

**THE NEED FOR GENDER-ATTENTIVE POLICING: AN ANALYSIS OF THE IMPACT
OF WOMEN'S POLICE STATIONS IN BRAZILIAN MUNICIPALITIES**

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THE NEED FOR GENDER-ATTENTIVE POLICING: AN ANALYSIS OF THE IMPACT OF WOMEN'S POLICE STATIONS IN BRAZILIAN MUNICIPALITIES

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Stanford University, 2025

Abstract:

Brazilian women live in constant fear of violence, and they have many reasons to be: every hour twenty-six of them are beaten by their partners or family members and every ten minutes one of them is raped. Effective programs to combat gender-based violence (GBV) are a central demand of women in Brazil and Latin America, but evaluating their efficacy is challenging due to limited data and underreporting. This capstone paper discusses the role of gender-focused policing strategies in improving the reporting of GBV and in reducing this type of violence. The police plays a crucial role in combating domestic violence and leads one of Brazil's largest GBV initiatives: the Women's Police Stations (WPS). To explore the effectiveness of this program and other gender-attentive policing strategies, this paper asks: **What factors correlate with GBV in different municipalities across the country? How does gender-attentive policing play a role in reducing violence and/or improving reporting? And, lastly, how do we distinguish the effects on reported violence and true violence?** To answer these, I constructed a dataset of 82,950 municipality-year observations (2009–2023) covering domestic violence, sexual violence, homicides, WPS presence, and police composition/training. I analyzed variables impacting violence through linear regressions, and applied a difference-in-differences analysis to assess the impact of WPS implementation (2020–2022).

Approved for publication:
By: Solange Melissa Severino de Oliveira Godoy
For the Center for Latin American Studies

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To all the women who, too often, are referred to as just statistics of violence: thank you for having the bravery and courage to report, thank you for your resistance. Your strength definitely inspires the millions of women who don't have the chance of doing so, for a variety of reasons.

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Introduction

Every hour, twenty-six women are victims of domestic violence in Brazil (16º Anuário Brasileiro de Segurança Pública, 2022). Every ten minutes, one is raped. Every seven hours, one is murdered (Júnior & Gonçalves, 2023). In more than 58% of women's homicides, the crime is committed by an intimate partner or family member. Young, Black, less educated, and poorer women are the main victims, but no woman is immune to the high risks of being a victim (FBSP, 2023). These terrifying statistics are not a particularity of Brazil, they are seen across most countries in the world. Fearon and Hoeffer (2015) show, for example, that the cost of intimate partner violence across the world is about twenty-seven times higher than the combined cost of terrorism, civil war and international conflict. These numbers also do not tell the entire story of gender-based violence, as these instances of violence are tremendously underreported.

The discussions about gender-based violence and creation of protections for women are very recent. In Brazil, the main law defining and establishing clear guidelines to deal with domestic violence, the Maria da Penha Law, was only passed in 2006, after Maria da Penha, a victim of intimate-partner violence and of attempted femicide sought help from the Inter-American Court, since the Brazilian judiciary proved inefficient to support her. Additionally, femicide was considered a different typology of crime in 2015 (Lei 13.104, 2025). Although these legal protections are in place, many women still feel reluctant to report violence or do not have a safe enough manner of doing so.

A report conducted by the Public Security Forum in Brazil and Datafolha shed light on the extent of this underreporting. 52% of the women surveyed by them, from a nationally representative sample, reported seeing situations of GBV around them in the past 12 months. Additionally, 33.4% of Brazilian women above the age of sixteen has reported suffering physical

or sexual violence by an intimate partner during their lives. These numbers point to a much larger proportion of victims of these violences than the official numbers of police and health reports of victims that file official claims or seek medical help in these occurrences. Significantly, 45% of women who suffered violence reported not having done anything about it, only 14% reported having sought help at a Women's Police Station and 8.5% reported seeking help at a common police station. 38% of the women who did not seek help from the police said that they resolved the issue by themselves. 21.3% believed that the police could not offer a solution to their problem, and 14.4% thought they did not have enough proof (Bueno et al., 2023).

With this sub-notification and the unpreparedness of police, health and justice institutions to support victims, most incidents of GBV go unreported and therefore unpunished, which makes it harder to deter further violence (Córdova & Kras, 2020). Calton and Cattaneo (2014) show that low confidence in the police and views of poor police performance largely influence women's decisions to not report violence (Calton & Cattaneo, 2014), which complements the findings shown above from the Public Security Forum in Brazil.

This capstone paper aims to discuss the role of gender-focused policing strategies in improving the reporting of gender-based violence, as well as in reducing this type of violence. The particular look at the police and public security policies stems from the fact that the police has a fundamental position in the critical route to combating domestic violence. The knowledge of the Maria da Penha Law, as well as of the existence of Women's Police Stations is widespread among Brazilians (Córdova & Kras, 2020), and these institutions therefore serve as entry points for the prosecution of gender-based violence. Additionally, when a victim seeks medical help, the health professionals are instructed to file a report, which involves pointing these women to

other services, such as the police. The same is true with the Women's Service Center, a phone number that victims of violence can call to receive guidance and support, which also forwards complaints of violence to the police (Lessa & Silva, 2021). Therefore, the police is either an entry door or a critical actor in the whole ecosystem of combating violence against women established by the Brazilian government. It is also an institution that is particularly masculine and strongly distrusted by the Brazilian population, considering the extremely high rates of police violence in the country. With this in mind, some reforms have been implemented to improve a gender-attentive service in the police, such as the creation of Women's Police Stations, later discussed in further detail.

To explore the role of gender-attentive policing in the prevention of GBV and improvement in reporting, I first expand on the literature that has observed some of these programs in Brazil and across the world. I then explore the data on violence in Brazil, particularly understanding their strengths and weaknesses and observing the regional distribution of violence and what factors are associated with the predominance of violence in different municipalities. Lastly, I observe the impact of the implementation of Women's Police Stations and Maria da Penha patrols in different municipalities in Brazil. The research questions guiding this paper are: **What factors correlate with GBV in different municipalities across the country? How does gender-attentive policing play a role in reducing violence and/or improving report? And, lastly, how do we distinguish the effects on reported violence and true violence?**

Literature Review and Theoretical Framework

Maria da Penha Law

The Maria da Penha Law on Domestic and Family Violence (Lei 11.340, 2006a) was the first, and main, federal law in Brazil designed to specifically regulate the different forms of domestic violence in the country, as well as created mechanisms to prevent and reduce violence, as well as punish perpetrators. It defines as domestic violence “any action or omission based on gender that causes death, injury, physical, sexual, or psychological suffering, as well as moral or patrimonial harm (Lei 11.340, 2006b).” For the purposes of this paper and the availability of data, domestic violence refers to physical violence committed in the domestic sphere or by an intimate partner or family member. Gender-based violence, more specifically, involves both this definition of domestic violence and sexual violence committed by anyone.

This law particularly defined parameters of criminal justice interventions, such as establishing punitive measures for perpetrator and protective measures for survivors, such as restraining orders (Gattegno et al., 2016). Among the preventative integrated measures established in the Article 8o of the law, which involve other services, such as the health sector, the role of public security officers is described as follows:

“IV - the implementation of specialized police assistance for women, particularly in Women's Police Stations; [...]”

VII - the ongoing training of the Civil and Military Police, the Municipal Guard, the Fire Department, and professionals belonging to the agencies and areas mentioned in item I regarding gender and race or ethnicity issues.”

This same article also determines that data needs to be collected regarding domestic violence and frequent studies should be conducted to evaluate the efficacy of policies being implemented. Additionally, in articles 9 to 12, the law defines the competences of the police and the guidelines for interaction with the victims of domestic violence, as highlighted below:

“Article 10-A. Women in situations of domestic and family violence have the right to specialized, continuous police and forensic assistance, provided by trained personnel—preferably female officers. (*Included by Law No. 13,505, of 2017*)

§ 1 The questioning of women in situations of domestic and family violence, or of witnesses of domestic violence, when the crime involves violence against women, must adhere to the following guidelines: (*Included by Law No. 13,505, of 2017*)

- **I** - Ensuring the physical, psychological, and emotional integrity of the deponent, considering her specific condition as a person in a situation of domestic and family violence;
- **II** - Guaranteeing that, under no circumstances, the woman in a situation of domestic and family violence, her family members, or witnesses will have direct contact with suspects, accused persons, or individuals related to them;
- **III** - Preventing the re-victimization of the deponent by avoiding repeated questioning on the same facts in criminal, civil, and administrative proceedings, as well as inappropriate inquiries into her private life.

Article 11. In providing assistance to women in situations of domestic and family violence, the police authority must take the following actions, among others:

- **I** - Ensure police protection when necessary, immediately informing the Public Prosecutor’s Office and the Judiciary;
- **II** - Refer the victim to a hospital, health center, or the Institute of Forensic Medicine;
- **III** - Provide transportation for the victim and her dependents to a shelter or a safe location when there is a risk to her life;
- **IV** - If necessary, accompany the victim to retrieve her belongings from the scene of the incident or from the family home;
- **V** - Inform the victim of her rights under this Law and of the available services, including legal assistance for filing, if needed, actions for judicial separation, divorce, annulment of marriage, or dissolution of a stable union. (*Amended by Law No. 13,894, of 2019*) [...]
- **VI** - Submit, within 48 (forty-eight) hours, a separate report to the judge with the victim's request for the granting of urgent protective measures.”

These specifications of the responsibilities of the police in the combat of violence and support of victims reiterates the fundamental role that the institution plays in dealing with the problem of gender-based violence. This points to the necessity to understand whether these responsibilities are being fulfilled and if the professionals are receiving the appropriate training to perform these activities. In the results section, this paper will look at the proportion of police officers receiving training on gender issues, as well as observe the proportion of women in the force, considering the stipulations that preference is given to female professionals in supporting these victims.

The Maria da Penha Law is widely known by the population, with 98% of Brazilians having heard about it and more than 66% are familiar with its purpose and function. When it comes to the perception of the effects of the law, 86% of Brazilians believe that more women have reported cases of domestic violence following the law, but many (85%) also perceive that women are at further risk when they report violence. 88% of the surveyed believe that femicides have been increasing the past five years, which may contribute to the perception that women who report violence and do not receive the appropriate support have higher chances of being victims of femicide (Gattegno et al., 2016). Therefore, there is skepticism regarding the ability of the police and the justice system in protecting women that report violence.

Women's Police Stations

A very relevant policy that precedes the Maria da Penha Law are the Women's Police Stations. These are named *Delegacias Especializadas de Atendimento à Mulher* (DEAM) - Specialized Police Stations of Service to Women, in English - and Brazil was the first country in Latin America to implement them, in 1985, followed by several others. Machado (2010)

highlights the symbolic power that the Women's Police Stations had at the time: they validated a social collective right because they recognized that the majority of Brazilian women suffered daily aggressions. The decree 23.769 established that the first Women's Police Station should "investigate crimes committed against people of the female sex." Besides being specialized in crimes against women, the service at these police stations should be provided by women police officers. The project of this initial station was idealized by the São Paulo State Government in conversations with feminist movements, the State Council on Women's Condition and the Civil Police (Pasinato & Santos, 2008). Additionally, it is expected that Women's Police Stations will favor placing official incident reports, contra posing the common police stations, which usually led abused women to experience embarrassment, humiliation, and re-victimization, resulting in the absence of a formal complaint in a police report, especially when the victim approached the police repeatedly and therefore contributing to the continuation of underreporting trends (Bandeira, 2014).

The format of Women's Police Stations varies significantly, particularly three aspects of these stations have been extensively discussed and differ across states and municipalities. First, the type of service offered in the stations can include just police services or can also include psychological, social and judicial support to victims. Second, the role of the police services varies, and can include an educational and advising role or be limited to investigation of crime. Third, different Women's Police Stations have different scopes of crimes that they investigate. Some only take cases of violence in the domestic aspect, while others attend any case of crime against women. The most common model includes only police services, takes the role of advising, mediation and investigation, taking cases of crimes committed by intimate partners and ex-partners as well as sexual crimes (Pasinato & Santos, 2008).

By 2023, there were 490 police units specialized in gender-based crimes, with 96.8% of these units being Women's Police Stations, one of them being an Online Police Station, and 3% being a different type of center. As it is exemplified in the map below, the Southeast region concentrates 44.1% of the Women's Police Stations in the country, with a total of 223 stations for around 84 million women. It is followed by the Northeast, with 21.3% of the Women's Police Stations in the country (Secretaria Nacional de Segurança Pública, 2023).

