

# Gender Gap and Anti-refugee Hate Crime: An Analysis of the Relationship\*

Replication of ‘Hate Crimes and Gender Imbalances Fears over Mate Competition and Violence against Refugees’(Dancygier, Egami, Jamal, Rischke, 2021)

Xu Qi, Yichen Shi, Yixuan Yao

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As the number of refugees around the world increases, anti-refugee violence has become a pressing issue. We argue that local men’s fear that refugees pose a threat in competition for female mates is a key factor of these hate crimes. Analysing the dataset on the number of hate crimes and gender gaps across Germany, we argue that hate crimes against refugees rise in cities where men face a disadvantage in the local mating market. Then we used survey dataset to analyze German perceptions of refugees, confirming that support for such hate crimes increases when men fear that refugees make finding a female partner more difficult. We conclude that while hate crimes are not exclusively due to mate competition, it is important to include this factor in order to gain a more comprehensive understanding of the relationship between hate crimes and migration.

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\*Code and data are available at: [https://github.com/xuqi2002/gender\\_gap\\_and\\_hate\\_crime](https://github.com/xuqi2002/gender_gap_and_hate_crime). A replication of various aspects in this paper are available at:

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## Introduction

Hate crime is a prejudice-motivated crime, which occurs when a perpetrator targets a victim because of their physical appearance or perceived membership of a certain social group (Skoczylis and Andrews 2022). The number of hate crimes is on the rise globally, the number of hate crimes reported by police in Canada rose from 2,646 incidents in 2020 to 3,360 in 2021, a 27% increase. This finding follows a 36% increase in 2020 (Government of Canada 2023). And hate crimes are also a pressing issue in Germany, especially against refugees, a group that is often the target of violence.

What explains the upsurge in the incidence of hate crimes? A number of existing studies point to the disruption caused by modernization and social change or, more directly, the influx of ethnic and racial minorities and the cultural and economic conflicts it can trigger (R. M. Dancygier and Green 2010). While each of these factors is important, in this article we highlight one that may have been underestimated until now: the concern that the arrival of male outsiders poses a threat to local men in competition for female partners. In particular, perceived competition for mates may trigger hate crimes against refugees in places where the gender gap is large.

In many cases, the immigrant population is characterized by a skewed sex ratio, with many more men than women (Dyson 2012). This situation also characterized the migrant population that entered Germany in the mid-2010s, when the majority of the more than one million refugees from the Middle East were young men. In addition to concerns about economy and security, there are also many Germans who fear that these young single men are potential competitors in the dating and marriage market. For example, a German nicknamed Mustermann (2017) stated in his blog: “The large-scale settlement of refugee men will make it very difficult for hundreds of thousands of our sons to gain experience with the opposite sex...for many of them a fulfilling partnership may be blocked off completely.” And this type of concern is very likely to contribute to an increase in anti-refugee hate crimes in Germany.

Collecting relevant data is a massive work. Fortunately, the paper “Hate Crimes and Gender Imbalances: Fears over Mate Competition and Violence against Refugees” by R. Dancygier et al. (2021) examined and analyzed this issue, providing a useful resource for us to replicate. We replicated this paper and focused on the following three questions: \* What is the relationship between gender gap and anti-refugee hate crime? \* Do men living with a large gender gap perceive mate competition?? \* Do people’s thoughts support hate crimes against refugees?

## Data

### Data Source

This paper replicates crime, gender gap and survey data. The crime and gender gap data of Germany in 2015 was collected by authors of original paper through local police, the press, victim organizations, reports by the German Federal Office of Criminal Investigations, as well as government responses to parliamentary inquiries (R. Dancygier et al. 2021). And the survey data was collected by authors of original paper with a survey firm called “Respondi”, it consists of four waves from September 2016 to December 2017. (R. Dancygier et al. 2021)

### Data Processing and analysis

We use the statistical programming software R (R Core Team 2023), with additional support packages including Tidyverse (Wickham et al. 2019), ggplot2 (Wickham 2016), haven (Wickham, Miller, and Smith 2023), readr (Wickham, Hester, and Bryan 2024), knitr (Xie 2014), dplyr (Wickham et al. 2023) readstata13 (Garbuszus and Jeworutzki 2023), MASS (Venables and Ripley 2002), Sandwich (Zeileis, Köll, and Graham 2020), lmtest (Zeileis and Hothorn 2002), pBrackets (Schulz 2021), stargazer (Hlavac 2022) and list (Blair and Imai 2010).

