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Are women less persistent? Evidence from submissions to a nationwide meeting of Economics

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WORKING PAPER SERIES Nº 2020-19

DEPARTMENT OF ECONOMICS, FEA-USP
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Research Group: EconomistAs – Brazilian Women in Economics

Abstract:

Female underrepresentation in high-profile career positions has relevant impacts on firms' outcomes and public policies. In the academic profession, women's participation decreases as they evolve in their career. To understand the lack of women in the field of economics in Brazil, we investigate the decision to submit papers to the largest conference in the country (Brazilian Meeting of Economics), as an important achievement in the profession. We explore a novel panel dataset of researchers and match them with web-scraped data of their résumés to test gender differences in the probability of submitting an article one year after having an article (same or new) rejected in the previous year. Our findings suggest that women desist 5.9 percentage points more than men when facing rejection. We also find evidence that younger women give up more and that the quality of the undergraduate program matters to determine the difference in the desistance rate between men and women. We argue that higher quality institutions might self-select women who are more competitive.

Keywords: [Female underrepresentation, competitive behavior, academic conferences.]

JEL Codes: [J15, J16, C23, A11]

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September 28, 2020

Abstract

Female underrepresentation in high-profile career positions has relevant impacts on firms' outcomes and public policies. In the academic profession, women's participation decreases as they evolve in their career. To understand the lack of women in the field of economics in Brazil, we investigate the decision to submit papers to the largest conference in the country (Brazilian Meeting of Economics), as an important achievement in the profession. We explore a novel panel dataset of researchers and match them with web-scraped data of their résumés to test gender differences in the probability of submitting an article one year after having an article (same or new) rejected in the previous year. Our findings suggest that women desist 5.9 percentage points more than men when facing rejection. We also find evidence that younger women give up more and that the quality of the undergraduate program matters to determine the difference in the desistance rate between men and women. We hypothesize that higher quality institutions might self-select women who are more competitive.

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Acknowledgement: We thank Roberto Meurer and Eliane Rêgo for kindly providing the administrative data of ANPEC submissions. We also thank the Department of Economics of University of São Paulo, FIPE and FAPESP (grant no. 19/16952-7) for their financial support. We are grateful to all participants in the regular seminars of the Brazilian Women in Economics (EconomistAs), of the Family and Gender Economics Study Group (GeFam) and of the Regional and Urban Economics Lab of University of Sao Paulo (NEREUS) for their contributions. Finally, we thank Fabiana Pereira, Luiza Karpavicius, Pedro Feijo and Victoria Klarosk for their excellent research assistance.

1 Introduction

Female underrepresentation in the labor market, especially in high-earning job positions, is the subject of an extensive literature (Goldin (2014); Goldin, Kerr, Olivetti, and Barth (2017), Keloharju, Knüpfer, and Tåg (2019)). Having more women decision-makers is relevant not only due to equality concerns, but also because women in high-profile career positions present different outcomes, especially for public policies (Chattopadhyay and Duflo (2004); Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009); Beaman, Duflo, Pande, and Topalova (2012); Duflo (2012)). The same gender disparities are observed in the academic field of economics. In Brazil, in average, women represented 35.6% of assistant professors, while they were only 16.5% of full professors in 2018 and 2019 (BWE, 2019, 2020).[1] The numbers for the Brazilian academy are similar to those for the U.S., U.K. and Canada.[2]

One way to investigate the low representation of women in economics is by studying their participation in relevant research activities, such as academic conferences. Participation in seminars and conferences is one of the measures of success in academic careers and it depends, among other things, on how researchers compete to have their articles accepted for presentation at relevant academic events. Presentation at the main events increases the visibility of new articles, facilitates the construction of networks for institutional exchange and co-authorship, and is an efficient way to take advantage of peers' comments and suggestions (Casadevall and Handelsman (2014); Casadevall (2015); Kalejta and Palmenberg (2017)). To a lesser extent, participation at conferences also influences career progression, mainly in Brazilian public universities.

To shed light on the reasons why women do not progress as much as men in

[1]The BWE group promotes an annual research focused on gender differences in the economics field in Brazil. In the 2019 report, 33 of the 52 educational institutions that offer graduate programs in economics in Brazil answered the survey. And 36 institutions answered the survey in the 2020 report.

[2]In the U.S., the CSWEP Annual Report collects data of about 250 U.S. departments since 1972. It has been published in one of the volumes of the American Economic Review: Papers & Proceedings (Lundberg, 2017). In the U.S., women held 28.6% of assistant professorships, while they accounted for only 14% of full professorships in 2017. In the same year in the U.K., Tenreyro (2017) - a report by the Royal Economic Society - finds that women represented 16.6% of full professors and 35% of assistant professors. And in Canada, CWEN (2017) shows that women represented 13.6% of full professors and 46.1% of assistant professors.

this academic profession, we investigate the decision to submit articles to the largest conference in the country (Brazilian Meeting of Economics, or ANPEC Meetings) by verifying whether the probability of submitting an article to the ANPEC Meeting, after having an article rejected the previous year differs by gender. In investigating this hypothesis, we seek to contribute to the literature on the high gender gap in the academy, especially in economics. We use a novel administrative panel data of researchers who submitted papers to the meeting from 2009 to 2017 and match the submissions data with web-scraped data about the researcher's résumés (Lattes CV).

