social structures. This approach is called feminist institutionalism, which focuses on the relationship between institutions and actors and aims to eliminate gender inequalities.

Thus, any institution can become gendered, meaning that gender attitudes, such as those regarding masculinity and femininity or male/female scientific fields, are embedded in the organization of the institution. Gender stereotypes that exist in society or are held by individuals can be transferred into the institution. Gender relations are institutionalized as they are embedded in social institutions. They can both limit and shape social interaction.

5.2. Gender disparities in Russian academia: a bibliometric analysis

“Science would not exist if scientific results were not communicated. Communication is the driving force of science. That is why scientists have to publish their research results in the open, international scientific literature. Thus, publications are essential”

(Noyons, Moed & Van Raan, 1999)

Research Context

Gender inequality is a prevalent issue in academia and other social and public spheres. One commonly used indicator of gender inequality in academia is the scholarly productivity of academics. Various studies have used bibliometric analysis to examine the status of women in academia (Hesli & Lee, 2011; Rørstad & Aksnes, 2015) and to observe the structure of scientific productivity through scientific publications in a country (Cooper et al., 2021; Ingwersen & Larsen, 2014; Nygaard, 2017). Therefore, in this dissertation, publication activity is the key criterion for analyzing gender inequality as it is the most important indicator of scientific production by scientists. Publications are analyzed as a measuring indicator of research activity, and gender is analyzed as a factor contributing to its development.

Recent bibliometric studies show a significant increase in the number of publications authored by women in recent years (Mairesse & Pezzoni, 2015). The literature review confirms the impact of gender differences on scientific productivity. Due to the diversity of studies and their interpretations concerning the scientific activity of men and women, this study, in addition

to analyzing the gender specifics of publication activity of Russian scientists, aims to explore the relationship between scientific productivity and gender.

Research Results

The analysis of scientific productivity among Russian scientists from 2017 to 2019 reveals persistent gender inequality in Russian science, particularly in bibliometric indicators. Women are underrepresented as unique authors from Russia, accounting for only 37% of the total number of authors. This disproportion is even more pronounced in terms of authorship, with men accounting for 73% and women only 27%. This bibliometric trend suggests a gender gap in the scientific productivity of Russian scientists. Women tend to publish fewer articles than their male colleagues, particularly in fields with a higher overall number of papers, such as physics and chemistry.

In all scientific fields, men have a greater number of publications than women, even though women are underrepresented in some disciplines. Scientific fields can be classified into three groups based on gender differences in scientific productivity: (1) male-dominated disciplines such as physics, computer science, mathematics, engineering, space science, and materials science; (2) fields that tend towards equality, including pharmacology and toxicology, neurosciences, and clinical medicine; and (3) female-dominated fields such as psychiatry/psychology and immunology.

This gap is most pronounced in physics, chemistry, and mathematics, but even in fields with quantitative gender parity, such as immunology and psychiatry/psychology, women still publish fewer papers on average than men.

The data presented in Annex 2 shows that women scientists publish fewer papers on average than men in all disciplines, with the greatest gender disparity being evident for scientists with five or more published papers in three years. The percentage of female authors with five or more papers is consistently low across all disciplines, averaging only 2%, compared to 6% for men. This indicates that women contribute a smaller proportion of published articles, due to their relatively lower scientific productivity and underrepresentation in most scientific fields.

5.3. Perception of gender disparities in academia: a survey of academics from Russia

Research Context

For the last 30 years, Russian academic gender research has primarily focused on the underrepresentation of women in high academic positions, the causes of gender inequality, the challenges women face in academia, and the impact of family responsibilities on their

professional activities. Although academic research has increasingly addressed gender issues, few studies have explored the perception of gender issues in the Russian academic environment. Gorshkova and Miryasova's (2020) study, which surveyed and conducted in-depth interviews with academics, found that "gender inequality is recognized as a problem in higher education, particularly among women" (p. 41). Indeed, the subject of gender disparities and gaps in academia is not a primary concern for men scholars, but rather a significant issue for women in the field (Pushkareva, 2011).

The study focuses on the perception of gender inequality in the Russian academic environment. The study aims to identify the criteria by which academics perceive gender issues in the academic environment. Additionally, this article examines the most and least relevant gender-associated issues for Russian academics.

Research Results

According to the survey, 74% of male and female scientists have not experienced gender inequalities. The range of scientists who have not experienced gender inequality is between 57% to 87% for all 17 listed inequalities. Female scientists have a higher proportion of experiencing gender inequalities compared to male scientists in all cases (Annex 3).

