UPPSALA UNIVERSITY

DEPARTMENT OF ECONOMICS

MASTER'S THESIS

30 ECTS

UPPSALA UNIVERSITET

The Ripple Effect of Gang Violence

Has the Rise in Shootings Fueled
Anti-Immigrant Sentiment in Sweden?

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June 2025

Abstract

Sweden is currently grappling with an unprecedented surge in gang-related shootings, disproportionately involving young men with immigrant backgrounds. This phenomenon has not only become a pressing social issue but also a politically charged topic nationwide. In both public discourse and media coverage, it has become increasingly common to draw connections between gang crime and immigration. This thesis therefore examines whether the rise in gang-related shootings between 2017 and 2023 has influenced public attitudes toward immigrants in Sweden, and to what extent this relationship is moderated by individuals' level of news consumption. Amid rising public fear of crime, an increasingly hostile political climate and growing anti-immigrant sentiment, it becomes crucial to explore how these dynamics interact. Drawing on regional-level data on shootings from the Swedish Police Authority and survey responses from the SOM Institute, the study applies a panel data approach with two-way fixed effects and modern difference-in-differences estimators to account for heterogeneous treatment effects and variation in timing. The results reveal a weak but meaningful association: higher levels of gun violence are linked to more negative attitudes toward refugee intake. Importantly, the effect is significantly more pronounced among individuals with a high level of news consumption. This suggests that media exposure amplifies the perceived link between immigration and gun violence. These findings support theoretical frameworks on agenda-setting, salience, symbolic threat, and scapegoating, indicating that violent events, when framed in particular ways by the media can reinforce exclusionary public attitudes. While modest, the findings underscore that the extent to which shootings influence public attitudes depends on individuals' level of news consumption.

Contents

1 Introduction

In recent years, Sweden has witnessed a sharp increase in gang-related gun violence, accompanied by growing public fear of crime and a more hostile political discourse on immigration. This shift has been followed by the implementation of stricter migration policies and regulations. In both political rhetoric and media coverage, this violence is increasingly associated with individuals of foreign background. Hence, this paper examines whether the rise in shootings between 2017 and 2023 has intensified anti-immigrant sentiment in an already migration-aware political climate and explores the extent to which news media exposure may reinforce this relationship.

For long, Sweden been viewed as an ideal welfare state globally— an emblem of social equality, tolerance and progressive values. However, in the last decade this reputation has been challenged by an alarming and growing crisis. Once considered a safe haven in Europe, Sweden is now struggling with one of the highest rates of gun-related homicides on the continent due to escalating gang conflicts. In 2022, Stockholm's gun-murder rate per capita was roughly 30 times that of London's (Sunnemark, 2023). And Since 2013, the number of fatal shootings has more than doubled, making Sweden the only European country today where gun violence has steadily increased over the past decade (Hradilova Selin, 2021). In 2021, the Swedish National Council for Crime Prevention published a report analyzing the trend in gun homicide levels in Sweden compared to that in 22 other European countries (Hradilova Selin, 2021). The report showed that Sweden experienced 4 gun deaths per million inhabitants per year, which was far above the European average of 1.6 (Hradilova Selin, 2021). In fact, no other country in the study experienced an increase in gun related homicides comparable to that of Sweden. While most European countries saw a consistent decline, some recorded temporary increases. However, these were limited to shorter periods and nowhere near the sustained and significant rise observed in Sweden over multiple consecutive years (Hradilova Selin, 2021).
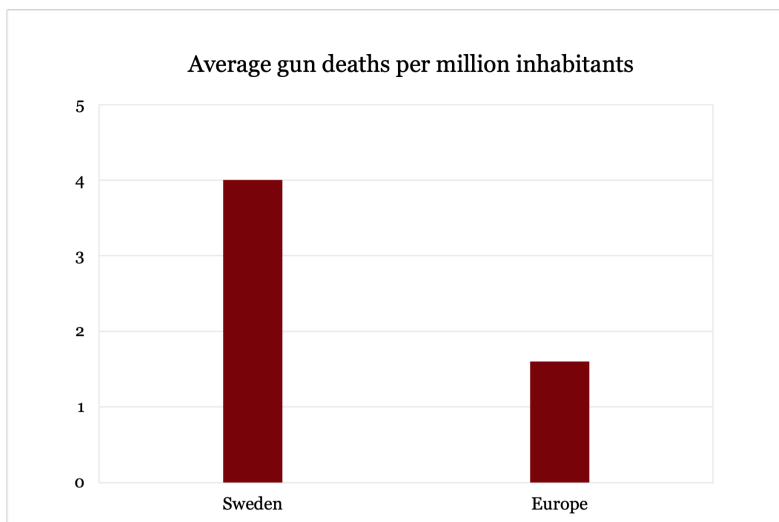