Our findings suggest that women desist 5.9 percentage points (9%) more when having an article rejected than men. This result is robust for several specifications. It is also in line with other papers that find evidence that women give up competing more than men after failing (Goldin (2015); Buser and Yuan (2019)). We also find that the desistance effects are stronger for younger women, and that the quality of the undergraduate institution matters to determine the gap between women's and men's desistance.[3]We argue that higher quality institutions might self-select women that are more competitive. Nekby, Thoursie, and Vahtrik (2008) investigate a similar behaviour when analyzing the gender differences in a competitive environment. The authors find that in a large footrace in Sweden, where there is a self-selection of women in a male dominated environment, women are more likely to be confident/competitive. And within this group, performance improves equally for both genders in absolute terms.

This paper contributes to the literature on competitive behaviour by gender (Niederle and Vesterlund (2011); Flory, Leibbrandt, and List (2015); Flory, Gneezy, Leonard, and List (2018)).[4]Explanations for these behavioural differences vary depending on cultural and institutional matters. Gneezy, Leonard, and List (2009), for example, use experimental evidence to show that women raised in a matriarchal society are more avid to compete than men while the opposite was found for individuals raised in patriarchal societies. Booth, Fan, Meng, and Zhang (2019), in turn, find evidence that market

[3]The quality of the institution is measured by a national evaluation in Brazil.

[4]See Niederle and Vesterlund (2011) for a complete survey, and Flory et al. (2015) and Flory et al. (2018) for studies showing that women prefer to cooperate rather than compete in the U.S. and Malawi, respectively.

regimes, assumed to be more competitive, discourage women to compete by analyzing regions under mainly communist and market regimes in China.[5]

We also add to the literature that finds that women are more averse to losses, and therefore, react differently when they fail. This is one of the hypotheses behind the lower female participation in high-profile career positions. Buser and Yuan (2019) find that in a lab math competition, women are less likely than men to choose to keep competing after losing in the first or second rounds.[6] Also, Apostolova-Mihaylova, Cooper, Hoyt, and Marshall (2015) assess experimental evidence about undergraduate students at the University of Kentucky (U.S.) to show that women do better in a grade scheme in which points accumulate throughout the semester, while men do better in the situation where they start with the maximum grade and points are lost as the semester progresses.

Finally, we also relate to the literature on gender underrepresentation in economics. The gender disparities occur in higher career positions (CWEN (2017); Lundberg (2017); Tenreyro (2017); Valentova, Otta, Silva, and McElligott (2017)),[7] in participation of women in relevant conferences in economics (Chari and Goldsmith-Pinkham (2017); Hospido and Sanz (2019))[8], and in the research area (Chari & Goldsmith-Pinkham,

[5]Booth et al. (2019), in turn, carry out an experiment with individuals from different birth cohorts in China to select individuals who grew up with different social norms and different political and economic regimes (the communist era, especially during the Cultural Revolution, and after the economic reform and establishment of a market economy). The authors emphasize the role of propaganda and indoctrination in gender equality in the communist period, in addition to the greater appreciation of the work of all, for the difference in behavior of women.

[6]The authors also estimate the likelihood of girls who did not make it to the second round at the Dutch maths Olympics to try again next year and show that it decreases significantly when compared to men under the same conditions.

[7]Valentova et al. (2017) find that in 2013 and 2014, for the areas of "Engineering, Exact Sciences, Earth Sciences" and "Life Sciences", women scientists were more often represented among holders of the lowest productivity levels (level 2), while male scientists were most often found at higher levels (1A and 1B). Although this imbalance was not found in the areas of humanities and social sciences, in economics the behaviour was similar to that in the exact sciences. Of the 207 scholarships awarded in Economics by CNPq (National Council for Scientific and Technological Development), only 29 were for women. Lundberg (2017) shows that in economics departments in the U.S., the higher the career position, the lower the percentage of women was. Tenreyro (2017) reports a similar share of women in economics departments in the U.K. and CWEN (2017) in Canada.

[8]Chari and Goldsmith-Pinkham (2017) analyzes the representation of women economists in the programs of the NBER Summer Institute in the period 2001-2016, an annual conference – highly competitive – promoted by economists affiliated with the NBER (National Bureau of Economic Research). Hospido and Sanz (2019) investigate the gender difference in articles accepted for presentation at the European Economic Association Annual Congress (2015-2017), the Spanish Economic Association

2017).[9]

The paper is divided into five sections, including this introduction. Section 2 presents the data sources and assumptions to construct the final sample. Section 3 presents the empirical strategy to estimate the effects, while section 4 presents the main results and investigation of heterogeneous effects. Our final remarks are presented in Section 5.

2 Data

We use a novel database on articles submitted (accepted and rejected) to the Brazilian Meeting of Economics (ANPEC Meetings)[10]between 2007 and 2017. These meetings take place annually in December and researchers from different economic fields present their articles. Blinded peers evaluate submissions and an independent scientific committee selects the articles. Accepted articles for the ANPEC Meetings are available at the ANPEC website.