Gender inequalities that both men and women experience periodically or regularly include fewer opportunities for career advancement compared to colleagues of the opposite sex, barriers to promotion to leadership positions (43% for both), unequal distribution of public workload compared to colleagues of the opposite sex (39%), and gender bias in peer review (37%). Female scientists face significant limitations in career development, while men also encounter difficulties in career advancement, albeit to a lesser extent. Russian scientists are the least likely to encounter excessive demands for publication activity (13%), sexual harassment (14%), and unequal access to laboratory equipment (15%).

The percentage of women who consider gender inequality to be a problem in academic science is twice that of men (Annex 4). However, the perception of gender inequality remains low among both genders in the Russian academic community. Only 12% of men and 27% of women categorically or simply agree that gender inequality is a relevant problem. However, academics tend to view gender inequality as a social problem more often, with 54% of female (24% and 30%) and 31% of male (19% and 12%) academics agreeing or strongly agreeing. The percentage of individuals who strongly disagree has decreased accordingly. This indicates that gender inequality is viewed more as a societal issue in general, rather than a problem specific to the academic community.

Perceptions of potential gender solutions within academia seem to be varied. The survey results show that men (31%) are more likely to express strong disagreement with the proposal to work towards an equal proportion of female and male academics than women (12%), averaging 23% among all respondents. Correspondingly, men are less likely to agree (19%) with the need for equal representation of women and men in academia, while the figure for women is 34%. These findings suggest that there is a gender gap in attitudes towards gender equality in the Russian academic community.

5.4. Gender aspects of career trajectories

Research Context

Although significant progress has been made in achieving gender equality in senior leadership positions, women still encounter obstacles in accessing such roles. Additionally, they often face prejudice and resistance when assuming these positions (Eagly, 2007). Currently, one of the most prevalent approaches in career trajectory research is the stereotype construct (Larsson & Alvinus, 2020). According to this approach, occupational groups share common characteristics and exhibit behaviors typical of their environment (Hoyt & Murphy, 2016).

It is important to note that gender stereotypes often associate men with decisiveness, power, and dominance in leadership positions, while women are often associated with empathy, kindness, and responsiveness (Carli & Eagly, 2011). However, it is crucial to avoid relying on such biased and subjective evaluations and instead focus on objective criteria when evaluating individuals for leadership roles. Each woman must decide how to balance her career ambitions, earning potential, and socially prescribed caring responsibilities in the private sphere (Tartakovskaya, 2015, p. 85). Some argue that gender differences in careers stem from a lack of trust in women and the fear of male managers to take risks and hire women because they believe that women's personal qualities do not match the requirements of leadership positions (Eagly, 2007, p. 1). This article aims to explore the immediate factors that influence women's career trajectories and successes in Russia.

Research Results

Gender stereotypes can have a significant impact on the career paths and professional growth of women. Institutional features can become gendered based on specific feminine and masculine traits, affecting the professional environment and all those involved. It is important to note that social norms set by and for men may put women at a disadvantage, as men are often more trusted in leadership positions due to stereotypical gender roles. Gender attitudes

have a significant impact on society's expectations of women's professional qualities, as well as the norms and rules they should adhere to.

The hiring system and the economic activity of the organization also influence career stages in any professional environment. Career trajectories in academic settings are influenced by several factors, including generational structure. The absence of female leaders can be attributed to a corresponding generational shift in the academic recruitment system. This combination suggests that discriminatory social norms and stereotypes reinforce a gendered approach to careers, resulting in inequality.

6. Research Novelty and Thesis Statements

The thesis research has yielded six assertions of scientific novelty that hold implications for future research in sociology of education.

1. The study's findings highlight a notable gender disparity in scientific representation and productivity among researchers. Empirical data indicates that women scholars tend to have lower levels of publication output compared to their male counterparts. A substantial body of literature on gender aspects in publication activity supports this trend, indicating that women tend to publish less frequently than men (Mitchell & Martin, 2018; Witteman et al., 2019). However, it is important to note that the scholarly landscape remains diverse in perspectives. Some studies confirm the notion of lower publication rates among women (Hesli & Lee, 2011; Larivière et al., 2013; Rørstad & Aksnes, 2015; Astin & Davis, 2019), while others report little or no gender differences in publication production (Maass & Casotti, 2000; Mauleón et al., 2000; Mauleón et al., 2008; Sotudeh et al., 2018).

