

# Males Should Mail? Gender Discrimination in Access to Childcare<sup>†</sup>

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Women are much more involved in childcare than men, which is one of the main reasons for the persistent gender gaps in the labor market (see, e.g., Andresen and Nix 2022; Hermes et al. 2022). For instance, Gimenez-Nadal and Molina (2020) show that women spend more time than men on childcare activities in all 18 European countries they study (including Germany). Childcare activities involve more than just providing direct care for a child. They may also include tasks related to the organization and administration of childcare, such as coordinating childcare arrangements and communicating with educational institutions (e.g., Buzard, Gee, and Stoddard 2022). One solution to reduce the disproportionate amount of time that women spend on caregiving tasks is to utilize outside care options, such as a childcare center. However, the effectiveness of this solution may be limited if it is more challenging for women than men to realize alternative childcare arrangements.

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In this paper, we investigate one possible reason why the set of available childcare options might be smaller for women than men: discrimination against women when searching and applying for childcare. We conduct a large-scale field experiment in Germany in which we send emails from fictitious parents to 9,313 childcare centers. The email asks if the center has a slot available and how to apply for it. To causally identify gender discrimination in access to childcare, we randomly vary whether the email is sent from the child's mother or father.

We find evidence for discrimination against women in the process of applying for childcare. Responses to inquiries from mothers are shorter and less positive in tone (e.g., less encouraging and less helpful) than responses to inquiries from fathers. Intriguingly, the likelihood of receiving a response does not differ between fathers and mothers, highlighting the importance of going beyond response rates to identify more nuanced forms of (gender) discrimination. Furthermore, we document substantial regional heterogeneity in gender discrimination, which seems to be related to differences in prevailing gender norms.

## I. Experimental Design and Data

We conducted our study in Germany, where childcare for children under three years of age (i.e., early childcare) is offered universally. Every child above the age of one has a legal entitlement to a childcare slot. In reality, however, many families are unable to secure a slot for their child due to excess demand (Jessen, Schmitz, and Waights 2020). Moreover, the childcare admission process is decentralized, and admission decisions are typically made by childcare center managers themselves, often without binding or transparent admission criteria (see Hermes et al. 2021 for institutional details).

In the experiment, we sent emails from fictitious parents to early childcare centers, drafted based on actual emails that we received confidentially from childcare centers.<sup>1</sup> The email asked (i) if there is a slot available in the center and (ii) how to apply (see online Appendix Figure A1). To signal the parent's gender, we experimentally varied the first name of the fictitious sender of the email: *Andreas* and *Sebastian* indicated a male sender, while *Stefanie* and *Christina* indicated a female sender.<sup>2</sup> Combining these first names with one of the two most common last names in Germany (*Schmidt* or *Müller*) resulted in eight different first-last name combinations (four female and four male).<sup>3</sup> We randomly selected one of these names for each email.

In March 2021, we sent emails from eight different email accounts (one for each name) to a total of 9,313 childcare centers for children under the age of three (approximately 30 percent of all centers for children in this age group in Germany). The sample was drawn from a comprehensive, commercially available dataset containing various information about childcare centers, including their email addresses (see Hermes et al. 2023 for implementation details). Online Appendix Table A1 presents sample characteristics and shows that all characteristics are well balanced across experimental groups.

Our main outcomes are a binary indicator of whether a childcare center responded to the email (*Response Rate*), whether the response has a string length above the median (*Long Response*), and several measures of the content of the response. The following content measures were obtained from manual ratings conducted by five independent research assistants (blind to treatment; see Hermes et al. 2023 for a description of the rating process): whether the response (i) included an offer for a childcare slot (*Slot Offer*), (ii) included an offer to put the

family on a waiting list (*Waiting List*), (iii) was perceived as helpful (*Helpful*), and (iv) was perceived as encouraging (*Encouraging*). Also, the raters were asked if they would (v) recommend a befriended family to apply for a slot at the responding childcare center (*Recommended*). Email content outcomes are coded as binary measures taking a value of one if three or more raters agree that an email falls into a specific category and zero otherwise. To ameliorate concerns about selection into response, *Long Response* and the content outcomes are unconditional on whether or not a childcare center responds.