Data of articles submitted are confidential and were made available to us through spreadsheets by the ANPEC administration. This database contains detailed information about the submissions, such as the authors' and co-authors' names, the title of the work, the research area to which the work was submitted[11]and whether it was accepted or not.

Annual Meeting (2012-2017) and the Spring Meeting of Young Economists (2017). The authors conclude that female-authored papers were 3.2 percentage points (or 6.8 %) less likely to be accepted than male-authored papers.

[9]The share of women in finance and macro and international fields is much lower than in applied microeconomics.

[10]ANPEC is the Brazilian Association of Graduate Programs in Economics, and is the institution responsible for the national meetings in the area, as well as the national admission test for prospective master's students to study in associated or member postgraduate programs.

[11]At the ANPEC Meeting, until 2012, authors could submit articles in 12 different areas. However, in 2013 there was a change in the classification: Political Economy became a separate area from History of Economic Thought and Methodology. Thus, in order to make the comparison possible over the entire period of the database, we consider these two areas as one, according the model in effect until 2012. Therefore, we end up with the following classification: Area 1 - History of Economic Thought & Political Economy; Area 2 - Economic History; Area 3 - Macroeconomics, Monetary Economics and Finance; Area 4 - Public Sector Economics; Area 5 - Growth, Economic Development and Institutions; Area 6 - International Economy; Area 7 - Microeconomics, Quantitative Methods and Finance; Area 8 - Industrial and Technology Economics; Area 9 - Regional and Urban Economics; Area 10 - Agricultural

We restrict our sample to 2009 to 2017 to mantain data consistency.[12]

The original data do not identify the authors' gender. Hence, we had to build a gender variable by using a two-stage procedure using the authors' first names. First, we use data from the Brazilian Superior Electoral Court (TSE),[13] which provides electoral information for several years, containing the candidate's first name[14] and their respective gender, to construct a measure of probability for the name being identified as masculine or feminine. Second, we match this database with the submissions database. For names with a probability greater than 90% of being feminine (masculine), the author's gender was identified as woman (man).[15]

The full sample contains 9,972 articles, of which 40.7% were accepted, during a nine-year period (from 2009 to 2017). Table 1 displays the number of women authors who submitted their articles between 2009 and 2017, and how many of them presented their work at the Brazilian Meeting of Economics, even if as co-authors. The year 2016 had the highest acceptance rate, about 53% of women who applied had their articles accepted (women represented approximately 30% of the accepted authors in the conference in this year). The table also shows female participation in two different sets: (i) among authors who had their articles accepted; and (ii) among authors who submitted their articles. The historical average of women's participation among accepted and submitted articles was 26.0% and 29.3%, respectively. The share of women among authors with accepted articles was always smaller than the share of women among authors with submitted articles, presenting similar growth and decrease trends in both groups over the analyzed period.

and Environmental Economics; Area 11 - Health, Education and other applied topics & Economic Demography; Area 12 - Labor Economics.

[12] Appendix Table 1 presents the number of article submissions by authors that appear only once in the database and by year. The years of 2007 and 2008 were under-represented in the total submissions and, therefore, we excluded them from our analysis.

[13] As a robustness test, we also perform the same procedure using data from the Annual List of Social Information (RAIS), submitted by companies to the Brazilian government. There was adherence of 99.2% in the gender classification of RAIS and TSE.

[14] We use the names of all candidates for the elections between 2008 and 2016. When we could not find the name in the TSE data, or the probability of being feminine (masculine) was less than 90%, we manually assigned the gender using internet searches of the authors.

[15] Abrevaya and Hamermesh (2012), Hoekstra (2018) and Card, DellaVigna, Funk, and Iriberri (2020) use similar procedures to identify gender.

Additionally, we use the coding developed by Mena-Chalco and Cesar-Jr (2009), ScriptLattes, to obtain several individual covariates from the Lattes Curricula database (Lattes CV)[16] for 3,587 authors (75% of the 4,783 available names from 2009 to 2017) by matching the authors' full name. Lattes CV contains relevant variables, such as the institution from which the individual graduated, the number of advisories of graduate students (masters and doctorate), the number of published academic articles and the participation in other conferences.[17] Therefore, our final dataset refers to individuals with résumés in the Lattes CV database. Authors (or co-authors) without Lattes CV listings are mainly foreign researchers, authors with very common names (homonyms), or other individuals who did not follow an academic career (such as undergraduate students). The exclusion of foreign researchers and individuals who did not follow an academic career could bias our estimates due to potential self-selection. However, we show that the Lattes CV' sample is representative for the full sample (Tables 2 and 3).[18]

Table 3 also shows the female representation by research area. Areas that have the highest participation of women are Health, Education and other applied topics & Economic Demography, and Agricultural and Environmental Economics. Labor Economics and Industrial and Technology Economics have also a higher share of women than men. On the other hand, areas such as Macroeconomics, Monetary Economics and Finance, Economic History and Microeconomics, Quantitative Methods and Finance, present lower female participation among authors who presented their works at the meetings from 2009 to 2017.