The present study provides empirical evidence that the Russian academic landscape adheres to a productivity paradigm in which women scholars contribute to scholarly discourse at a significantly lower frequency than their male counterparts. This disparity is reflected in the quantitative analysis of publication outputs and is consistent with broader global trends observed in other studies (Mitchell & Martin, 2018; Witteman et al., 2019). The data indicate that structural and systemic factors within academia contribute to this inequality. Therefore, targeted interventions are necessary to promote gender equity in scientific research and publication.

2. This study empirically substantiates a tripartite categorization of scientific fields based on their propensity for gender disparities. These categories are: (1) male-dominated disciplines, which include STEM fields such as physics, computer science, mathematics, engineering, space science, and materials science; (2) fields with relatively equal gender representation, such as pharmacology and toxicology, neuroscience and behavior, and clinical medicine; and (3) female-dominated fields like psychiatry/psychology and immunology.
3. This thesis presents empirical evidence of gender disparities within the academic environment, with a particular focus on the challenges faced by women academics. The primary challenge for women is the low probability of career advancement and the

numerous obstacles encountered on the path to senior positions. This trend is largely attributed to the prevalent tendency for Russian women to occupy lower-ranking academic roles, such as associate professors, lecturers, and assistants. This underrepresentation is also evident at the highest levels of academic leadership (Bagirova & Surina, 2017; Pilkina & Lovakov, 2022).

Empirical data indicates that women scholars are less likely to face excessive demands for publication output and incidents of sexual harassment. In contrast, men scholars frequently cite unequal distribution of administrative and public workloads, barriers to promotion to leadership roles, and limited opportunities for career advancement as key manifestations of gender inequality within their workplaces. Furthermore, men report gender discrepancies, including unequal access to research and laboratory facilities, experiences of sexual harassment, instances of inappropriate physical contact, heightened demands for publication productivity, and restricted opportunities for collaboration with colleagues.

The study therefore concludes that while women academics in Russia predominantly face gender inequality in terms of career advancement opportunities, their male counterparts are more likely to experience disparities related to social workload distribution and access to research resources. These findings underscore the necessity for targeted interventions to address the gender-specific challenges faced by women and men in academic settings.

4. The findings of the dissertation research indicate that there are disparate perceptions of gender issues among men and women employed within the academic sphere in Russia. Women are more inclined to recognize gender inequality as a problem compared to men. However, both men and women acknowledge the existence of gender inequality as a societal issue. Gender-related concerns hold greater salience for academics within broader societal contexts than within the confines of their immediate professional environments. Gender inequality is a global issue, with conspicuous manifestations such as wage differentials and formal constraints on women's career advancement. The lack of awareness regarding gender inequality within the Russian academic community may exacerbate this issue.
5. The research findings posit that certain institutions may perpetuate or exacerbate gender discrimination, notwithstanding professed commitments to fostering equality. This is since implementing gradual institutional change may require bricolage, which involves

combining extant institutional norms and practices in novel configurations that may not invariably accommodate specific dispositions, particularly those governed by informal institutional dynamics. The optimal trajectory within academia involves the dissolution of gender-based distinctions in professional pursuits and career advancement, thereby establishing gender-equity institutional norms as standard practice.

6. This dissertation operationalizes feminist institutionalism in the context of sociology of education. This theoretical approach enables the formulation of necessary categorical and methodological tools for scrutinizing gender within academic settings. Feminist institutionalism emerges as a promising theoretical framework for academic research for several compelling reasons. First, this approach harmonizes effectively with the diverse array of research methods commonly employed, encompassing methodologies such as surveys and in-depth interviews. By offering a comprehensive theoretical underpinning that accommodates various methodological approaches, feminist institutionalism serves as a versatile and universally applicable framework within the realm of disparities research. Second, by offering an alternative perspective to traditional research in sphere of academic profession, feminist institutionalism highlights informal institutional aspects that are typically recognized in gender studies as crucial to comprehending gender. By foregrounding these informal institutional aspects, feminist institutionalism fosters a nuanced understanding of the multifaceted nature of gender dynamics within institutional settings. Through the lens of feminist institutionalism, it is suggested that the distinction between the occupational and career paths of men and women in academia should be eliminated to establish equality as an institutional norm.