Figure 1: Annual average of gun deaths per million people
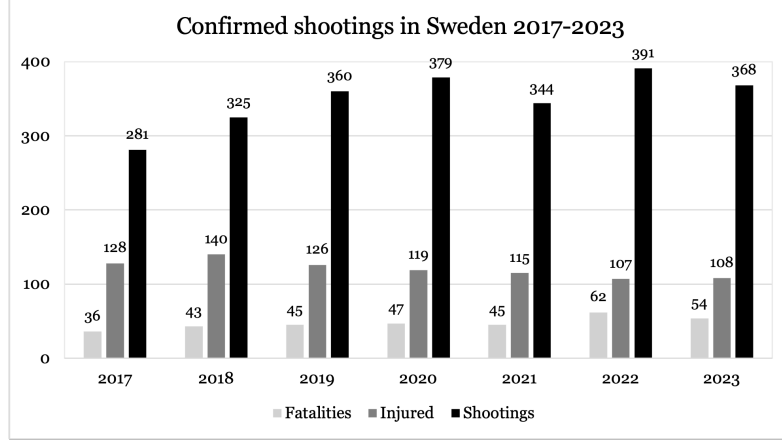*Source: Brå (Swedish National Council for Crime Prevention)*

Figure 2: Confirmed shootings in Sweden between 2017–2023.
Source: Brå (Swedish National Council for Crime Prevention)

According to the National Council for Crime Prevention eight out of ten fatal shootings today are linked to criminal networks (Hradilova Selin, 2021). Both victims and perpetrators of such violence are predominantly of foreign background (Westfelt, 2025). Specifically, individuals with an immigrant[1] background account for 80% of the victims and 64% of perpetrators in shootings today (Westfelt, 2025). These associations are often subtly reinforced in Swedish media coverage which frequently emphasizes the foreign background of those involved, a framing that potentially could amplify the perceived link between immigrants and gang violence. Given that most individuals are not directly exposed to such violence but learn about it primarily through media coverage, it is crucial to understand how news consumption shapes public perceptions and attitudes toward crime and immigration. Furthermore, the past decade has been marked by a parallel increase in support for populist radical-right parties, most notably the Sweden Democrats who are now the second-largest party in parliament. This political shift has contributed to making immigration one of the most prominent and polarizing topics in Swedish political discourse. The radical-right Sweden Democrats have been particularly vocal in attributing the rise in gang-related crime to immigration (Sverigedemokraterna, nd), a narrative that has also gained traction in broader public debates (SVT Nyheter, 2024; Riksdagen, 2019). Although immigrants and lenient migration policies are often cited as key drivers of escalating gang violence, most scholarly research instead points to long-standing and deeply rooted socioeconomic disparities as the underlying causes (Sarnecki et al., 2025; Hällsten et al., 2013). Moreover, public sentiment has also shifted in recent years. According to the 2024 Diversity Barometer, attitudes toward immigration and diversity have grown more negative compared to previous years (Ahmadi and Önver Cetrez, 2024).