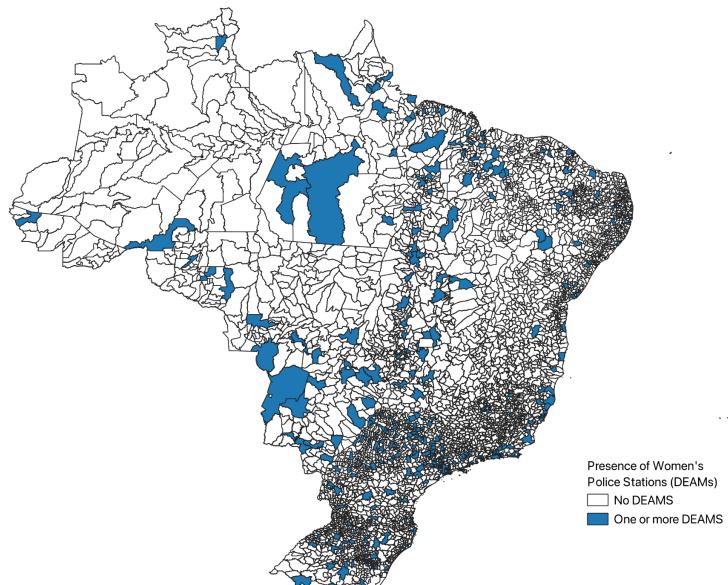


Figure 1. Map of Women's Police Stations in Brazilian Municipalities, in 2022.
Map elaborated by the author using governmental data

The bill 14.541, from 2023, established that Women's Police Stations should operate 24 hours a day (Lei 14.541, 2023). However, more than 80% of the stations do not fulfill this requirement yet (Secretaria Nacional de Segurança Pública, 2023). These stations are highly specialized, with 99% of them attending cases of domestic violence, 97% attending cases of sexual violence and 70% taking femicide cases. However, the WPS still have to improve when it comes to being majorly composed by women. Out of the 490, only 42 stations used "belonging

to the female sex” as a criteria to choose agents (Secretaria Nacional de Segurança Pública, 2023).

The impact of Women’s Police Stations

Some authors have observed the consequences of implementing Women’s Police Stations to the levels of femicide in different municipalities, as well as to legitimacy of the police among people from municipalities with these types of station and attitudes towards this police. However, many studies of the impact of this policy are limited due to the underreporting of violence, particularly during the period when most of these stations were implemented.

Perova and Reynolds (2017) use a difference-in-differences approach to estimate the effect of establishing a Women’s Police Station on the female homicide rate in 2074 municipalities from 2004 to 2009. They find that these stations are highly effective among women living in metropolitan areas, but do not see strong impact outside of these areas. Additionally, they observe that the effect of Women’s Police Stations is particularly high among young women. Establishing a station in a metropolitan municipality reduced the female homicide rate in that municipality by 1.23 deaths per 100,000 women ages 15–49 years, and by 5.57 deaths per 100,000 women ages 15-24. Lastly, they argue that the heterogeneous impact of the stations in metropolitan regions may be explained by better economic opportunities and less traditional social norms (Perova & Reynolds, 2017). Another study, by Kavanaugh et al. evaluates the impact of all-women’s justice centers (WJCs) in Peru. These provide police and legal services with the main goal of reducing gender based violence and have been successful in increasing the report of gender based crimes by 40%, as well as reducing domestic violence in 10% (Kavanaugh et al., 2018). In India, Amaral et al. also find that the opening of a Women’s Police

Station is associated with a 29% increase in police reports, mainly of domestic violence (Amaral et al., 2021).

Córdova and Kras (2020) observe the effect of Women's Police Stations in police legitimacy among citizens of municipalities that have received these stations. They argue that Women's Police Stations are part of a subset of gender policies that are both salient and traceable and therefore that allow for this type of analysis (Campbell, 2012; Córdova & Kras, 2022; Pierson, 1993). They highlight that "women are more likely to be aware of government efforts to provide local services for women, such as health centers and WPS, than about the provision of similar services in more distant and centralized locations. Moreover, gender policies implemented at the local level can facilitate women's *access to services*, which can further influence their views of institutional legitimacy." They also observe that the nature of the police, addressing violence, makes it likely that it will influence women's vision of the police and government more general, since it is a very generalizable policy, considering that women in general are at risk of gender-based violence (Córdova & Kras, 2020). Their analysis shows that Women's Police Stations produce positive effects among women, increase their trust in the police and close the gender gap in perceptions of police effectiveness. Lastly, their study shows that the improved views of police legitimacy stem from improved perceptions of personal safety, not from perceptions of government responsiveness (Córdova & Kras, 2020). Understanding these improvements in police legitimacy are particularly important to trace the mechanisms behind the logic of why a Women's Police Station would work better than a common police station. Higher legitimacy - which may stem from this improvement in perceived safety or, for instance, the perception of higher preparedness of officers to deal with gender-based violence -

increases women's likelihood of reporting gender-based violence to the police, which then can explain the mechanism for why these police stations can improve the problem of underreporting.

Moreover, Women's Police Stations increase the "compositional similarity between representatives and the represented" (Córdova & Kras, 2020; Schwindt-Bayer & Mishler, 2005, p.407). Therefore, these policies increase descriptive representation in these institutions that are traditionally composed by men. The masculine culture associated with policing has negative systemic consequences for how this institution responds to gender-based violence, including, for instance, victim-blaming, lack of empathy towards the victim and reluctance to take complaints seriously (Carrington et al., 2022). Therefore, the existence of a non-masculine police force in these Women's Police Stations helps the victims of gender-based violence perceive the police as more open to take these claims and support them. Lastly, Córdova and Kras also observe that men are more likely to reject gender-based violence and support bystander intervention in municipalities that have a Women's Police Station, especially if the station has been there for a long time (Córdova & Kras, 2022). This finding is important because the literature has previously shown that in a context where there is widespread tolerance of gender-based violence, there is a higher incidence of this violence (e.g. Flood & Pease, 2009). Therefore, transforming men's views and behaviors through these policies plays an important role in preventing gender-based violence (Córdova & Kras, 2022).

In summary, some policies are in place in the Brazilian context to prevent and combat gender-based violence and the implementation of Women's Police Stations has appeared to be positive in different contexts to both increase reporting and reduce violence. However, the lack of data and the difficulty of differentiating the impacts in reporting versus the impacts on actual violence make analysis of these policies limited.

Theoretical Framework

Besides providing a general picture of gender-based violence per municipality, this paper particularly aims to differentiate the impact of Women's Police Stations, aiming to understand whether the main impact of this policy is on increasing reporting or on reducing violence and what other factors matter when observing the impact of the policy in different municipalities. The simple equation below shows this division in an explicit manner.

$$\text{Real violence} = \text{Measured Violence} + \text{Omitted Violence}$$

Considering the previous findings of the literature, some hypotheses can be generated to test the relationship between Women's Police Stations and violence in different municipalities:

Hypothesis 1: Given a fixed level of real violence, Women's Police Stations serve to reduce the omitted violence, since they are expected to increase reporting by facilitating access to these services and increasing police legitimacy among women.

Hypothesis 2: Women's Police Stations should also serve to reduce true violence, since they can have a deterrence effect, considering that perpetrators may interpret that the presence of a Women's Police Station means that there is a higher likelihood that they will be reported for their crimes and punished. I expect that the effect of Women's Police Stations on reducing true violence is lower than the effect on reducing omitted violence, because the deterrence effect also depends on the efficiency of the judicial system in condemning perpetrators. Therefore, other types of systemic reforms are necessary for a significant impact in real crime.

Hypothesis 3: Higher development is associated with lower rates of real gender-based violence, but there are several other factors that may significantly impact this relationship - for example, whether a city is part of a drug trafficking route.

Hypothesis 4: Higher development is associated with lower rates of omitted gender-based violence, since in more developed municipalities there should be more access to reporting mechanisms, as well as less traditional values that discourage this type of reporting.

Considering that we do not have access to data on real violence, hypotheses 1 and 4 are directly tested in this paper, and hypotheses 2 and 3 are discussed, as I explore techniques to differentiate between real and omitted violence, but they do not go through a causal test.

Methods

To test these hypotheses, I have conducted a quantitative analysis of municipal and state-level data containing information on gender-based violence, human development, presence of Women's Police Stations and composition of police force. I conducted linear regression analysis to observe the relationship between these variables, as well as a difference-in-differences analysis to observe the impact of implementing a Women's Police Stations in municipalities between the years 2020 and 2022. These analyses will be discussed in more detail in the results section.

The municipality and state-level datasets I constructed drew from several open source databases from the Brazilian Government, UNDP and other organizations, due to the inconsistency and lack of disaggregated data. Below, I detail the sources of the data used:

SINESP Database

This database came from the National Information System of Public Security, Imprisonment, Tracking of Guns and Ammunition, of Genetic Material, of Fingerprints and of Drugs. It contains the crimes registered by the police of each state, with some types of crime containing municipality-level information and other types only containing state-level information. The public security institutions in each state record the number of daily occurrences of each type of crime in the dataset. I used observations from this database from 2015 to 2023 regarding occurrences of rape, femicide, homicide, and aggression followed by homicide, filtered by only women victims. The disaggregated data on domestic violence was not included in the SINESP datasets available online.

SINAN Database

This database came from the Notifiable Diseases Information System, connected to the Unified Health System. Since 2003, cases of violence against women must be mandatorily reported by health workers. In the system, each observation corresponds to each patient that was a victim of violence and this system was created by the Ministry of Health to better understand the circumstances of these violences and create public policy (Magalhães, 2016).

From this source, I particularly extracted the occurrences of domestic and sexual violence per municipality from 2009 to 2023 filtered by only women victims. To observe the data of domestic violence, I filtered for distinct observations of physical violence and torture that either happened inside the house or that were committed by an intimate partner. For sexual violence, I simply used the questionnaire question that asked whether the victim had suffered sexual violence. This database was very comprehensive in terms of information about each occurrence, pointing to who were the perpetrators reported by the victim, what weapons were used etc. Additionally, it included information on psychological and economic violence.

SIM Database

This database came from the System of Information on Mortality, also connected to the Unified Health System, which categorizes the reason for all deaths in the country at the municipal level. As I was interested in observing homicides of women, I filtered for the CIDs 10 codes X85 to Y09, which corresponds to all deaths caused by assault, except the ones related to “legal intervention.” The data used ranged from 2009 to 2023.

IDHM Data

The information on the municipal HDI of Brazilian municipalities was extracted from the database generated by Atlas of Desenvolvimento Humano (ADH) no Brasil, a collaboration between the UNPD, the IPEA and the Foundation João Pinheiro. The information of four variables was obtained from this report, which evaluated the HDI of municipalities in 2010 - the most recent HDI evaluation to all municipalities in the country (Atlas do Desenvolvimento Humano no Brasil, 2010):

- Municipal HDI: The methodology to calculate the municipal HDI by the ADH uses the same variables of interest of the general HDI, but it is adapted to the context of what data sources are available at the municipal level. It consists in the geometric average of three HDI indexes that will be further described below: Longevity HDI, Education HDI and Income HDI.
- Longevity HDI: Corresponds to life expectancy at the moment of birth.
- Education HDI: Geometric average of different weights of the educational level of the adult population and schooling flow of the youth.
- Income HDI: Corresponds to per capita income.

Demographic Data

My constructed database also counted with information on population size in 2010, by gender, for each of the municipalities. Additionally, it included the fertility rate per municipality in 2010. Most of this data is only available in a disaggregated manner for 2010 because the only Census after that was conducted in 2022 and is still not fully available. This information was acquired through IPEA Data.

Data on Police Composition and Training

The data regarding police staff composition, training and activities performed comes from the Annual Survey on the Profile of Public Security, answered by the heads of the state Civil and Military Police, along with the Military Firefighters and Official Investigation Bodies, but this paper focuses only on the two first. This data is collected by the National Secretary on Public Security, at the state level.

Data on the presence of Women's Police Stations

The information on the presence of Women's Police Stations per municipality for 2022 was obtained through the 8th National Diagnostic of the Civil Police Units Specialized on the Service to Women (Secretaria Nacional de Segurança Pública, 2023). The same information for 2020 was obtained through a mapping project by the Instituto AzMina.

The combination of variables of all these databases led to a main dataset with municipal-year observations (totalling 82,950), with 57 variables and other state-level smaller datasets. All of this process was conducted in the statistical software R. The next section of this paper will detail the analysis conducted with this data, highlighting the premises behind the linear regression models generated and the difference-in-differences analysis.

Results

Descriptive statistics of gender-based violence in Brazil

In order to discuss what factors are important in explaining the prevalence of gender-based violence in some municipalities and the efficacy of specific programs to combat this type of violence, it is first important to have a clear picture of the general trends of gender-based violence in Brazil. This will be covered in the current section.