## Result

Figure 1 shows the relationship between hate crimes against refugees and the overall gender gap in five cities in Germany in 2015. The authors did not disclose the names of the five German cities, but used codes instead. It can be clearly seen that cities with a higher gender gap have a higher number of crimes. The city coded 01001 has a gender gap of 1.179, while it had 928 hate crimes in 2015. In contrast, city 01051, which has a gender gap of 1.045, had only 355 hate crimes in 2015. 01003 has the most balanced gender gap at 1.009, and it also has the lowest number of hate crimes at 213. The correlation above suggests that the gender gap can incite hate crimes, but it fails to speak to a central question: are men living in areas where men face greater barriers in the mating market (a large gender gap) really more likely to perceive competition between German and refugee men?

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?@fig-2 shows the proportion of individuals in different groups of males experiencing mating competition. Each graph shows data for a diverse group: all ages of males, males aged 18-29 years, males aged 30-39 years, and males aged 40-49 years. We can note that the p-value for all age groups is 0.06, which is greater than 0.05, meaning that there is no strong evidence that an increase in the number of males in the overall age group leads to a rise in the perception

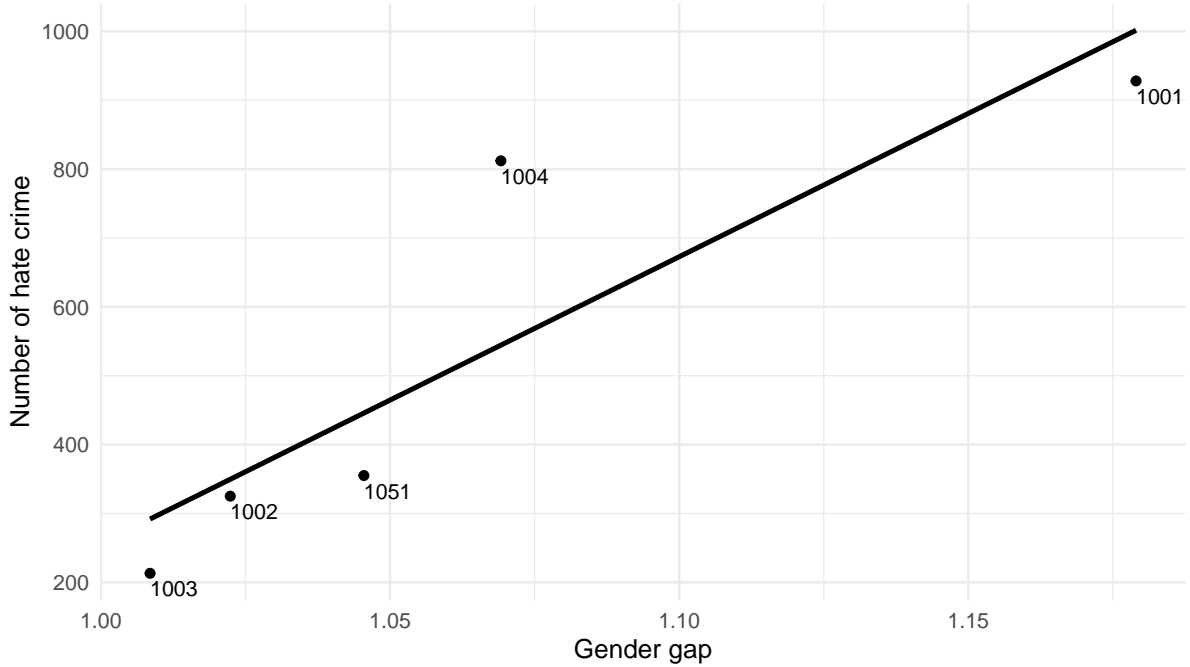


Figure 1: The Relationship Between Gender Differences and Refugee Hate Crimes - Germany 2015

of mating competition in all age groups. However, the p-values for the 18-29, 30-39, and 40-49 age groups are all 0, which is statistically significant, suggesting that the greater the number of males, the greater the sense of mating competition. For males, the p-value was 0.40 between the first and second quartiles and 0.22 between the second and third quartiles. There was no significant difference in the sense of mating competition for younger males (18-29 years old) between the first and second quartiles (p-value of 0.66) or between the second and third quartiles (p-value of 0.52). This implies no significant difference in the perception of competition at lower male population densities. For middle-aged men (30-39 years), the p-value of 0.05 between the first and second quartiles and 0.01 between the second and third quartiles is more significant. For older men (40-49 years), the p-values for the first and second quartiles and the second and third quartiles were small, implying that they all perceived competition for mates to increase with each additional quartile of excess males.