The rise in gang-related crime alongside growing anti-immigrant sentiment makes Sweden a compelling case for study. While the rise in gun violence has been studied in Sweden previously, existing research has primarily focused on the spatial patterns, sociodemographic

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[1]In this paper, the terms *immigrant background*, *foreign background*, and *immigrants* are used interchangeably. Unless otherwise specified, these refer to individuals who are either (a) foreign-born with at least one foreign-born parent, or (b) born in Sweden to one or two foreign-born parents. In both cases, the individual is understood as having a non-ethnic Swedish background.

charachteristics, or the nature and dynamics of shootings (see for example Ceccato et al., 2024; Magnusson, 2025; Rostami, 2017; Sturup et al., 2019, 2020). One notable exception is Wilhelmsson et al. (2021), who go beyond descriptive analysis by examining how gun-related violence impacts the attractiveness of residential areas in Stockholm. In doing so, they extend the scope of earlier research and draw attention to the broader societal consequences of such violence.

Yet, little is known about how such violence might affect the general public beyond those directly involved in criminal activity or victimized by it. Despite the increasing prevalence of gang violence and its potential consequences, this issue remains underexplored in the academic literature. Given that a significant proportion of those involved in gang-related shootings have an immigrant background, this form of violence may trigger broader societal reactions. It is therefore crucial to examine how this concerning trend might influence public opinion on immigration. In a politically charged climate characterized by the growing influence of radical right-wing populism, heightened fear of crime, and rising anti-immigrant sentiment, understanding this relationship becomes imperative. Doing so is not only essential for countering harmful narratives and informing evidence-based policymaking, but it can also help prevent further societal polarization.

However, to the best of my knowledge, no study to date has examined whether the rise in gang-related shootings in Sweden has influenced public sentiment toward immigrants, nor explored how news consumption might shape this relationship. This thesis therefore seeks to address this gap in the literature. In doing so, it also offers deeper insight into one of the most pressing and complex societal challenges currently facing Sweden. Specifically, this paper aims to answer the following two questions:

1. *Has the rise in shootings between 2017 and 2023 influenced public attitudes toward immigrants in Sweden?*
2. *Is this relationship moderated by individuals' level of news consumption?*

To explore these questions, I draw on regional-level data on shootings from the Swedish Police Authority, combined with individual-level survey data from the SOM Institute spanning the years 2017–2023. Using a panel data TWFE approach and modern difference-in-differences estimators - accounting for staggered treatment timing and varying treatment intensities across regions - I analyze how regional changes in gun violence have influenced public attitudes toward refugees over time.

The remainder of this paper is structured as follows: Section 2 provides background on the evolution of gang-related violence in Sweden and how it is framed in media. Section 3 reviews relevant previous research, while Section 4 outlines the theoretical frameworks underpinning this study. Sections 5 and 6 describe the data and methodology, respectively. Section 7 presents the empirical results, followed by a broader discussion in Section 8, including interpretation, suggestions for future research, and concluding remarks.

2 Background

2.1 Structural Conditions and Media Framing of Gang Violence

While this study does not aim to explore the root causes of gang-related violence or the overrepresentation of individuals with foreign backgrounds in Swedish crime statistics, it nonetheless remains essential to consider the broader structural conditions that have enabled such violence to emerge and the ways in which it is framed in public discourse. These dimensions provide critical context for understanding how public attitudes toward immigrants may be shaped in the current climate of rising gun violence.

Public concern about crime in Sweden has increased substantially in recent years. According to the 2023 Eurobarometer, 46% of Swedish respondents identified crime as one of the country's most pressing issues, which is far above the EU average of 9% (European Commission, 2023). Today, most shootings occur in socioeconomically disadvantaged neighborhoods, with both victims and perpetrators typically residing in these areas (Westfelt, 2025). According to the Swedish National Council for Crime Prevention, individuals with a foreign background are significantly overrepresented among suspects in violent crimes (Brå, 2021). Specifically, second-generation immigrants are more than three times as likely to be registered as suspects compared to ethnic Swedes. Among individuals born abroad, the relative risk is 2.5 times higher, while those with one foreign-born parent face a relative risk of nearly twice as high (Brå, 2021). This pattern must be understood in relation to broader social structures. Over the last 30 years, Sweden has experienced deepening residential segregation marked by sharp divides in socioeconomic status, educational outcomes, and employment opportunities (Delmos, 2021). In 2023, the Swedish Police Authority identified 59 "vulnerable areas" in the country, defined by low socioeconomic status and a significant presence of criminal networks (Polismyndigheten, 2023). Notably, nearly 75% of residents in these areas have a foreign background, whereas in *normal* [2] areas, the corresponding figure is 22% (The Global Village, 2019). Children growing up in these areas today face a considerably higher risk of being exposed to crime and violence (Delmos, 2021). In many ways, vulnerable areas exemplify how prolonged residential segregation can produce socioeconomically and ethnically isolated communities that become increasingly disconnected from the rest of society. According to the former government agency *Delegationen mot segregation*, the social disparities in Sweden today are so pronounced that an individual's area of residence can significantly impact their life chances (Delmos, 2021).