In order to monitor authors over the years, it was necessary to consider all authors of the articles separately, i.e., regardless of the order in which their names appear in the article.[19] We identified each author with an anonymous ID number, to guarantee

[16]Lattes CV serves as an indicator of the participation of individuals in the Brazilian academic market.

[17]Most of our variables refer to the first year of our sample (2009) or are constructed for the panel (e.g., number of published articles per year).

[18]Table 2 compares statistics for the full sample and the Lattes CV sample (matched with the Lattes database). Table 3 displays the female representation in the areas in the complete sample and the one used for the estimates (of the individuals in which it was possible to make the exact matching with the Lattes database). The samples used in our estimates are representative of the total sample, as well as the representation of women in each area.

[19]There are authors who submitted more than one article per year. Hence, we created variables for

confidentiality. We end up with 3,587 authors in the nine-year period (2009-2017).

3 Empirical Strategy

To estimate if men and women have different probabilities of submitting an article to the ANPEC Meeting after having an article rejected the year before, we construct a panel data model relating the rejection with the desistance (dropout) variable ($dropout_{it}$) for each researcher i in year t. The dropout indicator equals one if individual i did not submit an article in year t after having an article (same or different) rejected in the previous year, and zero otherwise. The regression model includes the information on rejection in the previous year according to the following equation:

$$dropout_{it} = \beta_0 + \beta_1 rejection_{it-1} + \beta_2 rejection_{it-1} \times woman_i + X_{it}\theta + \alpha_i + \delta_t + \epsilon_{it} \tag{1}$$

in which $rejection_{it-1}$ is a binary variable that indicates whether individual i had a rejected article in $t-1$, $woman_i$ is a binary variable that indicates the gender of individual i, X_{it} is a vector of time-varying control variables for individual i in period t that we construct using Lattes CV data,[20] δ_t and α_i are year and individual fixed effects, respectively. Individual fixed effects control for time-invariant characteristics of individuals, such as socioeconomic status, innate abilities and quality of education, while year effects control for common aggregate shocks (fewer articles submitted in a specific year, or a more strict evaluation committee, for example).

We include the interaction terms to capture heterogeneity of the effects using variables that measure individuals' experience, area of research and institution of undergraduate studies. We consider different measures of experience that are extracted from the Lattes CV, such as whether individual i advises postgraduate students, or

the number of articles each author submitted per year and for the number of accepted articles.

[20] We use as control variables the accumulated number of publications, events participation and advisories.

has published an article. In addition, we estimate some variants of this specification (inclusion of controls, distinction of experience by gender, among others), to verify the robustness of the results.

4 Results

Main effects

Table 4 presents the estimated parameters of equation 1. Column (1) presents the OLS results, and columns (2) to (4) present the estimates considering the inclusion of fixed effects and control variables. Initially, all different specifications present similar estimated coefficients, both in magnitude and significance. We consider results in column (4) as our preferred specification.

The estimations from Table 4 bring evidence that having an article rejected in the previous year positively affects the probability of an author not submitting (dropping out) in the current year (by approximately 65 percentage points). When comparing the gender of rejected authors in $t-1$ and their probability of not submitting again in t (drop out), the rate for women is greater than for men, by about 5.9 percentage points. Our results are robust to the inclusion of other lagged periods[21] and when we compare acceptance behavior.[22]

Our results are in line with other papers in the literature. Buser and Yuan (2019) show that women are more likely than men to stop competing if they lose the Maths Olympiad in the Netherlands. Goldin (2015) also finds that men's choice of economics

[21] As a robustness test, we estimate equation 1 including rejection in other lagged periods (rejection in t-2, t-3 and t-4). In Appendix Table 2, we see that rejection in all previous periods increase the probability of drop outs, however the effect is higher for rejections in t-1. Also, the higher effect of rejection in drop outs for women is only statistically significant considering rejections in t-1.

[22] We also estimate a variation of equation 1 including acceptance in the previous period and the indicator of submission in t as outcome variable. Results are displayed in Appendix Table 3. We observe that the probability of men submitting an article in the subsequent period is always positive – both after having a paper rejected or accepted in the previous period – but higher when the paper is accepted in t-1. The same behaviour is not observed for women. The acceptance in t-1 does not influence the probability of submitting in t, while the rejection does impact.

as a major is less dissuaded than women when they underperform in the introductory principles course. We try to explore if there are differences within women groups in the context of ANPEC Meetings in Brazil in the next subsections.

Heterogeneous effects

We test if our results differ by levels of seniority. In this sense, we interact our main variables with proxy variables for the individuals' academic experience. We use different measures for experience and consider the experience in the baseline year (2009). To define our experience variables, first, we choose a dimension (e.g., supervising graduate students or publications); then we find the median value for this variable in 2009, excluding missing and null values; and, finally, we create a dummy variable for each author, equal to one if the author's experience measure is higher (more experienced) than the median value and zero otherwise (less experienced).

Table 5 presents the estimates. Each column considers a distinct measure for experience. In column (2), we consider as a proxy measure for experience supervising graduate students (advisories) and, in column (3), we consider publication of papers. No matter which measure of experience we use, the results are robust and indicate that the more experienced an author is, the less probable he/she might drop out after receiving a rejection in the previous year. The attenuating effect for rejection in dropouts ranges from 11 to 16 percentage points, depending on which experience measure we consider. In addition, we do not find a distinct effect between men and women, which suggests that academic experience impacts both genders equally.