The graph below (Figure 2) shows the difference in the numbers of sexual violence reported in the SINESP and the SINAN datasets. The data from SINESP, indicating the reports to the police, is available online since 2015, while the health reports from SINAN can be traced to earlier than 2009. The lines indicating the number of sexual cases followed similar trends during the entirety of the period, but the number of cases reported by SINAN has been constantly lower than by SINESP. This is a surprising trend, considering the literature on the distrust of women in the police and the fact that there is mandatory reporting in the health system for cases of sexual violence. One possibility for why this happens is that, even though there is a law demanding reporting of gender-based violence in the health system, professionals may not have been properly trained to do so until recent years. Additionally, the report demand contains extensive information and would need to take a significant amount of time to be filled in the context of understaffed hospitals, which might make it not a priority of these professionals. A second possibility is that women who are victims of sexual violence often do not seek medical help. Often women only recognize that they have been sexually abused, or have the courage to speak up about the crime, several days after the occurrence, which might make them think that there is no point to go to the hospital, but they are still able to report it. Lastly, it is important to notice

that in the most recent years, the lines of the two datasets have been getting closer, which would mean that they are capturing similar data on sexual violence.

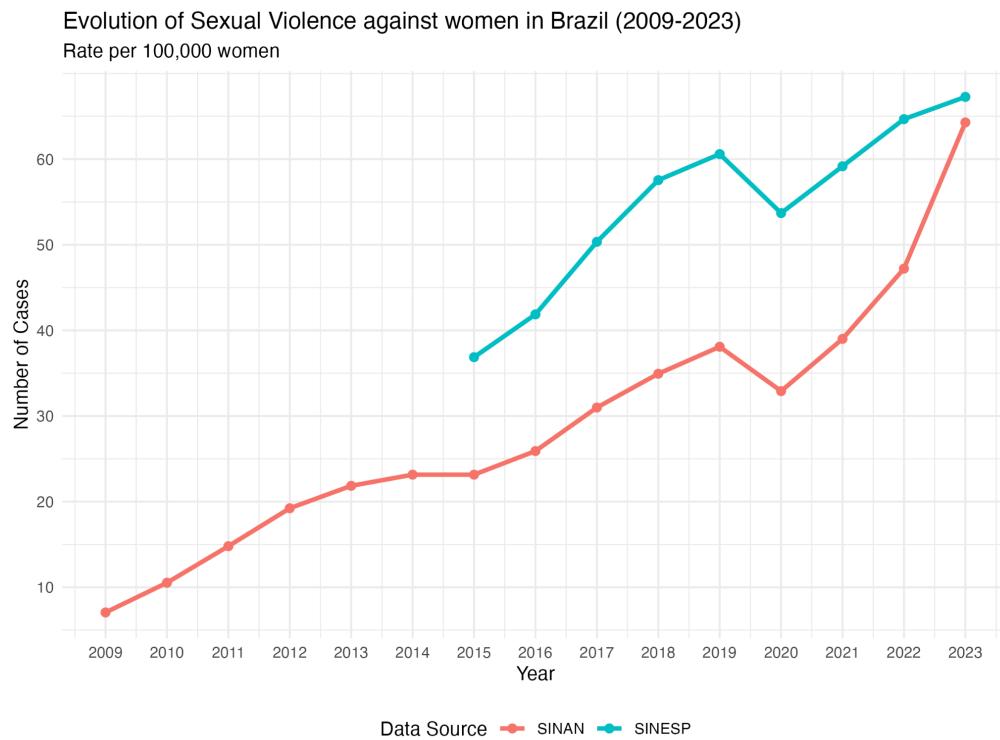


Figure 2. Sexual Violence against women in Brazil (2009-2023)

In the following graphs, the rates of violence are presented as cases per 100,000 women, considering the women's population in 2010 in each of the 5,530 municipalities observed in the dataset, and the general population divided by two per year in the case of the national averages. Figure 3, presented below, shows the evolution of the rates of sexual violence in Brazil, revealing an upward trend, which can be related to either an increase in real violence, an increase in reporting or both. Most of the regions of the country follow similar patterns of sexual violence as the national average, with the North being a particular outlier of the trend, with rates much higher than any other region starting in 2012. It would be important to conduct a more in-depth

analysis in the context of the North region to understand whether these rates are related to a specific improvement in the reporting ability, or if they reflect a surge in sexual violence cases.

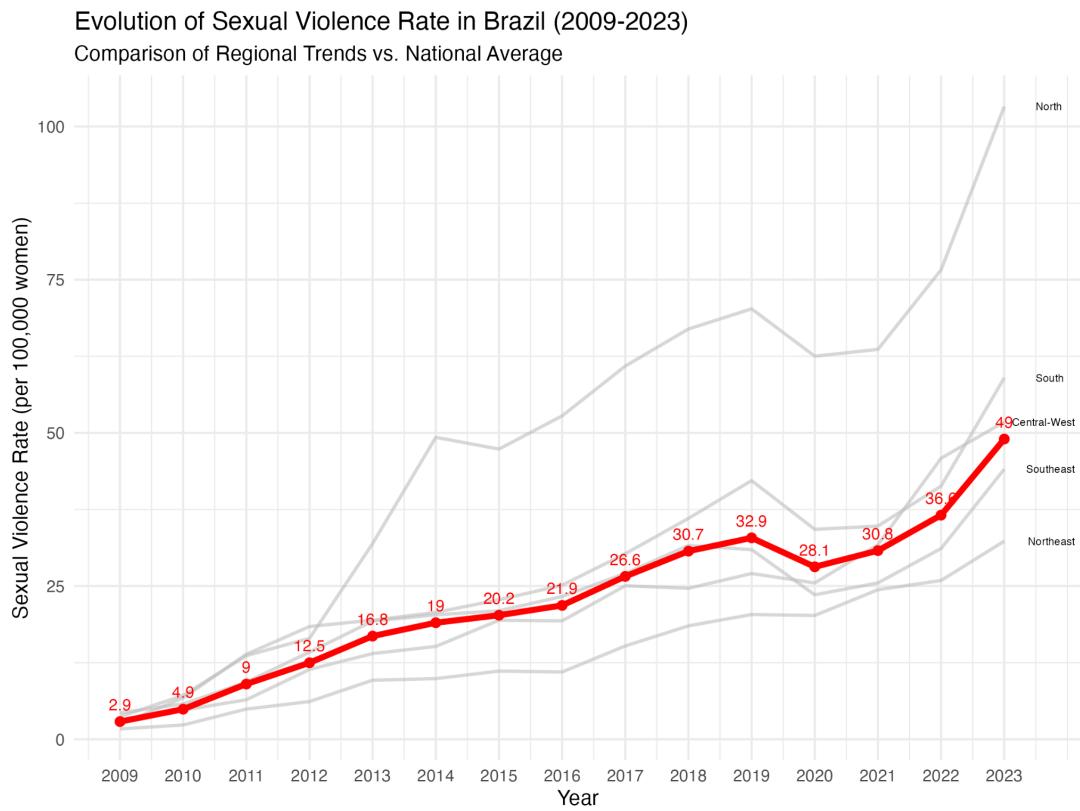


Figure 3. Sexual Violence against women in Brazil (2009-2023):
Comparison of Regional and National Trends

Figure 4 shows the same information but for data on domestic violence, again revealing an upward trend that is somewhat similar across regions when it comes to moments of increase or decrease in violence, but it presents significantly more variation than the data on sexual violence. The difference in the rates of the Northeast region (which reports the least violence) and the Southeast (which reports the most violence) is of more than 100 cases per 100,000 women, indicating sharp contrasts between the regions. With the Southeast region concentrating the richest cities in the country, one of the possibilities is that this region has better reporting systems, better access to reporting and less stigma around reporting. The Northeast, in contrast,

is the poorest region in the country, which may be related to less access. Some of these relationships are tested in the following section.

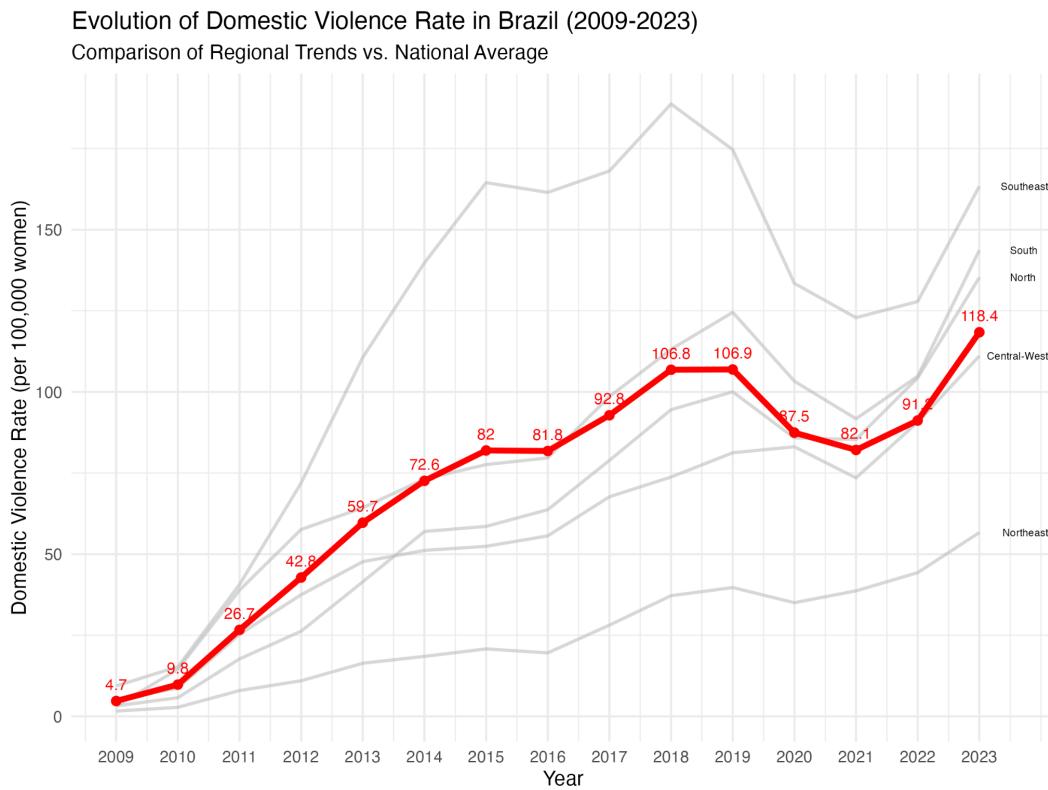


Figure 4. Domestic against women in Brazil (2009-2023):
Comparison of Regional and National Trends

The graph below (Figure 5) shows the comparison of homicide and femicide rates across different databases. It shows that the homicide rate registered by the System of Information of Mortality (SIM) is significantly higher than the one registered by SINESP. It is also interesting to observe that the femicide rate appears to be much smaller than the homicide rate registered by SINESP, which goes against most of the research that shows that more than 60% of the murders of women are committed by intimate partners or family members (, 2022). This suggests that a lot of the femicides are reported as homicides, as the concept of femicide as a separate crime is

relatively new (since 2015). However, there is an upward trend in this type of crime, which may indicate better reporting of it in current years.

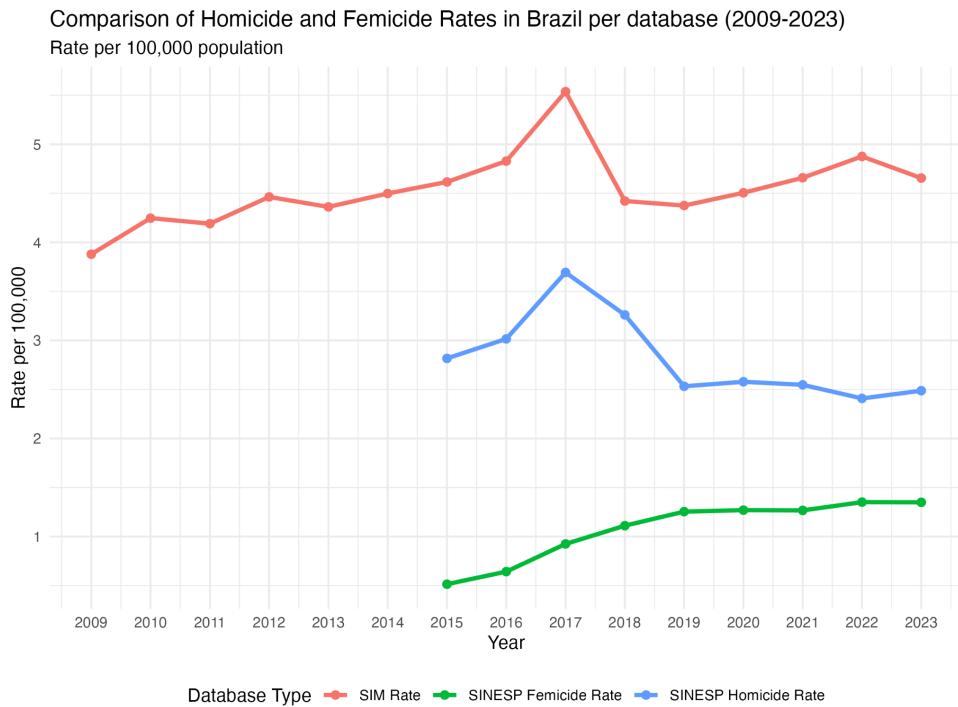


Figure 5. Comparison of Homicide and Femicide Rates in Brazil per database (2009 -2023)

Figure 6 explores the regional and national trends of women's homicides in Brazil and presents a very different picture from the trends in domestic and sexual violence. When it comes to homicide, the national rate is somewhat stable, varying from 3.9 to 5.5 deaths per 100,000 women, and there is no upward trend, such as in the other types of violence. Since homicides are the most reliable form of data on violence - it is very rare for a homicide not to be reported, compared to the other instances of violence -, this trend can suggest that perhaps other forms of violence have not been growing so steadily in reality, but that these trends tell us more about the reporting of violence. The attempt to make this differentiation will be explored in the next section.