Thesis statement

- (1) Analysis of publication rates across all research fields in Russia reveals a clear gender disparity, with men scholars exhibiting significantly higher publication rates compared to women scholars, even in disciplines where their representation is relatively lower. Specifically, the mean number of publications for women scholars remains markedly lower than that of their men counterparts.
- (2) Three distinct groups of research fields have been identified in relation to gender disparities: (1) male-dominated disciplines such as Physics, Computer Science, Mathematics, Engineering, Space Science, and Materials Science, where men are overrepresented in terms of representation and publication output; (2) areas with

relatively equitable gender representation, including Pharmacology & Toxicology, Neuroscience & Behavior, and Clinical Medicine; (3) female-dominated fields such as Psychiatry/Psychology and Immunology, where women account for a majority of researchers and publications.

- (3) The gender disparities faced by women academics are multifaceted, encompassing limited opportunities for career advancement, barriers to attaining senior-level positions, and an uneven distribution of public workloads.
- (4) Both men and women scholars demonstrate a shared understanding of gender inequality as a societal concern rather than a workplace issue. This suggests that gender challenges transcend the confines of individual academic institutions and have broader implications for society.
- (5) Gender attitudes, encompassing both feminine and masculine traits, possess the potential to become institutionalized and exert influence over the professional environment and all involved actors.

7. Closing Discussion

The research posits that gender disparities within the Russian academic landscape stem from distinct qualitative and quantitative attributes inherent in academic pursuits. These criteria encompass gender-related facets of research productivity, impediments to career advancement encountered by both men and women scholars, and the prevalence of informal gendered structures that exert influence over the institutional academic environment. Gender inequality is frequently perceived as a cause and consequence of the gendered dynamics within academia. Empirical investigations consistently highlight a persistent discrepancy between the career trajectories of men and women (Nielsen, 2016; Caplar, Tacchella, & Birrer, 2017). Should prevailing trends persist, the attainment of gender parity across various academic fields and institutions appears improbable within the foreseeable future (Holman, Stuart-Fox, & Hauser, 2018; Dworkin et al., 2020). Gender imbalances endure across multiple metrics of academic inclusivity and achievement for women currently or formerly engaged in academic pursuits.

The study underscores that the gender barriers encountered by women scientists in academia evolve into institutional constraints, affecting their academic progression. It indicates that the gender norms and expectations that pervade academic culture not only affect individual women scholars but also influence the entire academic environment. This viewpoint is reinforced by research that demonstrates how informal networks and biases can influence hiring, promotion, and resource allocation within academic institutions (Steinpreis, Anders, & Ritzke, 1999; Moss-Racusin et al., 2012). Such a tendency also suggests that gender challenges transcend the confines of individual academic institutions and have broader implications for society.

The gendered nature of organizational environments can exert a profound influence on their operations, even in instances where formal declarations of gender parity are made. To ensure that efforts toward gender equality within Russian academic environment extend beyond surface-level recognition of gender disparities between men and women, it is crucial to gradually embed the gender agenda into the institutional settings of academic organizations (Acker, 1990).

It is noteworthy that initiatives aimed at fostering the professional advancement of women, while beneficial in certain respects, fail to address the underlying institutional issues that necessitated their implementation in the first place. The achievement of lasting gender equality and equitable professional opportunities for men and women scholars necessitates the implementation of a comprehensive gender agenda that duly acknowledges the challenges

described in the study. This should start with a detailed description of gender issues relevant to the context in question. This particular study is an attempt to provide such an analysis.

Incorporating a gender perspective into the institutional environment and implementing transformative changes in gender-related matters can engender positive shifts in gender dynamics within a specific context, offering valuable insights into potential avenues for redressal. These interventions can effectively tackle some of the challenges that academic institutions encounter in the realm of gender inequality. Institutions can use these policies to focus on gender issues and integrate gender equality policies into their settings, taking a systemic approach to the problem.

The formulation of gender equality policies in academia entails raising awareness regarding extant gender issues and embedding gender equality measures into institutional settings. A foundational principle guiding gender policy formulation in academia is the acknowledgment of institutions as inherently gendered entities, yet susceptible to gender transformation. This approach underscores the significance of developing empirically grounded ‘objective’ research devoid of subjective biases or stereotypes. The advancement of gender equality within academia directly impacts educational institutions and their stakeholders, including scholars. The realization of equal opportunities for both genders is indispensable for the efficacious functioning of institutions. Thereby, creating a favorable institutional environment to surmount existing gender challenges and barriers can evolve into a social norm within the academic domain, positioning gender equality as an institutional imperative.