We also investigate further by interacting the gender variable with a continuous variable that accounts for years since undergraduate studies, *year* (both in levels and squared). To do so, we estimate the following equation:

$$dropout_{it} = \beta_0 + \sum_{j=1}^{40}(\beta_{1j} rejection_{it-1} \times year_j + \beta_{2j} rejection_{it-1} \times woman_i \times year_j) +$$
$$+ \sum_{j=1}^{40}(\eta_{1j} rejection_{it-1} \times year_j^2 + \eta_{2j} rejection_{it-1} \times woman_i \times year_j^2) + X_{it}\theta + \alpha_i + \delta_t + \epsilon_{it} \quad (2)$$

Figure 1 presents the marginal effect, for men and women separately, of having an article rejected in period $t-1$ on the probability of dropping out in period t, by years since undergraduate studies. Here, although women are more likely then men to drop out after a rejection in all years, the difference is only statistically significant for younger researchers (authors holding an undergraduate degree for less than 10 years). This result reinforces the statement that more experienced authors are less impacted by a rejection in the previous period.

To improve understanding of the group of women who are more affected by a rejection, we investigate whether there is a difference in dropout rates after a rejection depending on the quality of the authors' undergraduate institution. As a proxy measure for the quality of the institution, we use CAPES[23] scores - we include in our regressions binary variables that identify each score obtained by the institution.

Table 6 displays the results by interacting the rejection variable with CAPES' scores; column (1) presents our main average results, column (2) presents results when we include dummy variables for each score interacted with a dummy variable that accounts for rejection in the past period, and column (3) presents results when we include a dummy variable that accounts for gender. Our regressions considers institutions with score 3 (lowest score) as baseline. Column (2) shows that the impact of rejection on dropouts is similar among authors who hold an undergraduate degree from institutions with different CAPES grades.

[23]CAPES is a Brazilian governmental agency (part of the Ministry of Education) that regulates and supports postgraduate education; it assesses postgraduate courses (Masters and PhD) in Brazil. The scale ranges 1 to 7 (7 being the highest score). Scores 1 and 2 imply disqualification of the course, hence we only analyze educational institutions with scores 3 to 7.

However, when we make a distinction by gender, column (3) indicates that women who hold a degree from institutions with higher CAPES scores (6 or 7) are less likely to drop out after a rejection than women who hold a degree from institutions with lower CAPES scores (below 5). Also, there is roughly no distinction between the probability of women and men dropping out after a rejection for authors who hold an undergraduate degree from institutions with score 6 or 7. This might be because institutions with higher CAPES scores, relative to those with lower CAPES scores, offer more encouragement to the pursuit of an academic career; or that women that hold an undergraduate degree from these institutions may be more used to competition, as the selection processes of these institutions are more challenging in general. Nekby et al. (2008) find similar results when analyzing gender behavior in a competitive environment. The authors find that in a large footrace in Sweden where there is self-selection of women in a male dominated environment, women are more likely to be confident/competitive. And, within this group, performance improves equally for both genders in absolute terms.

Finally, we also estimate results considering all different research areas of submission to ANPEC Meetings[24]. Table 7 presents these results. Here we observe that a rejection in period $t-1$ increases the probability of a dropout in period t for all different areas and with a similar magnitude (from 51 to 73 percentage points). Analyzed by gender, female gender increases the probability of dropping out after a rejection in some areas more than others. Women who submit articles in the area of Health, Education and other applied topics & Economic Demography present the highest probability of dropping out after a rejection (14.7 percentage points).

5 Conclusion

The low participation of women in academia is even more pronounced at higher career levels of all fields. In this paper, we look at the submissions of papers to the largest economic conference in Brazil to understand if these low participation rates might be

[24]For individuals who submitted more than one article per year in different areas, we consider the submission area as the mode of the research areas in the year. If there is more than one mode, we use the smallest mode.

partially determined by the fact that women desist more easily after a rejection than man do. We construct a novel panel of researchers with administrative data and web-scraped data to shed light on this issue. Our results reinforce the findings of the literature about the differences between men and women in situations of failure and rejection. Another important point is that young women are more likely to drop out of the career than men and that men and women from higher quality institutions have the same probability of giving up, suggesting that women from those institutions might be more confident and competitive. We find little evidence of gender differences by research area and believe this should be further investigated in future studies.

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Tables and Figures

Table 1: Female participation in ANPEC Meetings, 2009-2017.

year	# submissions	# women submissions	%	# accepted	# women accepted	%	% accepted/ submissions women	% accepted/ submissions total
2009	995	261	26.2%	420	104	24.8%	39.8%	42.2%
2010	1025	305	29.8%	345	86	24.9%	28.2%	33.7%
2011	1040	298	28.7%	461	119	25.8%	39.9%	44.3%
2012	1289	392	30.4%	461	116	25.2%	29.6%	35.8%
2013	1126	322	28.6%	453	119	26.3%	37.0%	40.2%
2014	1277	387	30.3%	481	120	24.9%	31.0%	37.7%
2015	1277	385	30.1%	488	127	26.0%	33.0%	38.2%
2016	916	272	29.7%	480	145	30.2%	53.3%	52.4%
2017	1027	299	29.1%	469	121	25.8%	40.5%	45.7%
Total	9972	2921	29.3%	4058	1057	26.0%	36.2%	40.7%

Table 2: Sample comparison, full sample vs. Lattes CV sample, 2009-2017.