Evolution of Homicide Rate in Brazil (2009-2023)
Comparison of Regional Trends vs. National Average

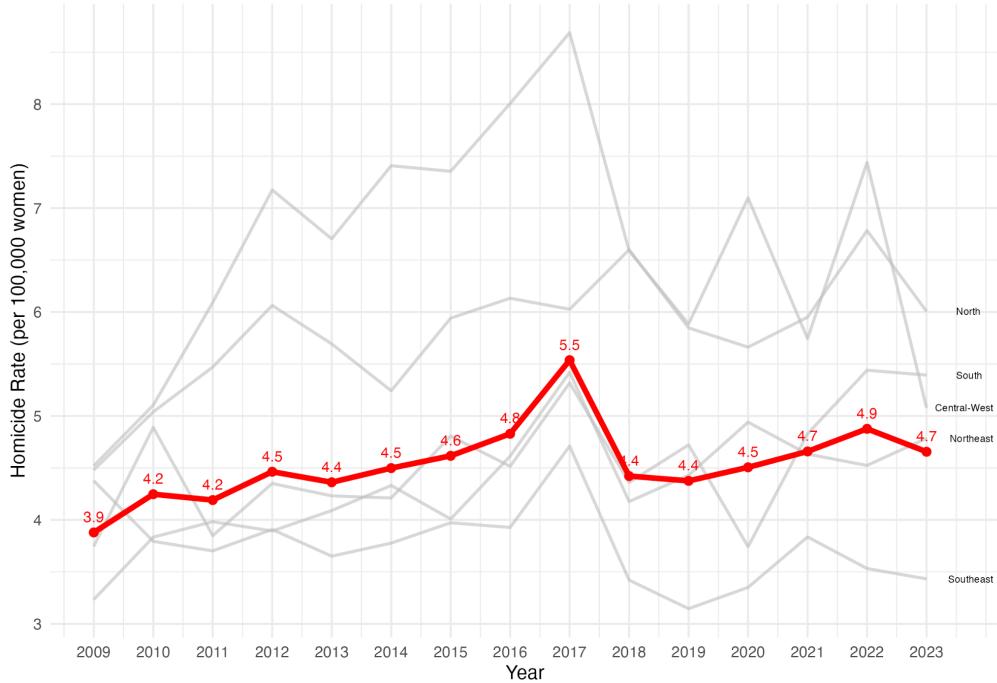


Figure 6. Evolution of homicide rate in Brazil:
Comparison of Regional vs. National trends

The last part of this descriptive analysis section covers the distribution of gender-based violence as a whole in the different regions and municipalities. The gender-based violence rate is generated combining the rates of sexual and domestic (only physical) violence in one variable. The map below shows the average gender-based violence rate in each municipality for the years 2009 to 2023.

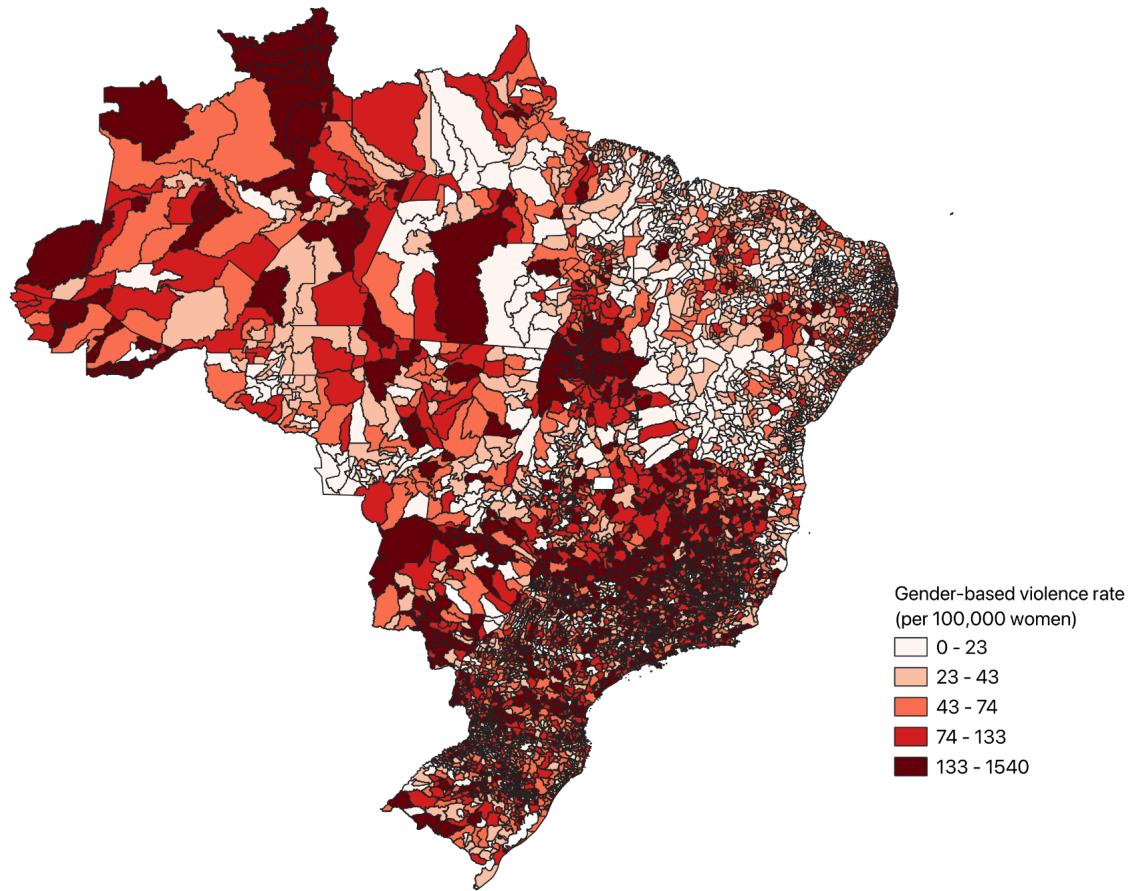


Figure 7. Average Rate of Gender-Based Violence across Brazilian Municipalities (2009-2023)

It is possible to observe that the highest rates of gender-based violence are in the Southeast region - although it is challenging to differentiate the distribution across municipalities in the region considering their small territories - while the lowest rates are in the Northeast region. The graph below (figure 8) also points to the North region as one with prevalence of gender-based violence, following a similar trend to the sexual violence data.

Evolution of Gender-based Violence Rate in Brazil (2009-2023)
Comparison of Regional Trends vs. National Average

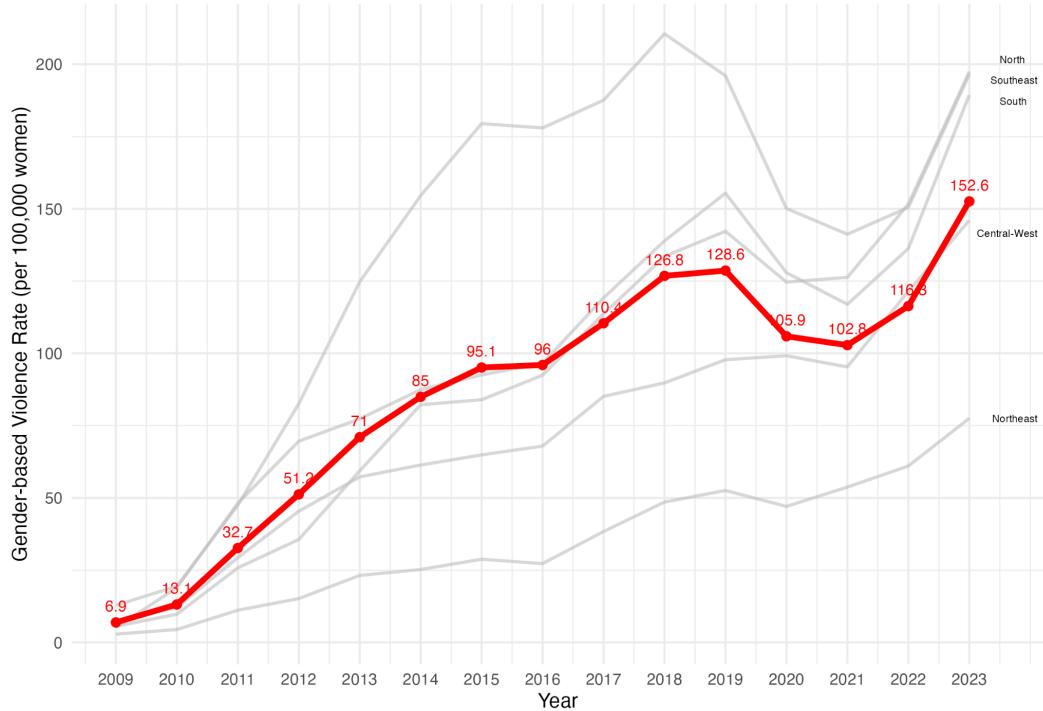


Figure 8. Gender-based Violence against women in Brazil (2009-2023):
Comparison of Regional and National Trends

What shapes the prevalence of violence in different municipalities?

To explore some of the factors that are correlated with more or less violence in each municipality, I used linear regressions to observe the impact of certain development variables on GBV rate. Using municipal HDI and the different components of the score allowed for a broader comprehension of human development in each municipality, since it made these independent variables a lot more informative than individual variables would be. The table below shows the correlation coefficients of each of the independent variables on GBV rate, with and without controls for year fixed effects.

Table 1: Dependent Variable: Gender-based Violence Rate per Municipality

	<i>Independent variables:</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
	With year fixed effects					
Municipality-level HDI (2010)	365.62*** (16.12)					365.62*** (6.206)
Income HDI (2010)		339.49*** (14.34)				339.48*** (5.53)
Education HDI (2010)			220.86** (12.64)			220.86*** (4.82)
Longevity HDI (2010)				678.07*** (25.49)		678.04*** (9.90)
Fertility Rate					-19.04*** (2.38)	-19.04*** (0.89)
Constant	-154.60*** (10.68)	-131.83*** (9.29)	-211.19*** (3.95)	-536.52*** (7.16)	128.03*** (8.11)	
Observations	5,514	5,514	5,514	5,514	5,514	82,724
R ²	0.085	0.092	0.005	0.113	0.011	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

For all of the HDI variables there is a strong positive correlation with GBV rate. This means that municipalities with higher human development also have higher rates of reported violence. This could indicate that these municipalities have more systems in place to encourage reporting and might even be culturally less conservative than other municipalities with lower HDI, leading to less stigma around reporting. These correlations continue to be seen when controlling for year fixed effects. One interesting finding from the table is that the Longevity HDI has a significantly larger effect than the other three HDI measures - general, education and income. One possible explanation for this is that longevity might have a very strong correlation with the quality of health services in the municipalities. Since the reporting of GBV rate comes from the health reports at SINAN, higher quality health services may also be correlated with better reporting of GBV violence in hospitals and other health agencies. It could also be related to the fact that more women would seek medical help in a GBV situation if the quality of these health services is perceived as high.

The only independent variable negatively correlated with GBV in the table is fertility rate, which appears intuitive considering that Municipal HDI and fertility are negatively correlated (with a coefficient of -4.28). That is, less developed municipalities tend to have higher fertility rates. At the same time, higher fertility rates are associated with less reported violence. The importance of looking particularly at fertility rates here and not just to HDI is that this variable can give us an important sense of the gender roles in a municipality. Usually, places with higher fertility rate can be associated to a smaller presence of women in the labor force and strong traditional gender roles (Bloom et al., 2009). In these contexts, one would expect less reporting of gender-based violence, since these occurrences are more socially acceptable and women are often discouraged from reporting and frequently are blamed for the violence.

Figure 9 shows the plot of the relationship between HDI and the average GBV rate in each municipality across years. To improve visualization, I limited the average score to no more than 300, which excludes a small amount of outlier observations above it. Low HDI refers to observations below 0.599 (out of 1), medium HDI refers to the range of 0.6 to 0.699 and high HDI refers to above 0.7.