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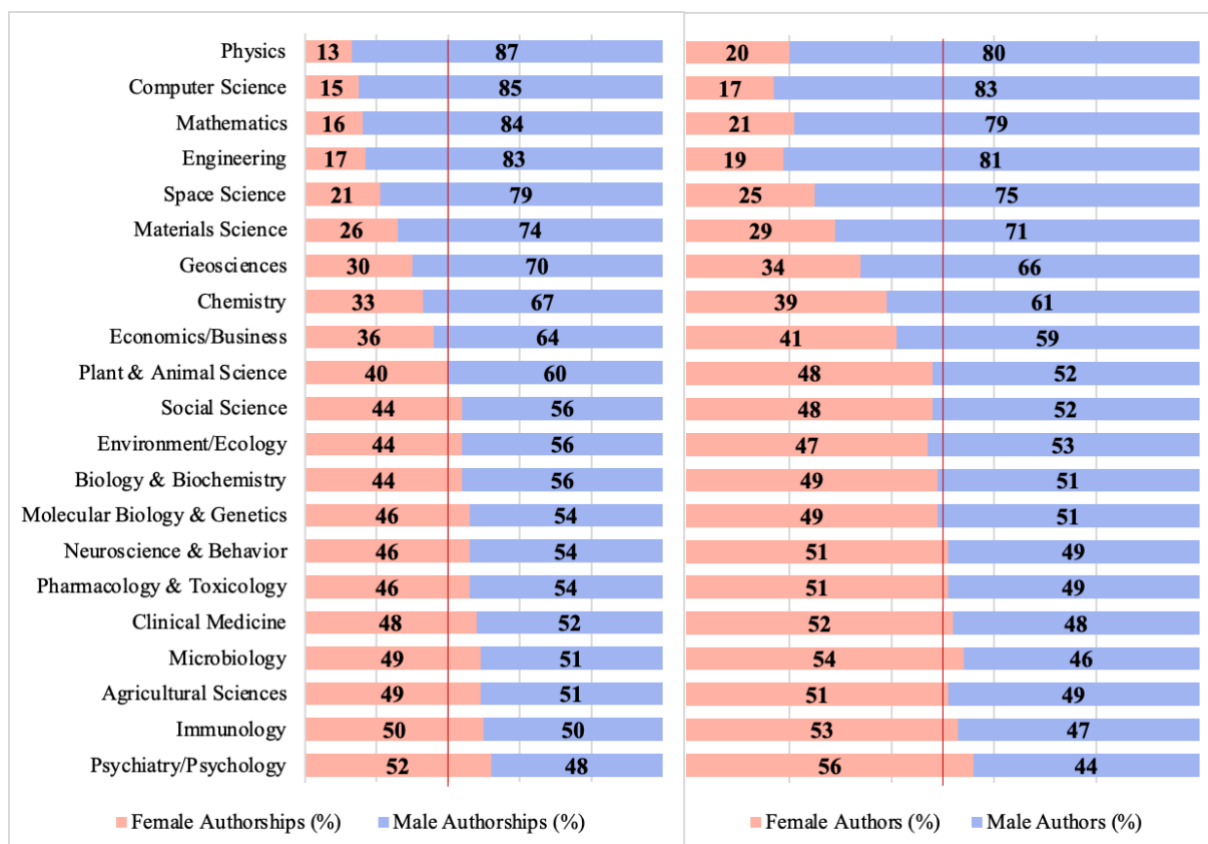
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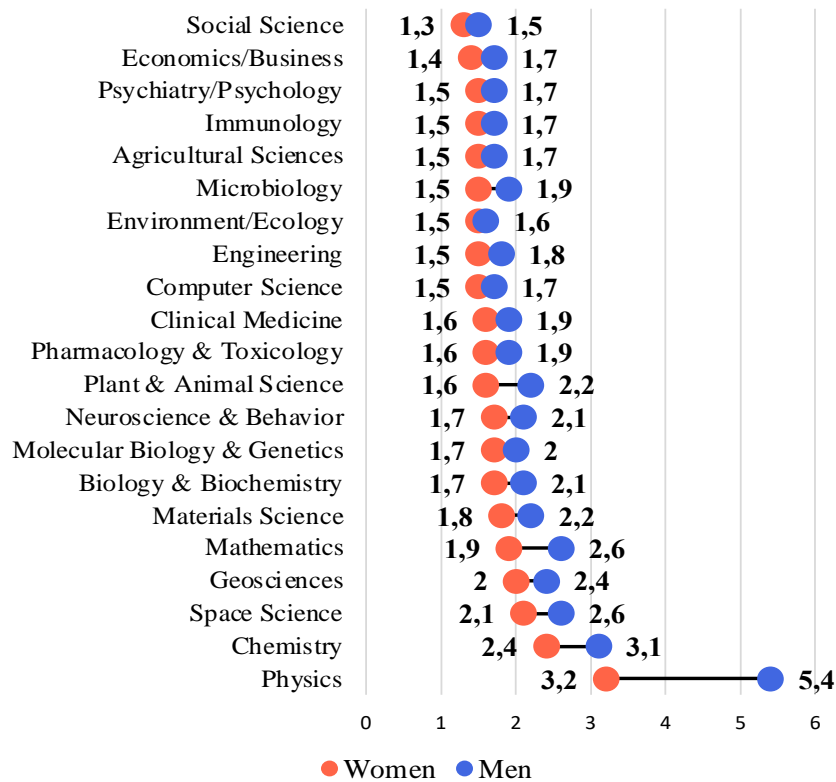
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9. Appendices