	Full Sample	Lattes CV sample*
Total submissions	9,972	8,192
Female submissions	2,921	2,419
% female submissions	29.29%	29.53%
Accepted articles	4,058	3,331
Female accepted articles	1,057	871
% female accepted articles	26.05%	26.15%
% accepted/submissions (women)	36.19%	36.01%
% dropouts**	65.81%	63.32%
% female dropouts**	68.98%	68.16%

*authors with matched names in the Lattes platform.

**number of authors that did not submit in t after a rejection in t-1 versus the number of rejections in t-1.

Table 3: Female representation by area: Full sample vs. Lattes CV sample, 2009-2017.

	Total				Women			
	Full Sample		Samples with Lattes CV*		Full Sample		Samples with Lattes CV*	
Area								
History of Economic Thought and Methodology & Political Economy	410	8.60%	307	8.60%	96	6.23%	67	5.77%
Economic History	355	7.45%	266	7.45%	74	4.80%	53	4.57%
Macroeconomics, Monetary Economics and Finance	492	10.32%	368	10.31%	117	7.59%	87	7.49%
Public Sector Economics	384	8.06%	296	8.29%	117	7.59%	95	8.18%
Growth, Economic Development and Institutions	372	7.81%	282	7.90%	130	8.43%	95	8.18%
International Economics	411	8.62%	314	8.79%	120	7.78%	92	7.92%
Microeconomics, Quantitative Methods and Finance	440	9.23%	314	8.79%	127	8.24%	90	7.75%
Industrial Economics and Technology	394	8.27%	300	8.40%	142	9.21%	114	9.82%
Regional and Urban Economics	459	9.63%	358	10.03%	144	9.34%	113	9.73%
Agricultural and Environmental Economics	432	9.06%	311	8.71%	195	12.65%	144	12.40%
Health, Education and other applied topics & Economic Demography	468	9.82%	338	9.47%	219	14.20%	163	14.04%
Labor Economics	149	3.13%	117	3.28%	61	3.96%	48	4.13%
Total	4766		3571		1542		1161	

* Fully matched names using Lattes platform

Table 4: Rejection impact on dropouts of submissions to the ANPEC Meetings by gender, 2009-2017.

	(1)	(2)	(3)	(4)
Article rejected in t-1	0.6112***	0.6582***	0.6585***	0.6554***
	(0.0084)	(0.0090)	(0.0090)	(0.0092)
Article rejected in t-1 × Women	0.0704***	0.0608***	0.0610***	0.0590***
	(0.0145)	(0.0152)	(0.0152)	(0.0156)
Observations	36576	36576	36576	34497
R squared	0.601	0.637	0.638	0.633
F stat	4308.02	4418.96	916.29	669.13
Individual fixed effects		x	x	x
Year fixed effects			x	x
Control variables				x

Notes: *p<0.10; **p<0.05; *** p<0.01.

Column (1) was estimated with OLS.

All standard errors are clustered by individuals.

Control variables are accumulated numbers of publications, event participations and advisories.

Table 5: Rejection impact on dropouts of submissions to the ANPEC Meetings by individual experience and gender, 2009-2017.

	(1) Main	(2) Advisories	(3) Publications
Article rejected in t-1	0.6554***	0.6652***	0.6668***
	(0.0092)	(0.0093)	(0.0095)
Article rejected in t-1 × Women	0.0590***	0.0534***	0.0546***
	(0.0156)	(0.0158)	(0.0160)
Article rejected in t-1 × 𝟙 experience		-0.1664***	-0.1182***
		(0.0416)	(0.0320)
Article rejected in t-1 × 𝟙 experience × Women		0.0447	0.0066
		(0.0799)	(0.0642)
Observations	34497	34497	34497
R squared	0.633	0.634	0.634
F stat	669.13	590.56	586.01
Individual fixed effects	x	x	x
Year fixed effects	x	x	x
Control variables	x	x	x

Notes: *p<0.10; **p<0.05; *** p<0.01.

All standard errors are clustered by individuals.

Each column considers a different measure of experience.

Control variables are accumulated numbers of publications, event participations and advisories.

Table 6: Rejection impact on dropouts of submissions to the ANPEC Meetings by school score, 2009-2017.