## II. Results

Figure 1 presents the effects of our treatment—messages indicating a female sender—on different outcome measures. The figure depicts the coefficients of OLS regressions of each outcome on a treatment indicator, which takes a value of one if the email was sent by a woman and zero if the email was sent by a man. Estimations do not include any controls. We find that women are discriminated against when trying to access childcare, as treatment effects are negative for all outcomes. While effects on response rates, slot offers, and waiting list offers do not reach statistical significance, treatment effects on all other outcomes are significant at the 5 percent level or better. First, women are 2.6 percentage points (pp) less likely to receive long responses ( $p = 0.005$ ), which represents a treatment effect of  $-8.9$  percent when scaled by the control-group mean.<sup>4</sup> Second, women receive 2.5 pp fewer helpful emails ( $p = 0.013$ ) and 2.1 pp fewer encouraging emails ( $p = 0.005$ ), which corresponds to treatment effects of  $-6.9$  percent and  $-12.6$  percent, respectively. Third, emails to women are 2.4 pp (or 5.5 percent) less likely to induce raters to recommend applying to the responding childcare center ( $p = 0.021$ ).<sup>5</sup>

<sup>1</sup>Emails are a common way for parents to contact childcare centers: according to a survey with more than 400 childcare center managers in Germany, 85 percent frequently receive emails from parents (on average, 3.5 emails per week; see Hermes et al. 2023 for details).

<sup>2</sup>We used a list provided by the Society of the German Language (GfdS) to select the two most common male and female first names of the 1986 birth cohort (<https://gfdS.de/vornamen/beliebtteste-vornamen/>).

<sup>3</sup>In this paper, we focus on native German names. In Hermes et al. (2023), we study discrimination against parents with names that signal a migration background.

<sup>4</sup>Using response length in number of characters as an outcome, the treatment effect amounts to  $-16.4$  characters ( $p = 0.010$ ), which is equivalent to 5.3 percent shorter emails sent to women.

<sup>5</sup>Effects are robust to including the control variables of the preregistered specification in Hermes et al. (2023), to estimating probit models, to controlling for the zip code of the childcare center, and to conditioning on response (i.e., considering only the subsample of emails for which we received a response).

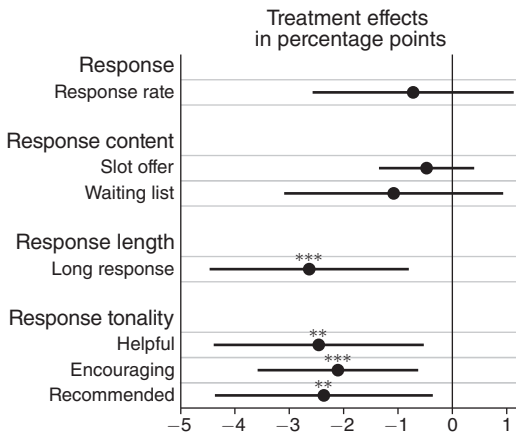


FIGURE 1. EFFECTS OF EMAIL FROM A WOMAN ON RESPONSE RATE AND RESPONSE CHARACTERISTICS

*Notes:* Figure shows treatment effects—that is, effects of an email from a woman rather than a man—on various outcome measures. We estimate OLS models without control variables; see online Appendix Table A2 for corresponding regression table. *Response Rate* is an indicator for whether or not a childcare center responded to the parent’s email. All remaining outcomes are unconditional on response. For instance, if the outcome is an indicator for whether or not a response included a “slot offer,” then a 1 indicates that the childcare center responded and offered a childcare slot, while a 0 indicates either that the center’s response did not contain a slot offer or that the center did not respond at all. Error bars show 95 percent confidence intervals based on robust standard errors.