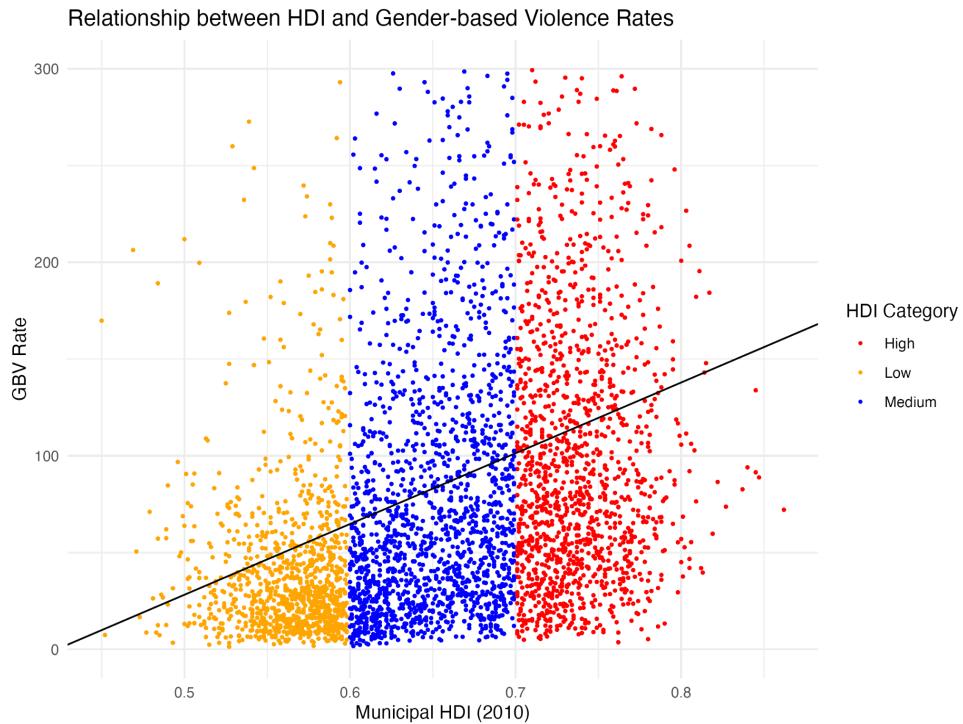


Figure 9. Relationship between Municipal HDI and Average Gender-based violence rate across municipalities

Figure 10 shows the GBV rates of the different groups of low, medium and high HDI across time. The three groups follow the same upward trend, with lows and ups around the same periods of time, but there is a gap between them, with high HDI being correlated with high rate of reported violence across the entire period. Additionally, it is possible to observe that the gaps between each of the groups is much larger in 2023 than it is in 2019.

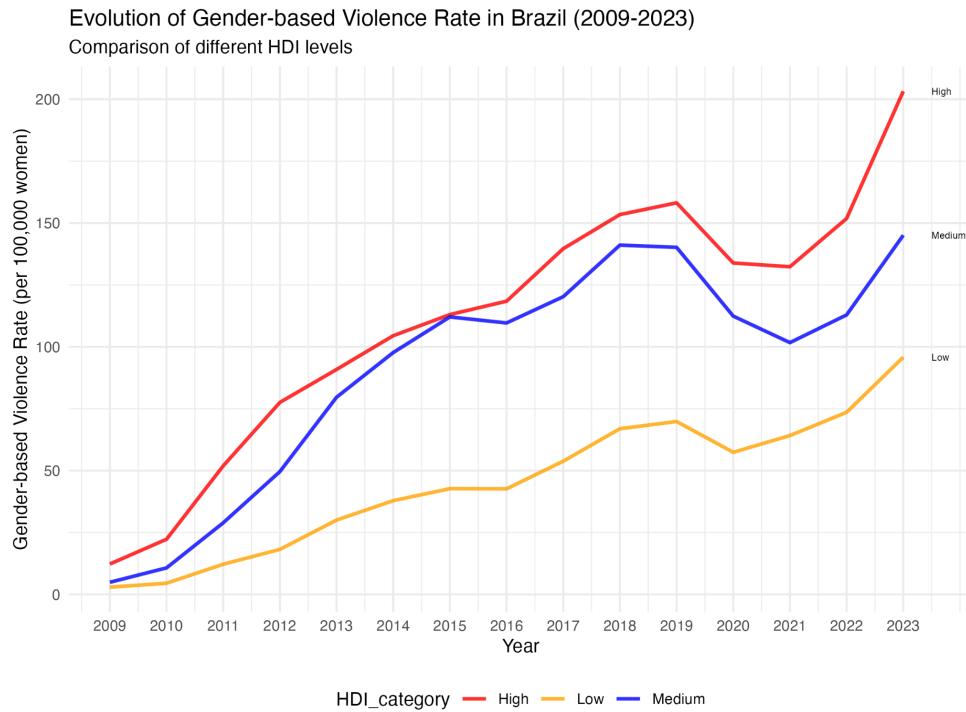


Figure 10. Evolution of Gender-based Violence Rate in Brazil:
Comparison of different HDI levels

When it comes to the relationship between GBV rate and fertility, it follows the opposite trend of the HDI relationship, as shown by the regression table 1. Here, low, medium and high fertility rate were defined with the thresholds of the first and third quartiles.

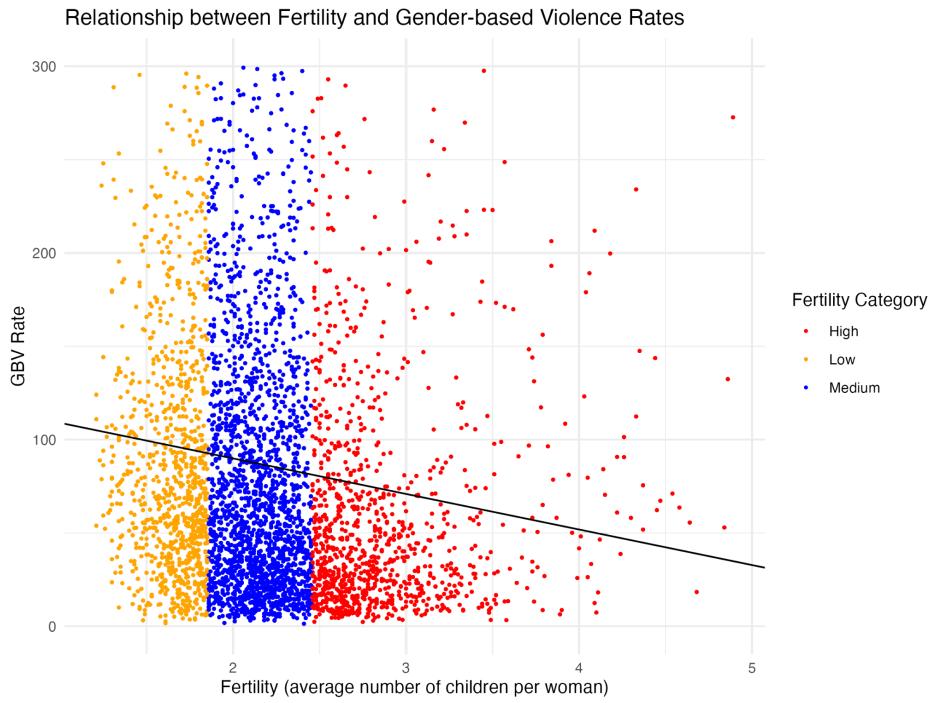


Figure 11. Relationship between Fertility Rate and Average Gender-based violence rate across municipalities

Descriptive statistics of the police

As it was described in the Literature Review Section, the first Women's Police Station was created in 1985 and, by 2023, there were already 490 WPS across the country. The graph below shows the national number of WPS from 2009 to 2012. Since states themselves can make decisions about these WPS, there is volatility on the number until around 2015, when we begin to observe an upward trend.

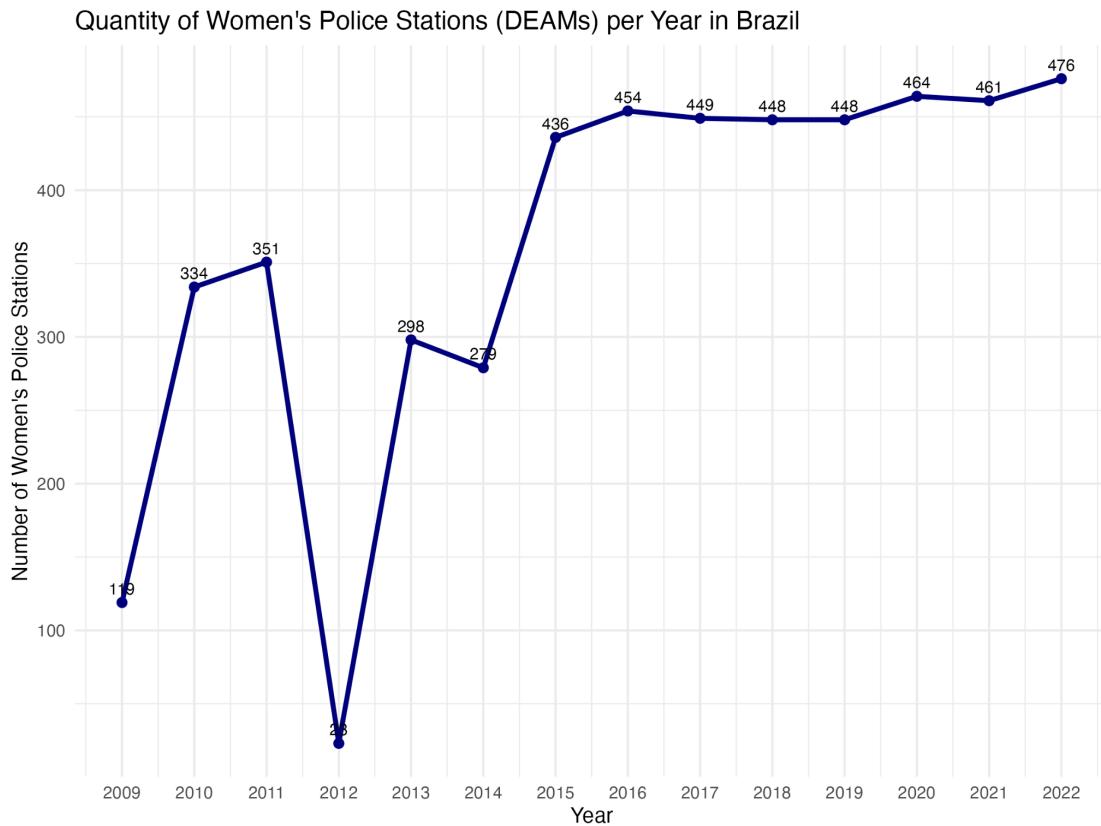


Figure 12. Quantity of Women's Police Stations per year in Brazil (2009 - 2022)

Additionally, figure 13 below presents the percentage of states in each given year that possess a Women's Police Station. By 2022, all of the states in the country had at least one WPS. There is no consolidated data on when each municipality gained a Women's Police Station across time. However, I was able to find this information for the years 2020 and 2022, which allowed me to observe that there is a positive correlation between the number of Women's Police Stations and higher HDI. That is, municipalities with higher HDI also tend to have more stations.

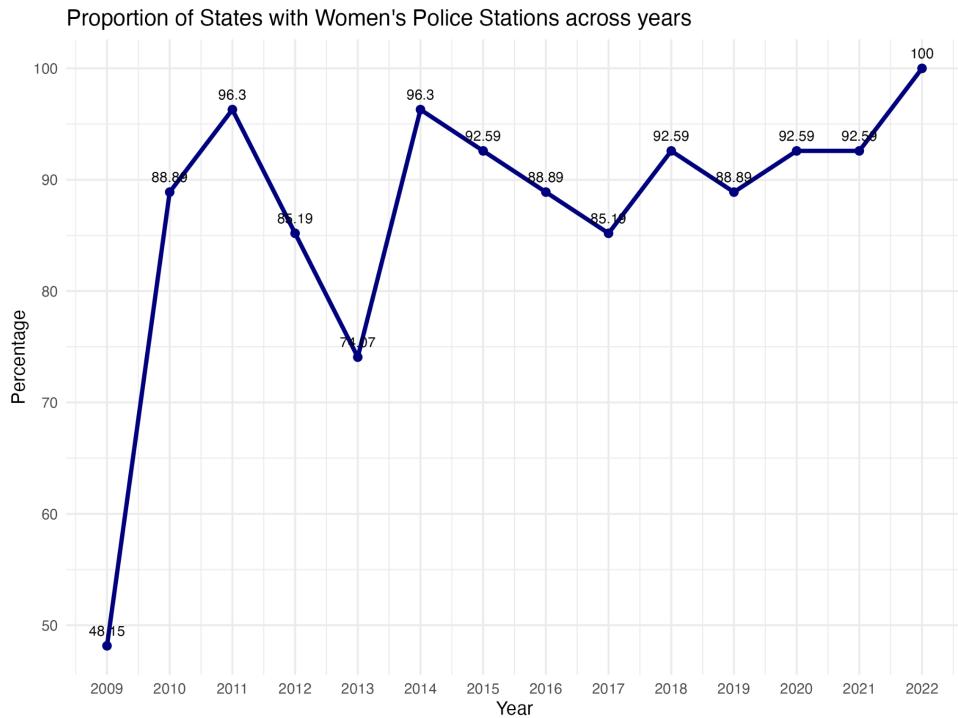


Figure 13. Percentage of states with at least one Women's Police Station (2009 - 2022)

While the Women's Police Stations are initiatives of the Civil Police, a more recent program is promoted by the Military Police in the states: the Maria da Penha Patrol. This program takes different formats in different states, with some being more comprehensive than others, but their common characteristic is that the Maria da Penha Patrol regularly visits women who have restraining orders against their partners, family members or others. In some states, this patrol is an integrated service with social assistants to attend to these women more holistically, for instance. Although it is possible that the Maria da Penha patrols have been implemented by individual states and municipalities before 2018, this is when the Survey of the Profile of Public Security started collecting data on the presence of the Patrol in the capitals. The graph below shows the proportion of capitals in each year that have Maria da Penha Patrols.