Beyond structural inequality, public discourse plays a critical role in shaping perceptions. Media reporting on gang-related shootings often draws attention to the ethnic background of suspects and victims, usually indirectly through names, images, aliases or culturally coded references. Although ethnicity is rarely stated explicitly, the consistent use of such cues signals a non-swedish background. For instance, prominent gang leaders are often referred to by nicknames such as "*the Kurdish Fox*" or "*the Greek*" (see, for example, (Journalisten, 2023; Sveriges Radio, 2023). Repeated exposure to such representations contributes to a narrative in which foreign identity becomes symbolically intertwined

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[2]The term normal is used here to describe areas not officially classified as "vulnerable" by the Swedish Police Authority. The use of this term is purely functional and does not imply any value judgment.

with organized crime, potentially shaping public attitudes over time. Media reports also frequently emphasize that gang violence occurs in "vulnerable areas", neighbourhoods that are already strongly associated with immigration. While this is factually accurate, it risks reinforcing harmful stereotypes by portraying residents of these areas as inherently linked to criminality. Despite the strong presence of criminal networks in these neighbourhoods, the vast majority of residents are not involved in crime. In addition, since most people are not directly exposed to gun violence, they are likely to rely on news sources and social media to make sense of such events. Thus, media framing serves as a powerful mechanism for shaping public perceptions. Media portrayals may not only reinforce the idea that immigration causes gang-related violence, but also perpetuate stereotypes and amplify the notion of immigrants as a societal threat. This dynamic is further intensified by political rhetoric. When political actors promote narratives that associate crime with immigration, they contribute to an increasingly entrenched public belief that immigrants pose a risk to social stability and order. Over time, such discourses can exacerbate fear and harden public attitudes.

2.2   The Spatial and Demographic Patterns of Shootings

The character of shootings in Sweden has changed over time, not only in terms of frequency but also in visibility. While earlier incidents were more likely to occur at night and in marginalized neighborhoods, recent shootings increasingly take place in broad daylight and in central public spaces. Moreover, the number of bystanders and uninvolved individuals affected by such violence has also increased (Wilhelmsson et al., 2021). This spatial and temporal shift likely heightens the salience of gang violence and further amplifies public concern. However, the nature of gun violence in Sweden typically differs from other violent events often studied in public opinion research, such as mass shootings or terrorist attacks. While such events are rare, they typically involve high casualties and trigger immediate but usually short-lived shifts in public sentiment. In contrast, gun violence in Sweden is more frequent, recurring, and often targets one or a few individuals at a time. Hence, attitudinal shifts may instead develop gradually over time, as the public begins to perceive a consistent and systemic pattern of gun violence. This distinguishes the Swedish context from the acute, shock-driven reactions often observed following singular, high-profile attacks.
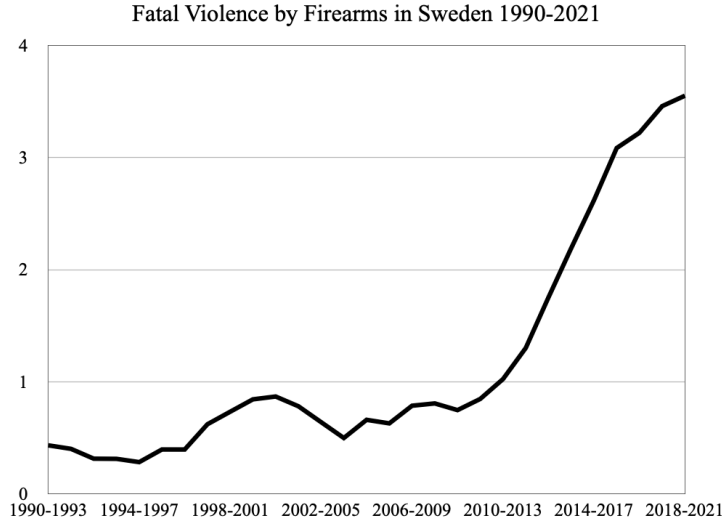
Figure 3: Fatal violence by firearms in Sweden 1990–2021 (per million inhabitants). *Source: Brå (Swedish National Council for Crime Prevention)*