Figure 2 is a bar plot showing the attitudes of respondents towards refugee violation under different trials(list experiment and direct questions). The vertical axis of this plot represents the support of the respondents for refugee violation, with larger values indicating greater support from the respondents and smaller values indicating greater opposition from the respondents. The horizontal axis represents the content of different experimental methods and problems. The height of the bar represents the average support, and the straight line on the bar represents the 95% confidence interval of the average support. The first red bar on the left is

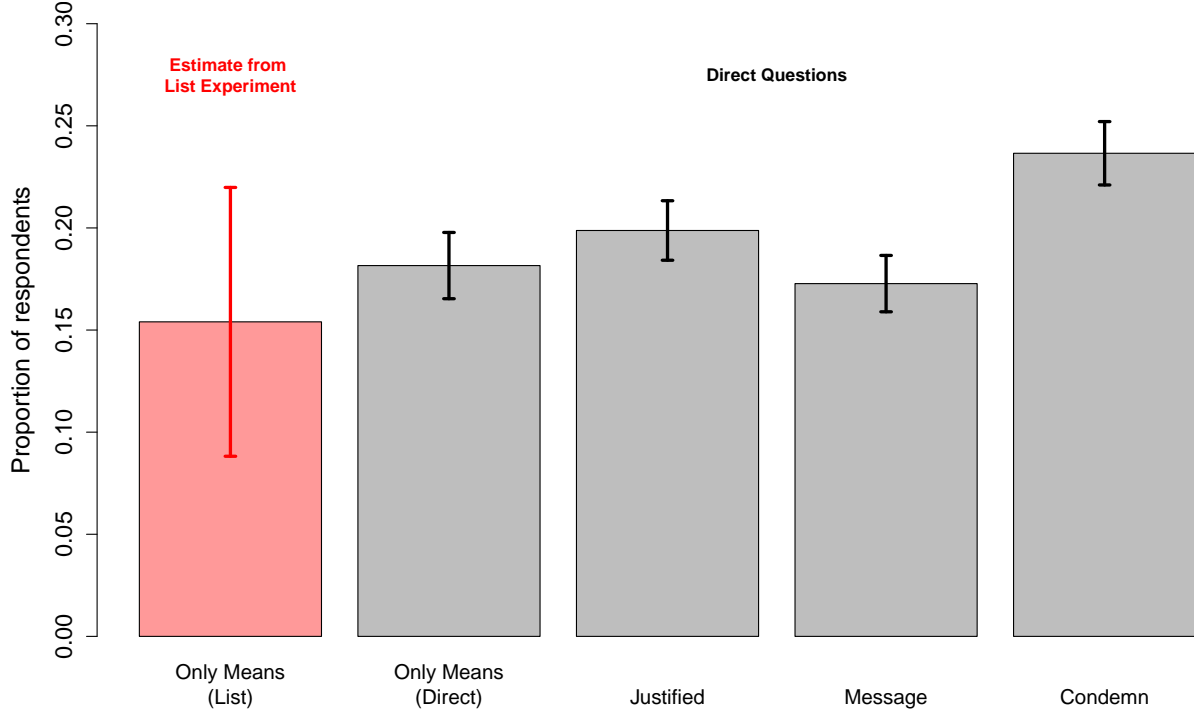


Figure 2: Attitudes of Respondents under Different Trials

the list experimental method, while the other four gray bars are the direct problem method. From the plot, it can be seen that the average support of the list experiment( violence is sometimes the only means that citizens have to get the attention of German politicians) is 0.1540133, with a standard error of 0.033579464; The first gray bar on the left represent the support of the respondents for violence as the only means for citizens to receive attention from German politicians, with an average support of 0.1815668 and a standard error of 0.008277136; The second gray bar on the left indicates the legitimacy of the participant's hostility towards refugees, with an average support of 0.1987513 and a standard error of 0.007433471; The third gray bar on the left represents the necessary level of support for the attack on the refugee home, with an average level of support of 0.1727367 and a standard error of 0.007041533; The fourth gray bar on the left represents the level of support from the participants for politicians not condemning attacks on refugees more strongly. The average level of support is 0.2365591, with a standard error of 0.007916087.

## Discussion

### Relationship between gender gap and refugee violence

The study found that cities with larger gender gaps (those with a higher proportion of males) had more violence against refugees, highlighting the complex relationships between gender demographics and social behaviors. This correlation suggests that the gender composition of a community can significantly influence the incidence of hate crimes and violence, especially against vulnerable groups such as refugees.