	(1) Main	(2) By Center Score	(3) + Gender
Article rejected in t-1	0.6554***	0.6737***	0.6410***
	(0.0092)	(0.0202)	(0.0243)
Article rejected in t-1 × Women	0.0590***		0.1066**
	(0.0156)		(0.0429)
Article rejected in t-1 × score = 4		-0.0095	-0.0069
		(0.0274)	(0.0342)
Article rejected in t-1 × score = 5		-0.0171	-0.0132
		(0.0284)	(0.0341)
Article rejected in t-1 × score = 6 or 7		-0.0130	0.0192
		(0.0239)	(0.0289)
Article rejected in t-1 × score = 4 × Women			-0.0254
			(0.0568)
Article rejected in t-1 × score = 5 × Women			-0.0075
			(0.0598)
Article rejected in t-1 × score = 6 or 7 × Women			-0.1050**
			(0.0506)
Observations	34497	27027	27027
R squared	0.633	0.621	0.623
F stat	669.13	433.54	350.02
Individual fixed effects	x	x	x
Year fixed effects	x	x	x
Control variables	x	x	x

Notes: *p<0.10; **p<0.05; *** p<0.01.

We consider CAPES score as a proxy for quality of the undergraduate institution.

All standard errors are clustered by individuals.

Control variables are accumulated numbers of publications, event participation and advisories.

Table 7: Rejection impact on dropouts of submissions to the ANPEC Meetings by gender and research field, 2009-2017.

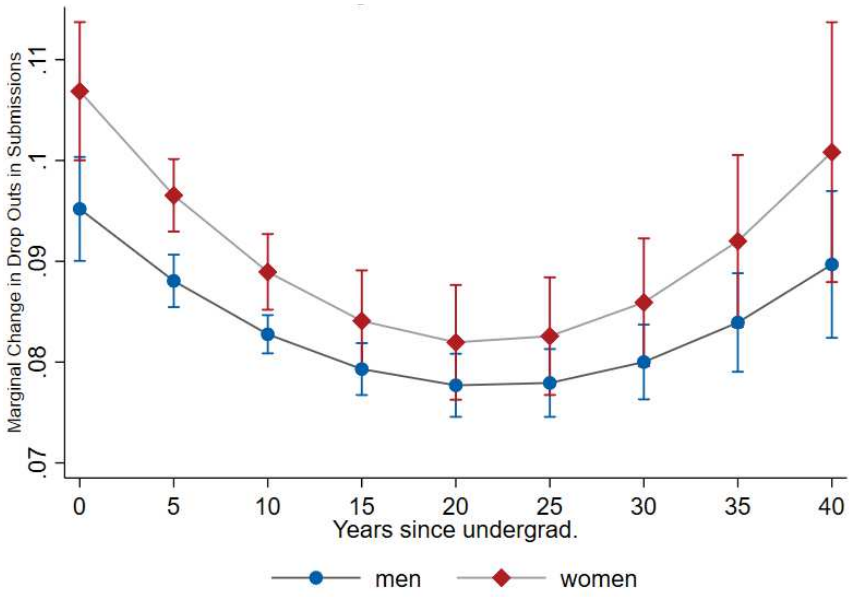
	(1) Main	(2) By Area	(3) + Experience
Article rejected in t-1	0.6554***		
	(0.0092)		
Article rejected in t-1 × Women	0.0590***		
	(0.0156)		
Article rejected in t-1 × Hist. of Econ. Thought & Political Ec.		0.6552***	0.6982***
		(0.0290)	(0.0409)
Article rejected in t-1 × Economic History		0.6610***	0.7234***
		(0.0497)	(0.0660)
Article rejected in t-1 × Macroeconomics, Monetary Economics and Finance		0.6669***	0.7295***
		(0.0243)	(0.0281)
Article rejected in t-1 × Public Sector Economics		0.6231***	0.7196***
		(0.0345)	(0.0404)
Article rejected in t-1 × Growth, Economic Development and Institutions		0.6287***	0.7290***
		(0.0311)	(0.0371)
Article rejected in t-1 × International Economics		0.5684***	0.6438***
		(0.0399)	(0.0479)
Article rejected in t-1 × Microeconomics, Quantitative Methods and Finances		0.7298***	0.8081***
		(0.0272)	(0.0324)
Article rejected in t-1 × Industrial Economics and Technology		0.7018***	0.8011***
		(0.0286)	(0.0327)
Article rejected in t-1 × Regional and Urban Economics		0.6059***	0.6838***
		(0.0331)	(0.0396)
Article rejected in t-1 × Agricultural and Environmental Economics		0.6878***	0.7690***
		(0.0275)	(0.0346)
Article rejected in t-1 ×Health, Educ. and other applied topics & Econ. Demography		0.5124***	0.6261***
		(0.0351)	(0.0444)
Article rejected in t-1 × Labor Economics		0.5238***	0.7066***
		(0.0417)	(0.0526)
Article rejected in t-1 × Hist. of Econ. Thought & Political Ec. × Women		0.1183**	0.1419**
		(0.0521)	(0.0661)
Article rejected in t-1 × Economic History × Women		0.1354	0.1752
		(0.1006)	(0.1099)
Article rejected in t-1 × Macroeconomics, Monetary Economics and Finance × Women		0.0054	-0.0349
		(0.0518)	(0.0548)
Article rejected in t-1 × Public Sector Economics × Women		0.0607	0.0124
		(0.0709)	(0.0782)
Article rejected in t-1 × Growth, Economic Development and Institutions × Women		0.0882*	0.0188
		(0.0482)	(0.0590)
Article rejected in t-1 × International Economics × Women		0.0824	0.0369
		(0.0623)	(0.0703)
Article rejected in t-1 × Microeconomics, Quantitative Methods and Finance × Women		0.1164**	0.0891*
		(0.0458)	(0.0485)
Article rejected in t-1 × Industrial Economics and Technology × Women		-0.0005	-0.0339
		(0.0453)	(0.0492)
Article rejected in t-1 × Regional and Urban Economics × Women		0.0620	0.0159
		(0.0576)	(0.0685)
Article rejected in t-1 × Agricultural and Environmental Economics × Women		0.0916*	0.0708
		(0.0501)	(0.0563)
Article rejected in t-1 × Health, Educ. and other applied topics & Econ. Demography × Women		0.1474***	0.1579***
		(0.0493)	(0.0575)
Article rejected in t-1 × Labor Economics × Women		0.1000*	0.0591
		(0.0587)	(0.0682)
Observations	34497	30447	30447
R squared	0.633	0.624	0.638
F stat	669.13	253.93	180.44
Individual fixed effects	x	x	x
Year fixed effects	x	x	x
Control variables	x	x	x
Control by experience			x