Since 2013, Sweden has experienced a sustained rise in firearm-related violence. Most shootings occur within criminal networks and are largely driven by escalating gang conflicts. (Hradilova Selin, 2021; Polismyndigheten, 2024). The gang networks exhibit a clear age-based hierarchy where older individuals occupy leadership roles while younger individual get recruited to carry out criminal activities (Polismyndigheten, 2025). Teenage boys, in particular, are disproportionately involved in and affected by gun violence. Not only are they increasingly being assigned to carry out contract shootings but they also make up a significant share of those fatally shot (Hradilova Selin, 2021; Westfelt, 2025). In fact, the most notable difference between Sweden and other European countries lies in gun-related homicides involving individuals aged 15–29, as the rise observed in Sweden is almost exclusively confined to this age group (Hradilova Selin, 2021; Hradilova Selin et al., 2024). In 2021, the gun homicide rate among 20-29 year olds in Sweden was 18 deaths per million, while in most other European countries it was between 0-4 deaths per million. For the broader 15–29 age group, the rate in Sweden was 42 deaths per million while the European average was 28 (Hradilova Selin, 2021; Hradilova Selin et al., 2024). This means that young males in Sweden face a dramatically higher risk of being shot to death compared to their counterparts elsewhere in Europe (Hradilova Selin, 2021; Hradilova Selin et al., 2024; Sturup et al., 2019).

Recent data from the Swedish Police Authority also shows that the average age of suspects in shootings has seen a sharp decline over time (Polismyndigheten, 2025). Since 2019, the share of suspects under the age of 18 in this crime category has more than doubled. In 2024, minors accounted for 25% of all shooting suspects and 33% of those involved in fatal shootings (Polismyndigheten, 2025). Gun violence is also geographically concentrated in the southern parts of Sweden, particularly in Stockholm, Gothenburg, and Malmö, where most of the vulnerable areas are located. Despite covering only a small portion of the country's land area, vulnerable areas account for a disproportionately large share of shootings (Polismyndigheten, 2023). The spatial and demographic