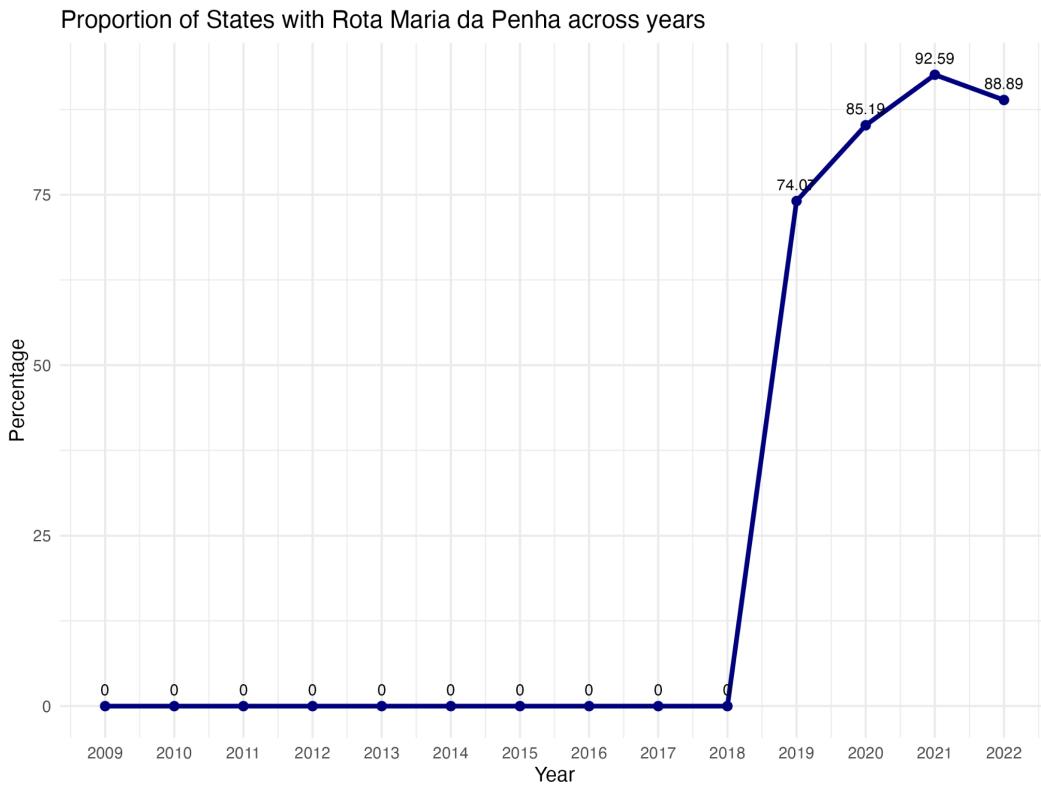


Figure 14. Percentage of states with Maria da Penha Patrols (2009 - 2022)

Another fundamental measure necessary for the police to be better able to deal with cases of GBV is the training of officers on the topic. The graph below observes the proportion of officers that have been trained in gender-based violence, looking at the number of the officers trained nationally compared to the total number of officers nationally. The figure shows great variation year to year in both the Civil and the Military Police, besides pointing to strikingly low rates of officers trained, mostly below 10%. It is important to note that I am excluding the data from 2012 for the Civil Police because it is a significant outlier (it indicates that more than 2000% of the officers were trained).

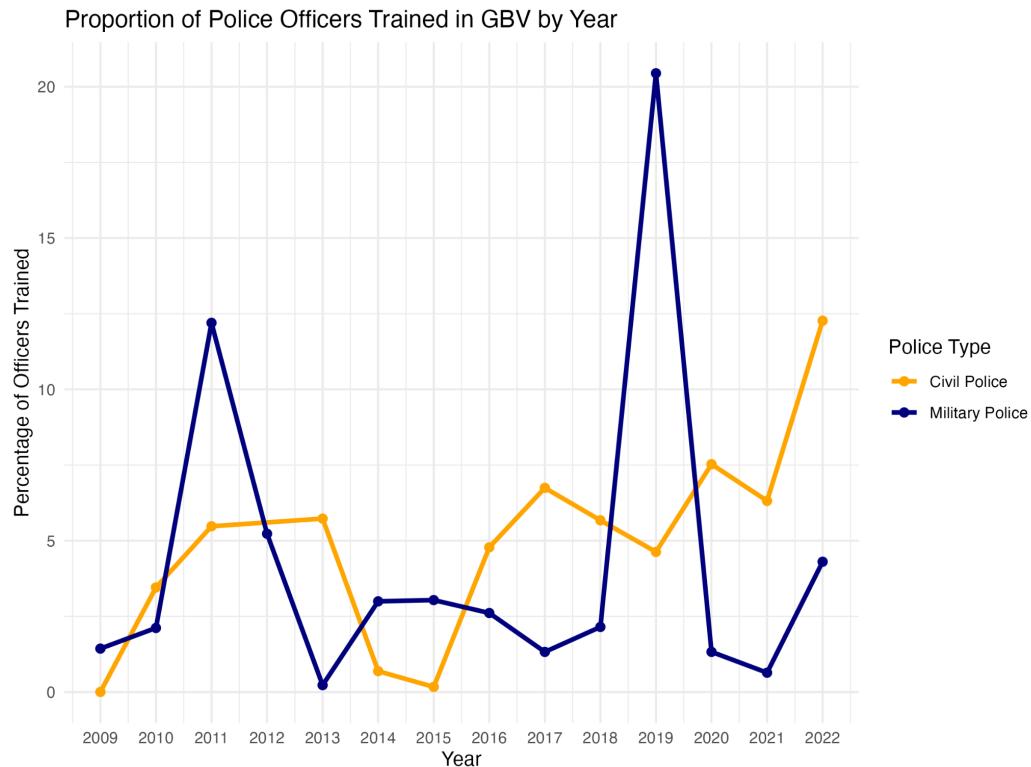


Figure 15. Percentage of police officers trained in GBV at the national level by year (2009 - 2022)

The Military Police also promotes prevention programming regarding gender-based violence and sexual exploitation, but there is great variation across states regarding what is covered in these and what format they take. The graph below shows the proportion of states with these programs, revealing a significant rise in the presence of these since 2009.

Proportion of States with Prevention Programs by Year
Promoted by the Military Police

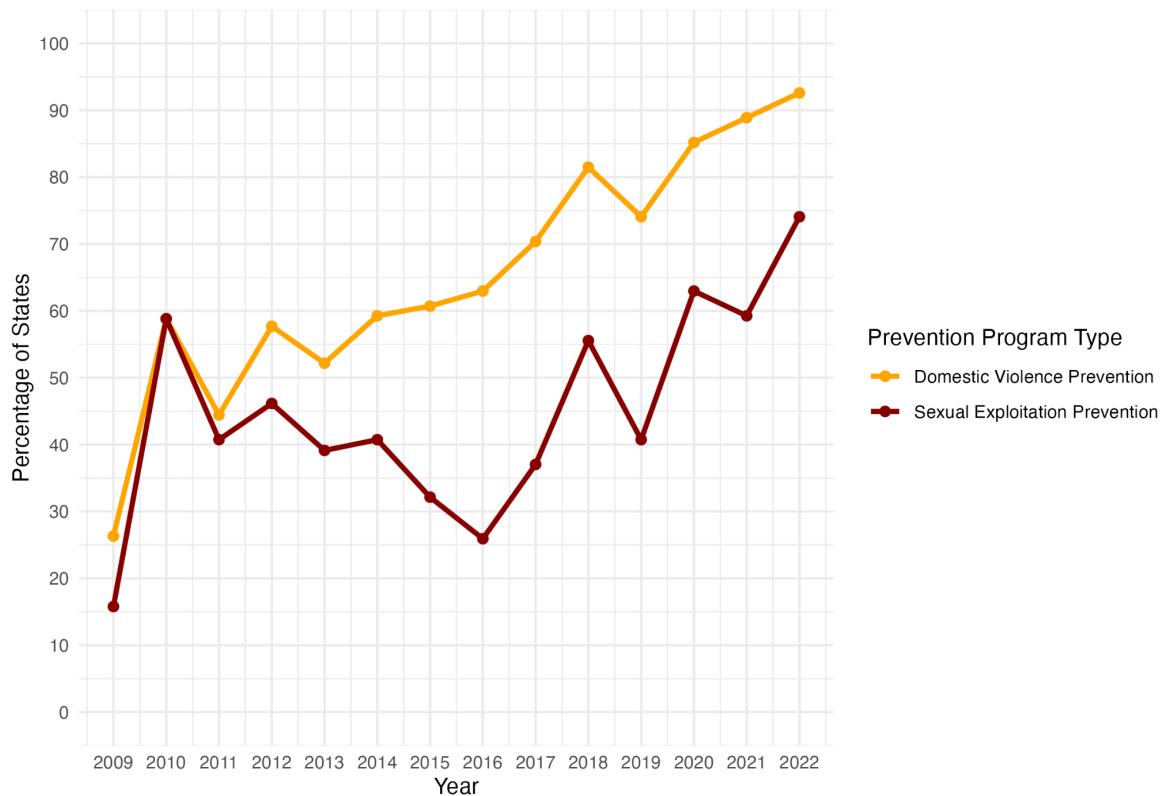


Figure 16. Percentage of states with Military Police Prevention Programs per year (2009 - 2022)

Lastly, as covered by the previous literature and explained in more detail in the previous sections, descriptive representation plays an important role in creating police legitimacy, particularly when it comes to reporting gender-based crimes. That is, women might feel that the police are more prepared to help them with cases of gender-based violence when they see other women as police officers. Therefore, it is important to observe the proportion of women in the police throughout the years to understand if there are integration efforts bringing more women to the institution. The graph below shows the national composition of the Civil Police from 2009 to 2022, revealing a somewhat stable and even descending trend, with less than 30% of the Civil

Police being composed of women. It is interesting to observe that higher-ranking categories, in this case sheriffs, have a larger presence of women than lower-ranking categories.