Notes: *p<0.10; **p<0.05; *** p<0.01.

All standard errors are clustered by individuals. Experienced individuals are those who advised graduate students in 2009.

Control variables are accumulated numbers of publications, number of participations in events and number of advisories concluded.

Figure 1: Marginal effect of rejection on dropouts by years since completion of undergraduate studies.



Appendix Tables

Table 1: Distribution of people that submitted only once, 2007-2017

year	total number	% of total	number of women	% women in year	number of men	% men in year
2007	27	1.6%	8	29.6%	19	70.4%
2008	0	0.0%	0	-	0	-
2009	156	9.1%	50	32.1%	106	67.9%
2010	161	9.4%	69	42.9%	92	57.1%
2011	156	9.1%	59	37.8%	97	62.2%
2012	223	13.0%	80	35.9%	143	64.1%
2013	169	9.9%	63	37.3%	106	62.7%
2014	217	12.7%	86	39.6%	131	60.4%
2015	223	13.0%	79	35.4%	144	64.6%
2016	150	8.8%	49	32.7%	101	67.3%
2017	228	13.3%	79	34.6%	149	65.4%
Total	**1710**	**100.0%**	**622**	**36.4%**	**1088**	**63.6%**

Table 2: Impact of lagged rejections on submissions, 2009-2017.

	(1)	(2)	(3)	(4)
Article rejected in t-1	0.6554***	0.6546***	0.6562***	0.6577***
	(0.0092)	(0.0092)	(0.0092)	(0.0092)
Article rejected in t-1 × Women	0.0590***	0.0594***	0.0589***	0.0582***
	(0.0156)	(0.0157)	(0.0157)	(0.0156)
Article rejected in t-2		0.0231***	0.0229***	0.0244***
		(0.0045)	(0.0045)	(0.0045)
Article rejected in t-2 × Women		0.0056	0.0058	0.0052
		(0.0078)	(0.0078)	(0.0078)
Article rejected in t-3			0.0187***	0.0186***
			(0.0044)	(0.0044)
Article rejected in t-3 × Women			-0.0065	-0.0063
			(0.0077)	(0.0077)
Article rejected in t-4				0.0170***
				(0.0044)
Article rejected in t-4 × Women				-0.0083
				(0.0079)
Observations	34497	34497	34497	34497
R squared	0.633	0.634	0.634	0.634
F stat	669.13	605.45	535.12	479.55
Individual fixed effects	x	x	x	x
Year fixed effects	x	x	x	x
Control variables	x	x	x	x

Notes: *p<0.10; **p<0.05; *** p<0.01.

All standard errors are clustered by individuals.

Control variables are accumulated numbers of publications, event participations and advisories.

Table 3: Impact of rejections and acceptances on submissions by gender, 2009-2017.

	(1)	(2)	(3)	(4)
Article rejected in t-1	0.2270***	0.0184**	0.0175**	0.0142*
	(0.0087)	(0.0083)	(0.0083)	(0.0083)
Article rejected in t-1 × Women	-0.0704***	-0.0267*	-0.0286**	-0.0284**
	(0.0145)	(0.0140)	(0.0140)	(0.0139)
Article accepted in t-1	0.4001***	0.0431***	0.0415***	0.0360***
	(0.0103)	(0.0117)	(0.0117)	(0.0116)
Article accepted in t-1 × Women	-0.0448**	-0.0067	-0.0070	-0.0075
	(0.0199)	(0.0207)	(0.0208)	(0.0207)
Observations	36576	36576	36576	36576
R squared	0.089	0.001	0.007	0.011
F stat	633.78	5.34	18.68	19.15
Individual fixed effects		x	x	x
Year fixed effects			x	x
Control variables				x

Notes: *p<0.10; **p<0.05; *** p<0.01.

As outcome we consider a dummy variable that indicates whether the author submitted an article in period t.

The reference values are authors that did not submit in t-1.

All standard errors are clustered by individuals.

Control variables are: accumulated numbers of publications, event participations and advisories.