concentration of gun violence in immigrant-dense neighborhoods, combined with the fact that both perpetrators and victims are often of foreign background, increases the risk of broad generalizations and anti-immigrant sentiments. When emphasized by media and political discourse in distorted ways, such patterns can cause public fear of crime to translate into anti-immigrant hostility. Against this background, a positive association between exposure to gun violence, whether direct or mediated, and negative attitudes toward immigrants may be expected.
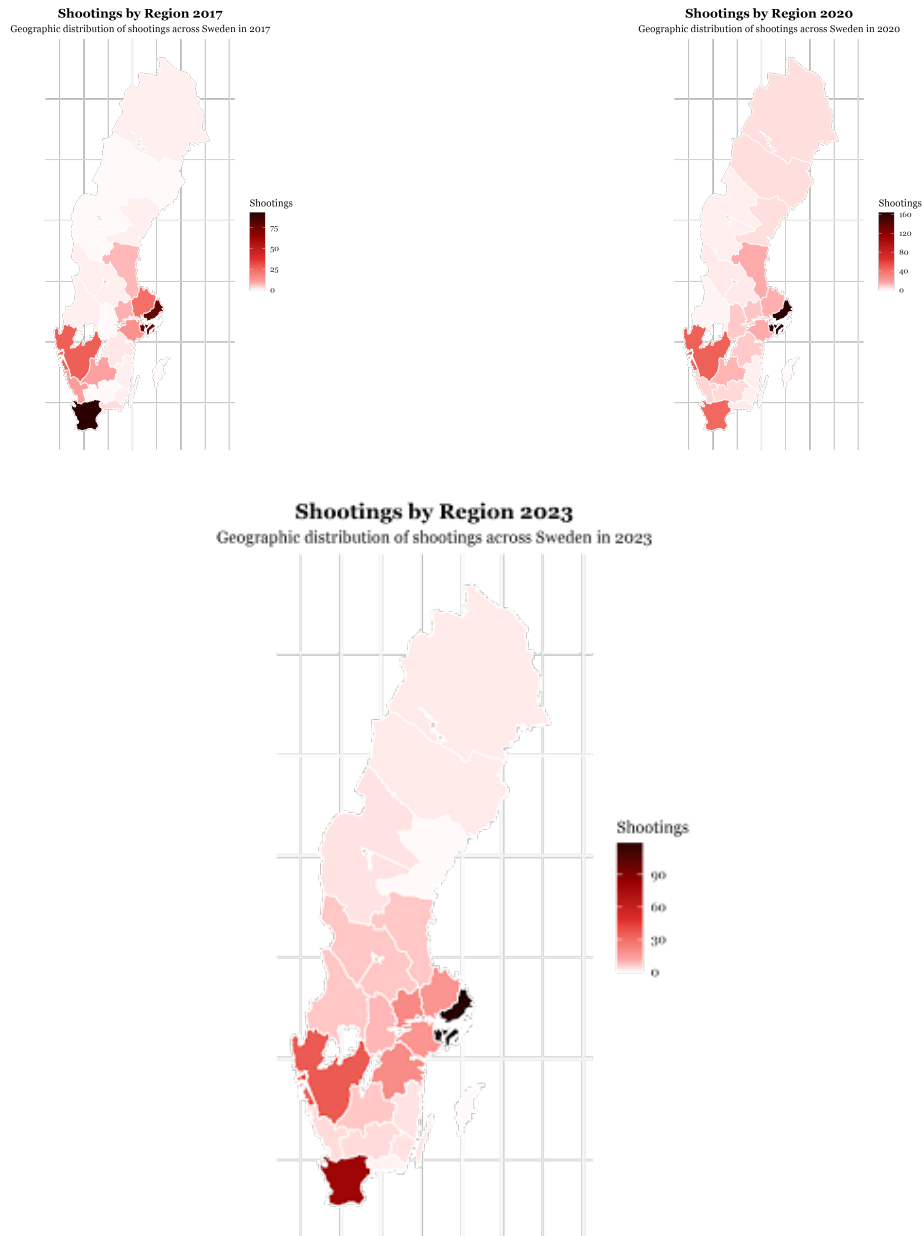

Figure 4: These figures illustrate the spatial distribution of shootings in Sweden in 2017, 2020, and 2023, showing a persistent concentration in the southern regions, particularly in Stockholm, Västra Götaland, and Skåne. *Source: Polismyndigheten*

2.3 Shifts in Swedish Immigration Policy and Rhetoric

Sweden has a long-standing history of welcoming immigrants. Since the Second World War, the country has taken in successive waves of immigrants, including both refugees and asylum seekers. This has contributed to shaping a national identity grounded in humanitarianism, openness and international solidarity. While many European countries moved toward more restrictive immigration policies in the 1990s and 2000s, Sweden maintained an open and liberal stance. In recent years, however, there has been a paradigm shift in Swedish migration politics. Like many other European countries, Sweden has in the last decade experienced both a rise in populist radical-right parties and a substantial influx of immigrants. The 2015 refugee crisis in particular, during which Sweden received the highest number of asylum seekers per capita in Europe (Skodo, 2018), marked a turning point in both immigration policy and political rhetoric. Since then, regulations have become increasingly restrictive, and public discourse more polarized and hostile. In 2024, Sweden granted the lowest number of asylum-related residence permits in 40 years, since 1985 (Rundberg et al., 2025). Furthermore, recent proposals by the ruling coalition to substantially raise existing repatriation grants reflect a political trajectory aimed at reducing the immigrant population (Törnmalm and Rundberg, 2024). Today, discussions around immigration are increasingly framed through the lenses of security threats, welfare burdens and integration challenges. In addition, gang-related violence and immigration have become dominant themes in political rhetoric. These developments are central to understanding the potential link between rising gun violence and growing anti-immigrant sentiment.