There can be a variety of factors that contribute to this phenomenon. For example, the social dominance theory. According to Zhirkov (2021), this theory posits that societies with higher levels of male dominance may foster social hierarchies that legitimize aggression towards out-groups such as refugees. A higher proportion of males might correlate with stronger in-group preferences and a greater propensity for out-group hostility, leading to increased violence against perceived outsiders. In addition to this, the traditional male emphasis on hierarchy and dominance may contribute to a cultural climate that condones or even encourages violence as a means of resolving conflict or asserting control. In the context of the prevalence of these norms, an over representation of men may exacerbate the propensity for violence against a refugee who is perceived as a threat or challenge to the social order. Goodkind et al. (2020) also mention a very key possible cause of Economic and Social Stressors. They argue that gender imbalance affects community cohesion and the ability to empathize with out-groups. Communities with more balanced gender ratios may exhibit higher levels of social cohesion and collective efficacy, which is associated with lower rates of violence.

However, we believe the most likely reason is male competition. In Germany, the notion of male refugees entering into romantic relationships with women has received a great deal of attention in a variety of media outlets, ranging from the curious to the downright hostile. We believe that the prospect of refugee-native partner competition may create or exacerbate resentment toward refugees, including support for hate crimes. In fact, a significant number of Germans do believe that refugees make it more difficult for German men to find female partners. According to Belchem (2014), the current situation in Germany reflects a more general phenomenon in which male members of ethnically foreign races are intimidated and sometimes attacked for romantic relationships with German women.

In general, Figure 1 and related data and background can justify our need to consider mate competition as an important factor in the increase in refugee violence. A preliminary conclusion can be drawn that the number of anti-refugee hate crimes occurring is also higher in areas where mate competition is relatively high. In support of the argument that concerns about mating prospects motivate some people to support violence against refugees, we need to be informed about attitudes at the individual level, and this is done through further analysis and survey by the original paper.

## **Individuals Living in Municipalities with a Higher Degree of Excess Males Perceive More Mate Competition**

When all age groups are combined, perceptions of mate competition do not change significantly across triplicates for the entire population. These plots suggest that age may moderate how the ratio of males to females in a population affects perceptions of mate competition and that this effect is more pronounced in older males.

## **A significant proportion of respondents condone violence against refugees and are not afraid to say so**

This article compares the attitudes of respondents towards refugee violence through a list experiment and direct questions. The main purpose of the list experiment is to eliminate social desirability bias, which means that when questionnaire questions involve sensitive issues, respondents deliberately hide their true thoughts in order to conform to social norms. From the analysis results in Figure 2, we can see that in the case of directly asking questions, the respondents have a relatively high level of support for refugee violence, which may not be their true thoughts. However, when we use the list experiment method, we can find that the respondents actually do not have such strong opposition to refugee violence. This indicates that using the list experiment method to analyze refugee violence is more accurate. This is because by directly asking the interviewee, they may hide their true thoughts, and using a list experiment method is easier to obtain their true thoughts. But we also found that the confidence interval of the list experiment is relatively large, which may be due to the number of respondents. Adding a certain number of respondents may solve this problem.

## **Conclusion**

This paper pays close attention to this complexity in laying out the various pathways between gender imbalances and forms of anti-refugee violence with a focus on Germany. It summarises the key results of an empirically grounded study. These results use survey data and statistical correlations to show that the ratio of local men to women especially among refugees, is a key factor that causes hate crime against refugees to escalate. The connection is meant to follow from mate-competition theory, which suggests that, when the number of men increases relative to the number of women, it creates more intense rivalry for women among local men as sexual partners. This, in turn, leads to increased aggressive behaviour and violence. They are important to support these intricate relationship between the variable in research using graphical representation too.

Another point emphasizing in the paper is the complex nature of the public attitude towards the refugees which might strongly vary given that the issue is represented differently in different kind of surveys. This probably means that some of the subconscious and social prejudices

and beliefs are more vulnerable than thought initially and are easily influenced by the prevailing contemporary opinion and also probing dialogues surrounding the refugees. The points demonstrate the necessity of a comprehensive strategy to combat the anti-refugee violence. Different dimensions such as the socio-economic factors and also deep-seated psychological and social issues have to be taken into consideration.

Briefly, this research shows why incorporating the gender dynamics and also the discontents related to men bringing in the dangerous rivals into the hate crime analysis matter. In order to achieve this, it equally encourages more knowledge-based and sensitive policy measures and also community initiatives that are designed to hinder the violence against the refugees. We think there should be a comprehensive approach that embraces the influence of the socio-demographics alongside psychological predispositions, and social narratives to delve deeper to provide a solution that will resolve the causes of such violence and fabricate a society that poses a high threshold of inclusion and empathy.