Our results provide evidence for a subtle form of discrimination against women, which is not reflected in response rates but in the content and tone of responses. Such discrimination would go unnoticed when focusing on response rates alone, as is common in correspondence studies, and potentially imposes high costs on women. Obtaining information on application details from the childcare centers is key for parents to succeed in the complex, nontransparent, and decentralized application process for a childcare slot. Shorter, less helpful, less encouraging, and generally less positive responses may inhibit this information acquisition, which in turn might result in the family not applying to this center (or even giving up on applying for childcare at all). Hermes et al. (2021) document that misinformation about the childcare application process is widespread among parents, especially among

disadvantaged families.<sup>6</sup> Given that a substantial share of parents are poorly informed about childcare, not receiving informative answers may ultimately reduce the likelihood that families are able to enroll their child in childcare.

Having established that women experience significant discrimination when searching and applying for childcare, it is important to investigate the causes of such discrimination. Our rich experimental data allow us to reject a number of plausible explanations. First, by design, we eliminate the possibility that childcare center managers discriminate against women because they believe that they are more likely to be *single parents*, since our email signals the presence of more than one parent. Second, the treatment effects do not differ by whether or not the email includes a randomized signal that the sender has a bachelor’s degree, which implies that discrimination cannot be explained by beliefs about differences in the *educational background* of women compared to men. Third, discrimination does not vary by the *gender of the childcare center manager replying*. While more than 90 percent of the managers are female, the level of discrimination is similar for male and female managers.<sup>7</sup>

However, the fact that the level of discrimination varies strongly across regions in Germany may provide insights into its underlying causes. In particular, we investigate whether discrimination is stronger in regions with more traditional gender norms. Based on the ideas that gender norms are more conservative in regions with a religious population and that norms are especially strong in homogeneous groups (e.g., Bicchieri et al. 2022), we test whether discrimination is more pronounced in municipalities with a confessional majority (Catholic or Protestant). We find that, on average, discrimination against women only occurs in municipalities with a

<sup>6</sup>Drawing on a survey of more than 600 parents with children below the age of one, Hermes et al. (2021) find that one-quarter of parents are not aware of their legal entitlement to childcare. Almost half of parents do not know that childcare is free in their city once the child turns two years old, and four out of ten parents (incorrectly) believe that they are legally obligated to choose the nearest childcare center for their children.

<sup>7</sup>In addition, we randomly varied the gender of the child referenced in the email. The level of discrimination does not depend on whether parents search for a childcare slot for a son or daughter.

confessional majority, which make up 30 percent of our sample (see online Appendix Figure A2). In these municipalities, women receive 3.4 pp fewer responses than men ( $p = 0.050$ ), corresponding to 4.4 percent of the response rate in the control group. Women are also significantly less likely to receive a slot offer ( $-2.0$  pp), a long email response ( $-6.2$  pp), a helpful email ( $-5.0$  pp), an encouraging email ( $-4.0$  pp), or an email that leads to a recommendation ( $-5.7$  pp). Consistently, we find that discrimination against women by church-run childcare centers is particularly pronounced in municipalities with a confessional majority.

Our results suggest that prevailing gender norms play an important role in explaining why women are discriminated against when seeking a childcare slot. However, while this finding seems intuitively plausible, it is important to note that we do not find strong treatment effect heterogeneities when using other, more aggregated, measures of gender norms, such as the conservative vote share in a constituency, measures of the gender pay gap in a county, or the share of female representatives in a county council.

### III. Conclusion

We conduct a nationwide field experiment to examine whether women are discriminated against when searching and applying for childcare. While response rates do not differ by gender, women receive significantly shorter and less positive responses than men. Such gender discrimination in the process of applying for childcare implies that women's options for childcare arrangements are more limited compared to men. In consequence, women may have to devote more time and effort to securing childcare in order to counteract the negative effects of discrimination, which could be better spent on activities that are more productive for both the individual and society as a whole. If women are less able than men to substitute their own childcare responsibilities with care provided at childcare centers, this likely contributes to the persistence of gender gaps in caregiving responsibilities (Gimenez-Nadal and Molina 2020) and in the labor market more generally (Bertrand 2020).