Importantly, this political shift has not been formed in a vacuum. Instead, it reflects broader changes in public opinion. Support for the Sweden Democrats, a party long stigmatized for its anti-immigration stance, has grown substantially and its ideas have increasingly shaped mainstream political discourse. Several parties that once refused to collaborate with SD have gradually moved closer to its positions, both rhetorically and in policymaking. This alignment reflects a growing responsiveness among political elites to public concerns over immigration and crime. Hence, it becomes crucial to examine whether rising gun violence has contributed to shifting public attitudes. Doing so may help explain the broader transformation of Sweden's political and policy landscape in which immigration is increasingly framed as a threat.

3 Literature Review

3.1 The Crime and Immigration Nexus

Although rigorously studied for over a century, the relationship between crime and immigration remains one of the most controversial and polarizing topics in contemporary public discourse. A commonly held belief is that immigrants are more prone to criminal behavior than the native population. Yet, numerous studies over the past two decades have challenged this narrative. Ousey and Kubrin (2018) conducted a meta-analysis of 51 U.S. studies from 1994 to 2014 and found a modest but consistent association between higher levels of immigration and lower crime rates. Although empirical evidence from multiple countries have shown that immigration does not drive crime (Jung, 2020; Nun-

ziata, 2015; Ousey and Kubrin, 2009; Reid et al., 2005; Sydes, 2017), and may in some cases even contribute to crime reduction, (Ignatans and Matthews, 2017; Jung, 2020; Lee and Martinez, 2009; Ousey and Kubrin, 2018, 2009; Reid et al., 2005), other studies have identified small but positive links with specific types of crime. Bianchi et al. (2012) find that immigration slightly increases robbery rates in Italian provinces, while leaving all other types of crime unaffected, resulting in a negligible overall impact. Spenkuch (2014) finds that while there is no statistically significant relationship between immigration and violent crime, there is a modest but significant association between immigration and certain types of property crime. However, this effect is driven primarily by immigrants with low educational attainment and is sensitive to model specification. Similarly,Bell et al. (2013) find that the 1990s asylum wave to the UK modestly increased property crime, while the post-2004 EU migration slightly reduced it. However, neither wave affected violent crime and the results point to differences in labor market opportunities as a possible explanation. Taken together, these studies suggest that modest increases in certain types of property crime have been observed under specific conditions, such as limited labor market access or low levels of education among migrants. But violent crime remains largely unaffected. These findings highlight the importance of broader socioeconomic and structural factors in shaping immigration-related crime outcomes.

While international research indicates weak to no links between immigration and crime, Nordic studies often report an overrepresentation of individuals with a foreign background among offenders. (Adamson, 2020; Sarnecki et al., 2025). In their recently published paper, Sarnecki et al. (2025) examine the link between immigration and violent crime in Sweden. Their findings revealed little to no association between the share of immigrants in a municipality and reported violent crimes. However, the study focused only on foreign-born individuals, excluding second-generation immigrants who are more often registered as suspects than foreign-born. The authors also emphasize that while immigration in and of itself does not appear to be a driver of crime, it can still have significant socioeconomic effects which may indirectly or directly influence crime rates over time. Hence, they conclude that stricter migration policies have little impact on crime prevention. Prior to this,Hällsten et al. (2013) analyzed the recorded crime gap between childhood immigrants and children of immigrants, compared to natives. They found that young men with an immigrant background were significantly overrepresented in crime statistics. However, when accounting for parental socioeconomic status and neighborhood characteristics during childhood, much of the gap - between 50% and 80% - can be explained. This suggests that the observed difference in crime involvement between children of immigrants and children of natives can largely be attributed to socioeconomic inequalities. The authors also examine whether shared national or cultural background can explain the remaining gap, but find only weak correlations. Again, this supports the view that structural and social disadvantages, rather than inherent cultural traits, underlie the observed disparities in crime rates (Hällsten et al., 2013). Overall, the findings of this paper challenge simplified narratives linking immigration to crime. Instead, the authors argue that involvement in crime often reflects a continuation of an already adverse life trajectory (Hällsten et al., 2013). This interpretation is consistent with foundational criminological frameworks that emphasize the role of social marginalization and structural inequality in shaping criminal behavior (e.g., Merton, 1938; Shaw, 1942; Becker, 1968).