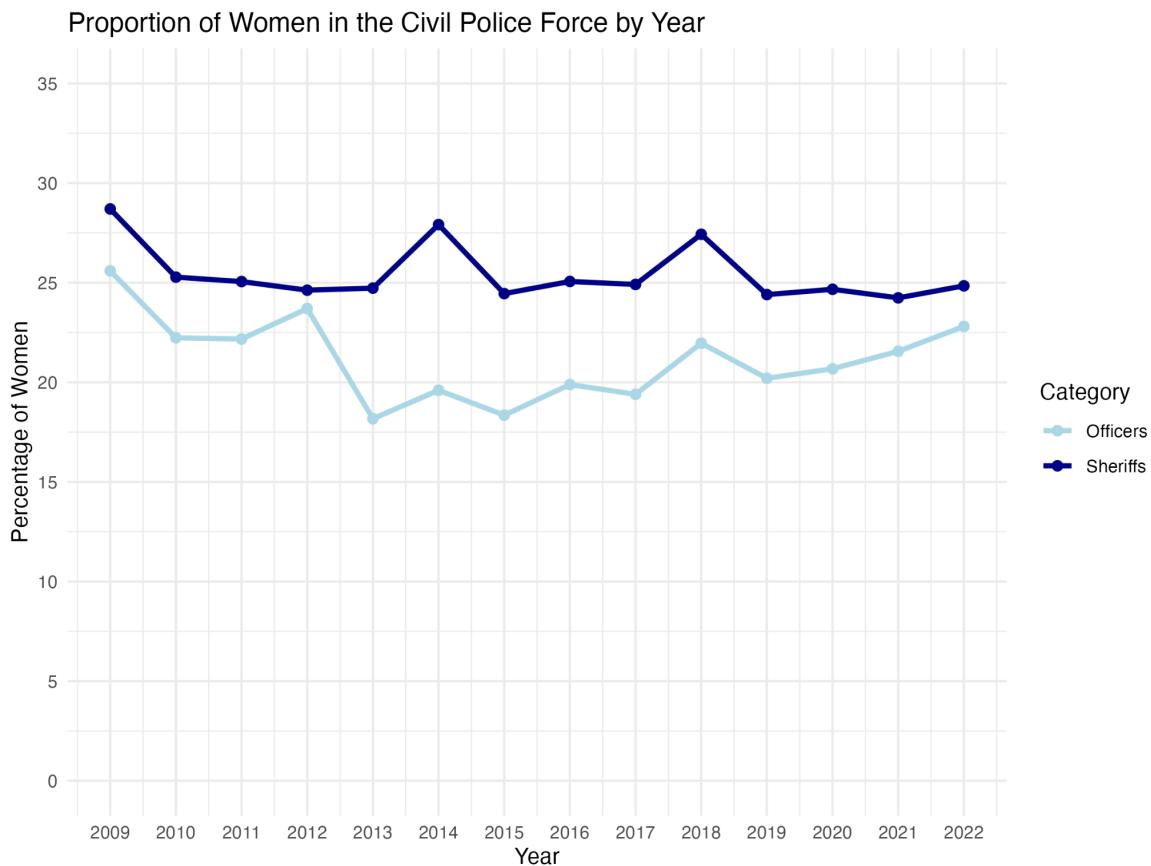


Figure 17. Percentage of women in the Civil Police by year (2009 - 2022)

When it comes to the Military Police, there is some increase in the proportion of women throughout the years, but it remains overall extremely low - less than 15% of the Military Police is composed of women. Similarly, there are more women in the high and low-ranking categories and significantly lower presence among the intermediate ranks.

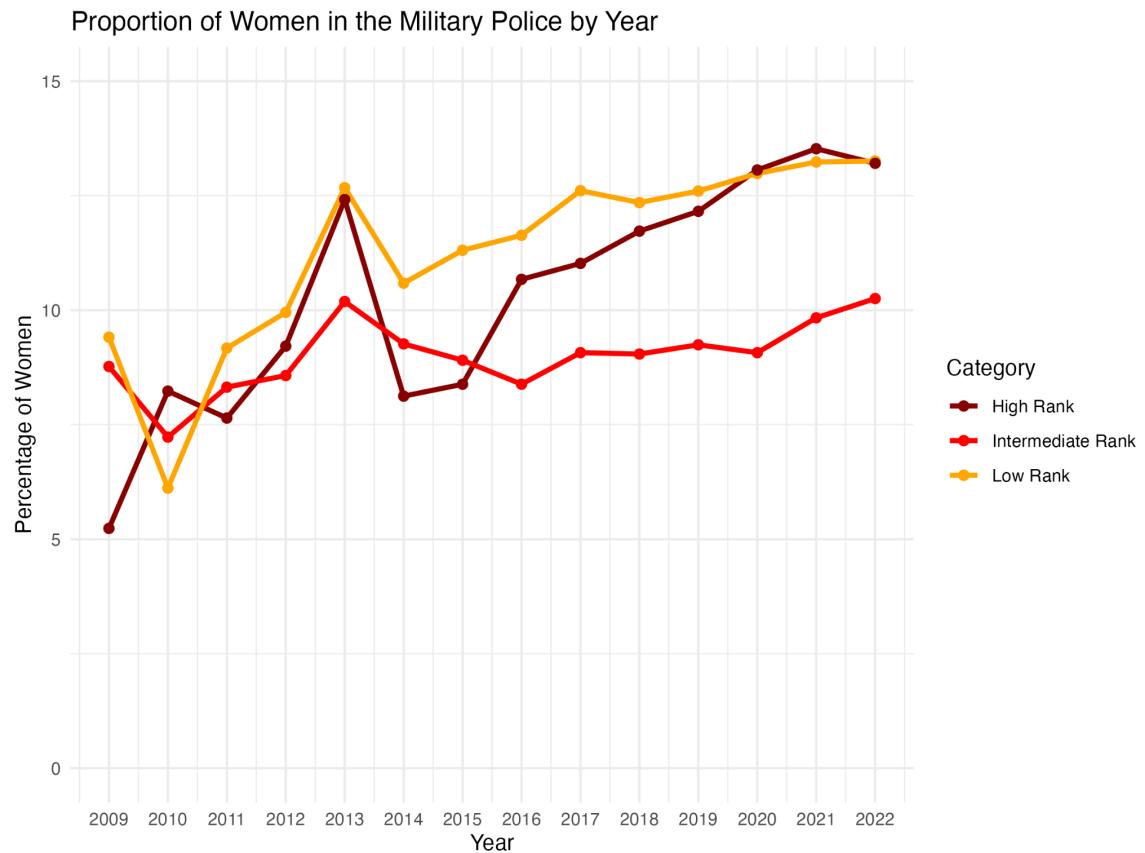


Figure 18. Percentage of women in the Military Police by year (2009 - 2022)

Therefore, this data shows that there is still significant progress to be made when it comes to the descriptive representation of women in the police forces.

The impact of Women's Police Station's Presence

The analysis of the impact of having a WPS in different municipalities is conducted using data from 2020 and 2022, considering that it was possible to find municipality-level disaggregated data for this period regarding the presence of WPS. To observe the effect of the Women's Police Stations, I first conduct linear regression analysis to understand the correlation between WPS interacted with important predictors of violence - HDI and Fertility Rate - and

gender-based violence rates for the municipalities in each year. Secondly, I conduct a simplified difference-in-differences analysis of this effect, observing as my treatment group the municipalities that gained a Women's Police Station between 2020 and 2022 and as the control group the municipalities that remained without a WPS.

Table 2, shown below, presents the results of the simple model observing GBV Rate as an economic variable and number of WPS as the main independent variable. The relationship between these two is positive and significant when observed in isolation. That is, municipalities with more Women's Police Stations also had higher rates of reported gender-based violence. The same is true when we control for year-fixed effects and for fertility rate. However, the relationship changes when controlling for Municipal HDI, with Women's Police Stations being then negatively correlated with the GBV Rate, without statistical significance.

Table 2: Dependent Variable: Gender-based Violence Rate per Municipality (2020, 2022)

	<i>Independent variables:</i>			
	(1)	(2)	(3)	(4)
	Year Fixed Effects	Controlling for IDHM 2010	Controlling for Fertility Rate	
Women's Police Stations	18.82*** (4.28)	18.44*** (4.28)	-8.43 (4.34)	16.04*** (4.33)
Constant	109.67*** (1.34)	104.60*** (1.86)	-172.22*** (12.14)	135.38*** (5.94)
Observations	11,048	11,047	11,029	11,045
R ²	0.001	0.003	0.04	0.003

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

To further explore this relationship between Women's Police Stations, HDI and GBV Rates, I tested the interaction between WPS and HDI as an independent variable. The following equation explain the model used:

$$GBV\ Rate = \beta_0 + \beta_1 \times WPS + \beta_2 \times HDI + \beta_3 \times WPS \times HDI$$

Table 3, shown below, presents the results of this model. Places with lower HDI that receive Women's Police Stations also see more reports of Gender-based violence. This would happen because in these places sub notification is higher (as shown in previous graphs), therefore the presence of an institution that facilitates access to reporting mechanisms and increased legitimacy would increase the levels of reported violence. At the same time, places of higher HDI and no presence of WPS also see a high rate of reported violence, as it had been previously shown, since HDI and GBV rate are positively associated. However, an interesting relationship seen is that the interaction between the presence of Women's Police Stations and Municipal HDI generates a negative coefficient. This indicates that in places with high HDI, the presence of Women's Police Stations actually reduces reported GBV Rate.

Table 3: Regression Results: GBV Rate per Municipality

<i>Dependent variable: GBV Rate</i>	
Women's Police Stations (DEAM)	65.14
Municipal HDI (2010)	433.98***
Interaction: DEAM × IDHM_2010	-98.54
Constant	-174.29***
Observations	11,032
R ²	0.05
Adjusted R ²	0.05
Residual Std. Error	133.90 (df = 11,028)
F Statistic	188.92*** (df = 3; 11,028)

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

A possible explanation for this relationship is that, in places with high HDI we would expect that reported violence reflects real violence a lot better than in places with low HDI. That is, in municipalities with higher HDI there is less sub notification. In these places, therefore, the Women's Police Stations would not be fulfilling the role of reducing sub notification as much, they would be, instead reducing real violence, through deterrence mechanisms. Another possible explanation is that places with HDI have lower real violence and therefore Women's Police Stations capture less cases then when it comes to lower HDI municipalities. It is important, to highlight, however, that the coefficient of this interaction is not statistically significant, which can be related to the low number of municipalities that receive a WPS between 2020 and 2022 (only 136 municipalities).

The next table tests the same relationship, using fertility rate information for the interaction. It is explained by the following model:

$$GBV\ Rate = \beta_0 + \beta_1 \times WPS + \beta_2 \times Fertility\ Rate + \beta_3 \times WPS \times Fertility\ Rate$$

The results reinforce the same relationship as table 4, considering that Fertility Rate and HDI are negatively correlated. In municipalities with low fertility rate (which are municipalities with higher HDI), police stations lead to a decrease in the rate of reported GBV. This can be interpreted like the previous graph. Similarly, higher fertility rates, without the presence of a WPS are associated with lower reported GBV, considering that these are municipalities have lower HDI and therefore may face more difficulties when it comes to reporting, leading to a high level of omitted violence. Lastly, in municipalities with high fertility rates (low HDI) and presence of WPS, there is an increase in the reported GBV, since the implementation of Women's

Police Reports in this region might be leading to an increase in the ability and willingness of victims to report. It is important to mention, however, that the coefficients connected to the number of Women's Police Stations are not statistically significant, which might be connected to the low number of observations that gained a WPS between 2020 and 2022.

Table 4: Regression Results: GBV Rate per Municipality

<i>Dependent variable: GBV Rate</i>	
	GBV Rate (per 100,000 women)
Women's Police Stations (DEAM)	-18.91 (21.69)
Fertility Rate (2010)	-12.29*** (2.65)
Interaction: DEAM × Fertility Rate	19.18 (11.66)
Constant	136.68*** (6.00)
Observations	11,048
R ²	0.004
Adjusted R ²	0.004
Residual Std. Error	137.04 (df = 11,044)
F Statistic	13.95*** (df = 3; 11,044)

Note: *p<0.1; **p<0.05; ***p<0.01

Lastly, to attempt a causal measure of the impact of the Women's Police Stations, I conducted a difference-in-difference analysis across the years 2022 and 2020. The treated group observed in the graph below contains 136 municipalities, which did not have a WPS in 2020 but had one in 2022. The control group contains 5,032 municipalities that did not have a WPS in 2020 or 2022. As shown in the graph below, with the exception of 2018, these two groups followed a somewhat parallel trend, which allows me to conduct this difference-in-differences analysis. However, a larger treatment group would make this causal analysis a lot more precise.