However, the actual societal costs of discrimination against women in access to childcare

detected in this paper would be negligible if parents anticipated such discrimination and avoided it by having the father take responsibility for the application process. To see whether the costs of discrimination are economically relevant, we conducted a supplementary general population survey with about 700 individuals. The majority (57 percent) of respondents who had applied for childcare reported that the mother was mainly responsible for the process of applying for childcare, while only 9 percent reported that the father was mainly responsible. Combined with the results from our study, this finding suggests that discrimination against women is widespread among *actual* applicants for childcare, imposing economically meaningful costs on women who try to reduce their caregiving responsibilities.<sup>8</sup>

From a policy perspective, our research suggests that the existing system for enrolling children in childcare in Germany is not ideal. Similar to how other countries handle admissions for educational programs (see, e.g., Bergman and McFarlin 2018, for evidence from the United States), the process of applying for childcare in Germany often requires communication with the childcare center before submitting an application. This informal, preapplication communication allows for the selective provision of application information, and thus for the discrimination we document in this paper, to occur. However, the general design of the admission process in Germany also makes discrimination in actual admission decisions possible. These decisions are typically made by the manager of the individual childcare center without transparent or binding admission criteria. Centralizing and simplifying the admission process and implementing clear, universal admission criteria would help to reduce the risk of discrimination in accessing childcare and mitigate the negative impacts on society that can result from discriminatory practices.

<sup>8</sup>In addition, we asked survey respondents to predict whether childcare center managers are more supportive toward women or toward men in the process of applying for childcare. The majority expected childcare center managers to favor women over men. This indicates that the general population believes that women are subject to *positive discrimination*, making our findings particularly relevant in correcting these false beliefs.

## REFERENCES

- Andresen, Martin Eckhoff, and Emily Nix.** 2022. "What Causes the Child Penalty? Evidence from Adopting and Same Sex Couples." *Journal of Labor Economics* 40 (4): 971–1004.
- Bergman, Peter, and Isaac McFarlin.** 2018. "Education for All? A Nationwide Audit Study of School Choice." NBER Working Paper 25396.
- Bertrand, Marianne.** 2020. "Gender in the Twenty-First Century." *AEA Papers and Proceedings* 110: 1–24.
- Bicchieri, Cristina, Eugen Dimant, Simon Gächter, and Daniele Nosenzo.** 2022. "Social Proximity and the Erosion of Norm Compliance." *Games and Economic Behavior* 132: 59–72.
- Buzard, Kristy, Laura K. Gee, and Olga Stoddard.** 2022. "Who Ya Gonna Call? Gender Inequality in the Demand for Parental Involvement." Unpublished.
- Gimenz-Nadal, Jose Ignacio, and Jose Alberto Molina.** 2020. "The Gender Gap in Time Allocation in Europe." IZA Discussion Paper 13461.
- Hermes, Henning, Philipp Lergetporer, Frauke Peter, and Simon Wiederhold.** 2021. "Behavioral Barriers and the Socioeconomic Gap in Child Care Enrollment." CESifo Working Paper 9282.
- Hermes, Henning, Philipp Lergetporer, Frauke Peter, and Simon Wiederhold.** 2022. "Early Child Care and Labor Supply of Lower-SES Mothers: A Randomized Controlled Trial." CESifo Working Paper 10178.
- Hermes, Henning, Philipp Lergetporer, Frauke Peter, and Simon Wiederhold.** 2023. "Discrimination on the Child Care Market: A Nationwide Field Experiment." Unpublished.
- Jessen, Jonas, Sophia Schmitz, and Sevrin Waights.** 2020. "Understanding Day Care Enrollment Gaps." *Journal of Public Economics* 190: 104252.