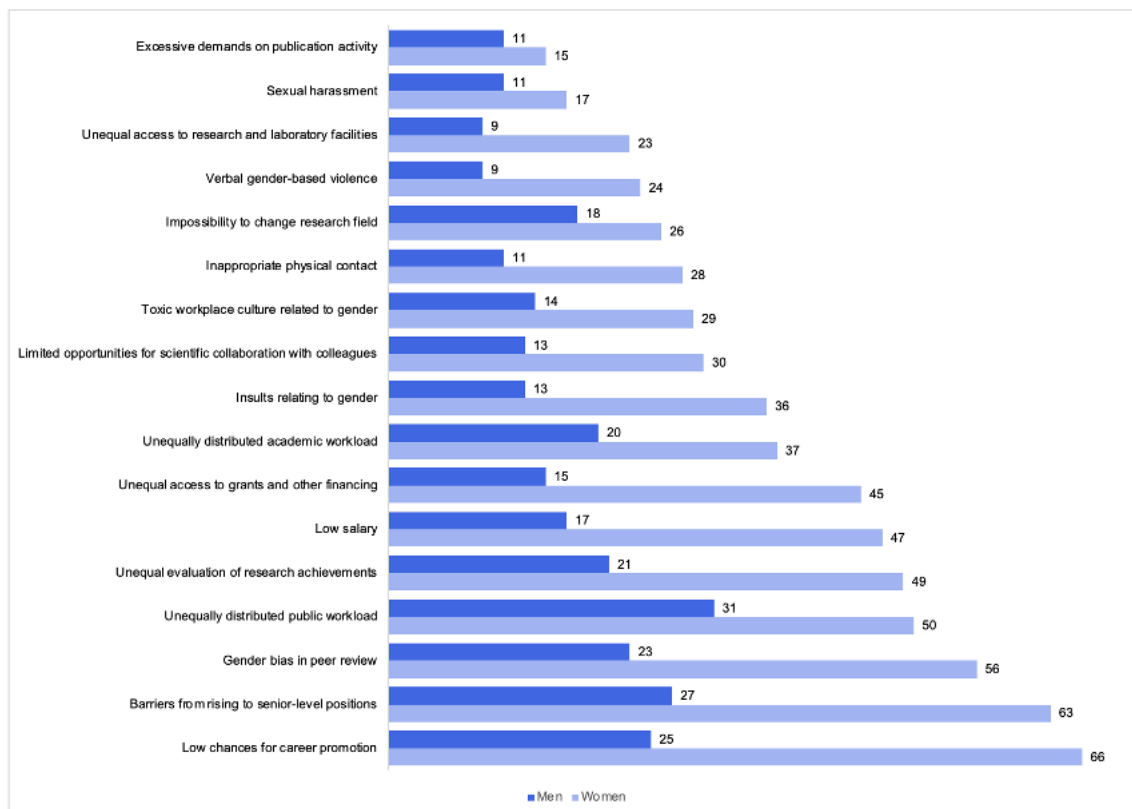
Appendix 1. Percentage of male and female authorships and authors from Russia



Appendix 2. Mean number of publications in WoS per men and women author



Appendix 3. The share of men and women academics in Russia who have ever had such an experience



Appendix 4. Gender differences in perception of gender issues within academia