Difference-in-Difference: GBV Rate in Treated vs. Untreated Groups

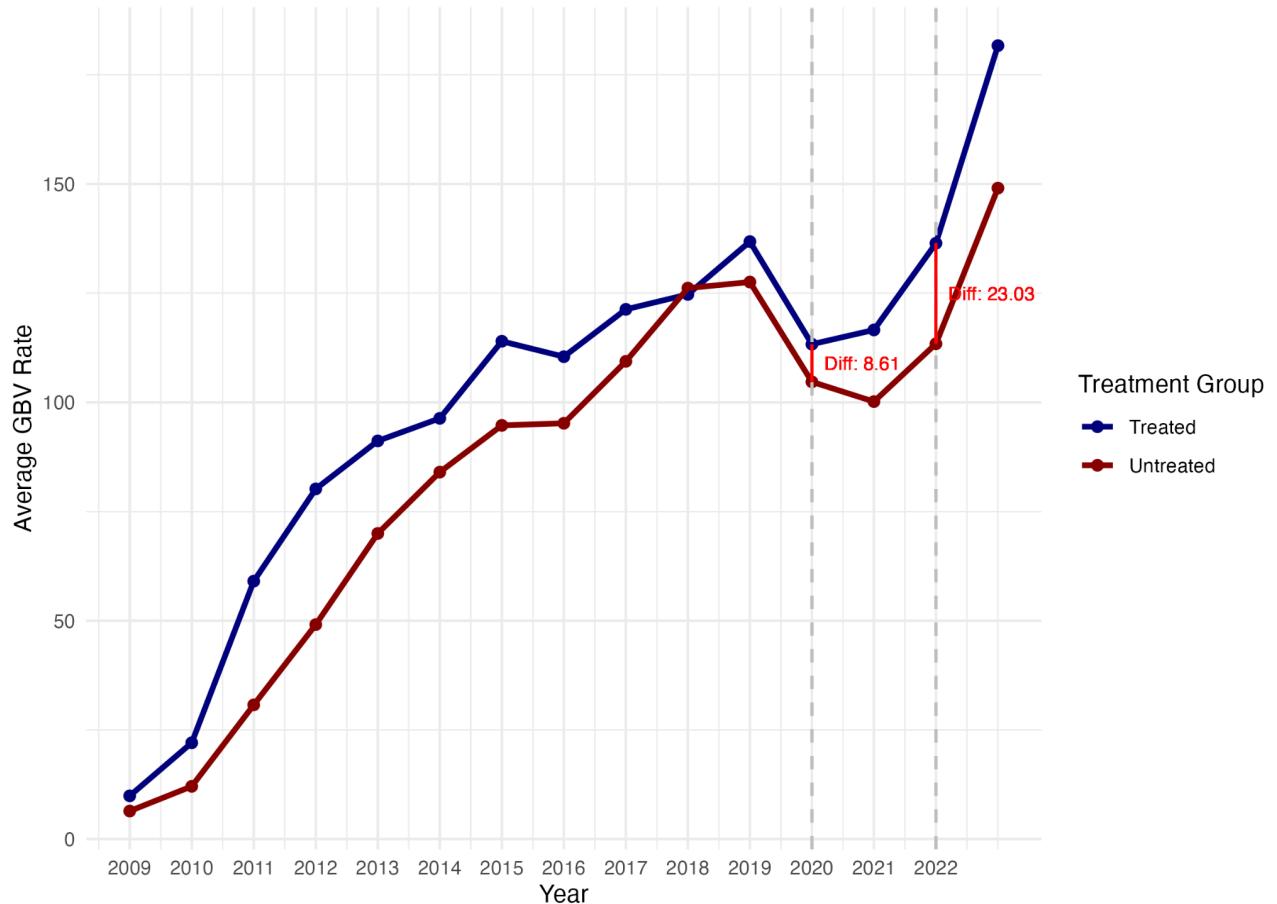


Figure 19. Trends of GBV among treated and untreated groups of the difference-in-differences analysis

The model below shows the relationship being measured in the difference-in-difference analysis:

$$GBV\ Rate = \beta_0 + \beta_1 \times WPS + \beta_2 \times Year2022 + \beta_3 \times WPS \times Year2022$$

As presented in the table below and on table 2, the effect on GBV Rate of implementing a Women's Police Station is positive, which means that the implementation of a WPS leads to

more reports of gender-based violence. However, the effect is not statistically significant, which can again point to the lack of statistical power of the size of the treated group.

Table 5: Regression Results: GBV Rate per Municipality

<i>Dependent variable: GBV Rate</i>	
	GBV Rate (per 100,000 women)
Women's Police Station	8.61 (11.97)
With Year Fixed Effect (2022)	8.72*** (2.75)
Interaction: Women's Police Station × 2022	14.41 (16.93)
Constant	104.70*** (1.94)
Observations	10,326
R ²	0.001
Adjusted R ²	0.001
Residual Std. Error	137.77 (df = 10,322)
F Statistic	5.16*** (df = 3; 10,322)

Note:

*p<0.1; **p<0.05; ***p<0.01

Therefore, these analyses partially support the hypotheses established in previous sections. Women's Police Stations reduce omitted violence, as predicted in hypothesis 1, but this only happens among municipalities with lower HDI, and the relationship is not statistically significant. Although this is not completely provable by the analysis, since it is not possible to have access to the data on real violence, the analysis supports the argument that Women's Police Stations also reduce real violence (made in Hypothesis 2), showing a deterrence effect particularly among municipalities with high HDI. Additionally, considering the trends of municipalities with higher HDI having higher rates of reported GBV (shown in trend Y), we find support for hypothesis 4, which states that higher development is associated with lower rates of omitted gender-based violence. Lastly, the relationship between Women's Police Stations in high HDI municipalities, of reducing reported rates of violence, and therefore capturing less

occurrences points to the validity of hypothesis 3, that predicts that higher development is associated with lower rates of real gender-based violence, but this is also not fully proved by the analysis, since there is no data on real violence.

The impact of Maria da Penha Patrol

An additional analysis of the impact of gender-informed policing considers the impact of the Maria da Penha patrols. Here I am analyzing the impact of this program on the levels of domestic violence and homicides, because they do not target sexual violence. It is important to mention that, in this analysis I am working with a small number of observations (345 municipality-year observations), because information on the presence of patrols is only available at the municipality level for the capitals. Table 6 presents the effect of the patrols on reported domestic violence rates, controlling for other variables:

Table 6: Dependent Variable: Domestic Violence Rate in Brazilian Capitals

	<i>Independent variables:</i>			
	(1)	(2) Year Fixed Effects	(3) Controlling for IDHM 2010	(4) Controlling for Fertility Rate
Rota MP Capital	79.47** (38.38)	-0.73 (1.48)	-1.12* (0.60)	-1.12* (0.61)
IDHM 2010			10.82*** (3.18)	
Fertility Rate (2010)				0.28 (0.74)
Constant	-3.16 (17.59)	5.11*** (0.99)	-2.36 (2.35)	5.07*** (1.37)
Observations	345	345	345	345
R ²	0.036	0.041	0.043	0.011

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

It presents a positive and statistically significant relationship between the Patrols and Domestic Violence Rates, which becomes negative and a lot smaller when controlling for variables such as HDI and Fertility Rate. It is interesting to observe that, unlike the relationship between WPS, the coefficients when controlling for HDI and when controlling for fertility rate go in the same direction, which is unexpected given the inverse relationship of these variables. To explore this relationship in more details, on tables 7 and 8 I look at the effect of patrols interacted with HDI and with fertility rate.

Table 7: Impact of Rotas MP and HDI in Domestic Violence Rate in Brazilian Capitals

<i>Dependent variable: DV Rate</i>	
	Domestic Violence Rate
Rota MP	-39.13 (62.08)
Municipal HDI 2010	131.53*** (42.39)
Rota MP × IDHM 2010	74.82 (84.25)
Constant	-52.71* (31.28)
Observations	345
R ²	0.062
Adjusted R ²	0.054
Residual Std. Error	53.73 (df = 341)
F Statistic	7.57*** (df = 3; 341)

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 8: Impact of Rotas MP and fertility rates in Domestic Violence Rate in Brazilian Capitals

	<i>Dependent variable</i>
	Domestic Violence Rate
Rota MP	79.47** (38.38)
Fertility Rate (2010)	25.93*** (9.54)
Rota MP Capital × Fertility Rate (2010)	-35.64* (21.28)
Constant	-3.16 (17.59)
Observations	345
R ²	0.036
Adjusted R ²	0.027
Residual Std. Error	54.49 (df = 341)
F Statistic	4.18*** (df = 3; 341)

Note:

*p<0.1; **p<0.05; ***p<0.01

The results seen in these regression tables appear contradictory among each other, considering that they show that Patrols are correlated with higher reported rates of domestic violence in municipalities with higher HDI and with higher fertility rate, but we would expect an inverse relationship in this case, considering that municipalities with higher HDI tend to also have lower fertility rates. Some potential reasons for these inconclusive results are the small size of the sample, or, for instance, the oversight of an omitted variable that is at play in this relationship when observing capitals specifically. In the table below, the same analysis is conducted, observing the impact on homicide rate:

Table 9: Impact of Rota Maria da Penha on women's homicide rates in Brazilian Capitals

	<i>Independent variables:</i>			
	(1)	(2) Year Fixed Effects	(3) Controlling for IDHM 2010	(4) Controlling for Fertility Rate
Rota MP Capital	-1.14* (0.60)	-0.73 (1.48)	-1.12* (0.60)	-1.12* (0.61)
IDHM 2010			10.82*** (3.18)	
Fertility Rate (2010)				0.28 (0.74)
Constant	5.58*** (0.29)	5.11*** (0.99)	-2.36 (2.35)	5.07*** (1.37)
Observations	345	345	345	345
R ²	0.010	0.041	0.043	0.011

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

In this regression, the presence of the Maria da Penha patrol is negatively correlated with reported homicide rate, including when the different control variables are inserted. The relationship is statistically significant for all of them, except when controlling for the year fixed effects, which can indicate that other factors correlated with the year analyzed are in fact the ones responsible for the reduction in homicide rate. The negative correlation, however, is what would be expected of this policy. Since it consists in the support for women who already have restraining orders, the main purpose of the policy is to reduce future occurrences of violence and prevent escalation of violence into femicide, therefore, its expected impact would be to reduce the homicide rate. Below, I also observe the effect of the Patrols interacted with HDI and with fertility rate:

Table 10: Impact of Rota MP and IDHM on Women's Homicide Rate in Brazilian Capitals

	<i>Dependent variable</i>
	Women's Homicide Rate with YFE
Rota MP Capital	15.18*** (5.53)
IDHM 2010	16.29*** (3.65)
Rota MP Capital × IDHM 2010	-21.50*** (7.26)
Constant	-6.83** (2.85)
Observations	345
R ²	0.098
Adjusted R ²	0.051
Residual Std. Error	4.63 (df = 327)
F Statistic	2.09*** (df = 17; 327)

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 11: Impact of Rota MP and Fertility Rate on Homicide Rate in Brazilian Capitals

	<i>Dependent variable</i>
	Women's Homicide Rate with YFE
Rota MP Capital	-9.24*** (3.31)
Fertility Rate (2010)	-0.64 (0.82)
Rota MP Capital × Fertility Rate (2010)	4.57** (1.84)
Constant	6.73*** (1.52)
Observations	345
R ²	0.028
Adjusted R ²	0.020
Residual Std. Error	4.70 (df = 341)
F Statistic	3.31** (df = 3; 341)

Note:

*p<0.1; **p<0.05; ***p<0.01

These graphs show that in places of high HDI and low fertility rates, the presence of the Maria da Penha Patrols is associated with a reduction in the homicide rate. In places with high fertility and low HDI, however, the presence of Maria da Penha Patrols is associated with higher rates of homicide. While the first relationship described appears coherent, the second is harder to

explain. Homicide rates are seen as the most reliable data in terms of gender-based violence since it is a lot harder for a homicide to not be reported than it is for a case of domestic or sexual violence. Therefore, it would not make sense to observe this second relationship as increasing the reporting, but as related to actual violence. Again, the inconclusiveness of these relationships may be related to the small sample or to an omitted variable that is relevant for the capitals. Additionally, the homicide rate used here comes from the System of Information of Mortality and only includes general homicide, not differentiating on what are the ones that are femicides. Therefore, this data may be hiding a decrease in femicides (which the Patrols target) due to an increase in other categories of women's homicide.

Conclusion

This capstone paper discussed the relevance of gender-centered police initiatives in the context in which the police is an important part of the ecosystem to support victims of gender-based violence. As a historically violent and masculine institution in Brazil, visible initiatives such as the Women's Police Stations, play an important role in increasing police legitimacy, along with willingness to report among Brazilian women.

A challenge in analyzing the impact of different programs and policies that aim to reduce violence against women is that it is difficult to interpret whether an increase in the rate of gender-based violence is negative or positive. That is, whether an increase in rate represents an increase in real violence, or whether it just shows more women reporting violence that was already happening. Looking at different correlations and interactions with HDI - which is assumed to be related to violence in general - this capstone attempted to differentiate the impact of these programs in different municipalities. Future research should focus on understanding what these changes mean in each context and what are important variable to understand whether a rise in violence rate is positive or negative.

Additionally, data collection on the topic still needs to improve substantially. Although the health sector has extensive information on each case of violence against women, the data made public from the public safety institutions only offers insight on the state-level and does not include important information on domestic violence. Moreover, the survey conducted by the Brazilian government to create a profile of the Civil and Military is a commendable effort and includes extensive information on these bodies, but it lacks some standardization, changing

significantly every year and with some states not answering very relevant questions regarding the composition of the staff or training. Future research could look for more detailed information on these datasets by submitting requests to the government transparency portal, which was not possible for this capstone project due to timeline constraints.

Lastly, it is of utmost importance to evaluate the causal impact of the main policies currently in place to combat gender-based violence, considering the relevance of this topic to the lives of every woman. Although policing is an important aspect of it, it is also important to understand how projects from the judiciary or social assistance sectors play a role in preventing and combating gender-based violence. It is also fundamental that these policy evaluations look at the distinct impacts of interventions in the different municipalities of Brazil, considering the immense variation that there is among them and that this segmented analysis can provide important insights on what projects work better for each context instead of trying to implement a “one-size-fits-all” intervention.

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