## References

- Belchem, John. 2014. *Before the Windrush: Race Relations in Twentieth-Century Liverpool*. Oxford University Press.
- Blair, Graeme, and Kosuke Imai. 2010. *list: Statistical Methods for the Item Count Technique and List Experiment*. Available at The Comprehensive R Archive Network (CRAN). <https://CRAN.R-project.org/package=list>.
- Dancygier, Rafaela M, and Donald P Green. 2010. "Hate Crime." *SAGE Handbook of Prejudice, Stereotyping and Discrimination*, 294–311.
- Dancygier, Rafaela, Naoki Egami, Amaney Jamal, and Ramona Rischke. 2021. "Hate Crimes and Gender Imbalances: Fears over Mate Competition and Violence Against Refugees." *American Journal of Political Science* 66 (2): 501–15. <https://doi.org/10.1111/ajps.12595>.
- Dyson, Tim. 2012. "Causes and Consequences of Skewed Sex Ratios." *Annual Review of Sociology* 38: 443–61.
- Garbuszus, Jan Marvin, and Sebastian Jeworutzki. 2023. *Readstata13: Import 'Stata' Data Files*. <https://CRAN.R-project.org/package=readstata13>.
- Goodkind, Jessica, Julieta Ferrera, David Lardier, Julia Meredith Hess, and R. Neil Greene. 2020. "A Mixed-Method Study of the Effects of Post-Migration Economic Stressors on the Mental Health of Recently Resettled Refugees." *Society and Mental Health* 11 (3): 217–35. <https://doi.org/10.1177/2156869320973446>.
- Government of Canada, Statistics Canada. 2023. "Police-Reported Hate Crime, 2021." *The Daily* -. <https://www150.statcan.gc.ca/n1/daily-quotidien/230322/dq230322a-eng.htm>.
- Hlavac, Marek. 2022. *Stargazer: Well-Formatted Regression and Summary Statistics Tables*. Bratislava, Slovakia: Social Policy Institute. <https://CRAN.R-project.org/package=stargazer>.
- Mustermann. 2017. *Männer Ohne Frauen - Missverhältnis Der Geschlechter Bei ...* <http://neuland.mustermann.org/migration/statistik-anteil-maenner-frauen.php>.



- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Schulz, Andreas. 2021. *pBrackets: Plot Brackets*. <https://CRAN.R-project.org/package=pBrackets>.
- Skoczylis, Joshua, and Sam Andrews. 2022. “Strain Theory, Resilience, and Far-Right Extremism: The Impact of Gender, Life Experiences and the Internet.” *Critical Studies on Terrorism* 15 (1): 143–68. <https://doi.org/10.1080/17539153.2022.2031137>.
- Venables, W. N., and B. D. Ripley. 2002. *Modern Applied Statistics with s*. Fourth. New York: Springer. <https://www.stats.ox.ac.uk/pub/MASS4/>.
- Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller. 2023. *Dplyr: A Grammar of Data Manipulation*. <https://CRAN.R-project.org/package=dplyr>.
- Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2024. *Readr: Read Rectangular Text Data*. <https://readr.tidyverse.org>.
- Wickham, Hadley, Evan Miller, and Danny Smith. 2023. *Haven: Import and Export ‘SPSS’, ‘Stata’ and ‘SAS’ Files*. <https://haven.tidyverse.org>.
- Xie, Yihui. 2014. *Knitr: A Comprehensive Tool for Reproducible Research in R*. Edited by Victoria Stodden, Friedrich Leisch, and Roger D. Peng. Chapman; Hall/CRC. <http://www.crcpress.com/product/isbn/9781466561595>.
- Zeileis, Achim, and Torsten Hothorn. 2002. “Diagnostic Checking in Regression Relationships.” *R News* 2 (3): 7–10. <https://CRAN.R-project.org/doc/Rnews/>.
- Zeileis, Achim, Susanne Köll, and Nathaniel Graham. 2020. “Various Versatile Variances: An Object-Oriented Implementation of Clustered Covariances in R.” *Journal of Statistical Software* 95 (1): 1–36. <https://doi.org/10.18637/jss.v095.i01>.
- Zhirkov, Kirill. 2021. “Social Dominance Orientation and Differential Affect Toward Immigrant Origin Groups: Evidence from Three Immigration-Receiving Countries.” *International Journal of Intercultural Relations* 85 (November): 170–83. <https://doi.org/10.1016/j.ijintrel.2021.09.014>.