3.2 Crime and Prejudice Toward Immigrants

Drawing on historical parallels when it comes to both violent and organized crime can offer valuable insight into the contemporary Swedish context of increasing gang-related shootings and anti-immigrant sentiments. Several studies have examined how the occurrence of major violent or threatening events can shape public attitudes toward immigrants(Andersen and Mayerl, 2018; Boydstun et al., 2018; Echebarria-Echabe and Fernández-Guede, 2006; Esses et al., 2002; Ferrín et al., 2020; Hawi et al., 2019; Van Assche and Dierckx, 2021). Research shows that anti-immigrant sentiment often intensifies when perpetrators are perceived to belong to an already stigmatized groups. In such cases, events like terrorism can provoke fear and anger toward communities seen as linked to the attackers (Frey, 2022; Van Hauwaert and Huber, 2020). This pattern is common in response to collective threats. Specifically, the practice of collective liability also known as scapegoating, whereby an entire group is held accountable for the actions of a few, is not a new phenomenon. For instance, Czymara and Schmidt-Catran (2017) found that German public attitudes toward immigrants, particularly those from the Middle East and Africa, significantly decreased between April 2015 and January 2016. This decline was mainly linked to the mass sexual assaults reportedly carried out by men of Arab or North African origin during the 2016 New Year's Eve celebrations. Likewise, Legewie (2013) observed an increase in anti-immigrant attitudes in Spain following the 2004 Madrid train bombings.

Evidence form multiple studies suggest that terrorist attacks perceived to be motivated by Islam often trigger fear of Muslim communities and the broader immigrant population, framing them as threats to Western societies (Hopkins, 2010; Legewie, 2013; Spilerman and Stecklov, 2009). Drawing on panel survey data from the United States, Hopkins (2010) found that natives' attitudes toward immigration became noticeably more negative in the immediate aftermath of 9/11, although this shift in sentiment was short-lived. Terrorist attacks carried out in the name of Islam have repeatedly worsened attitudes not only toward Muslims but also toward unrelated minority groups perceived as culturally or religiously similar, such as non-Muslim Arabs, Sikhs, and Hindus. While most research focuses on violent events, similar responses have been observed in other types of perceived threats. For instance, recent studies have shown that anti-immigrant attitudes fueled by the COVID-19 pandemic extended beyond the Chinese community, affecting broader Asian and Hispanic populations (Ramirez and Kim, 2024). These so-called spillover effects illustrate how people who are only symbolically associated with a threat due to ethnicity, religion, or culture can become targets of hostility and suspicion. This reflects a broader process of social categorization, where symbolic boundaries between "us" and "them" become especially more pronounced during times of perceived threat (Ramirez and Kim, 2024). Others have instead identified a rise in pro-Muslim sentiment following 9/11 (Panagopoulos, 2006). According to Boydstun et al. (2018) this counterintuitive finding may reflect personal experiences, since people tend to interpret news about crime or terrorism through the lens of their own social networks. For instance, individuals who personally know black people may be less inclined to associate race with crime, just as those who know muslims personally may be less inclined to associate Islam with terrorism (Boydstun et al., 2018).

Furthermore, organized crime involving individuals of immigrant origin is neither historically unique nor specific to Sweden. Emerging from socially and economically marginalized immigrant communities in major American cities, the *Italian Mafia* and the *Irish Mob* rose to prominence in the early 20th-century (Decker et al., 2009; Luconi, 1999; Wortley, 2009) and became central to public and political discourse on crime. The *Italian Mafia* in particular, played a pivotal role in shaping the development of organized crime in the United States, eventually dominating much of the criminal underworld and becoming a deeply ingrained symbol in the American imagination (Corsino, 2016). This has fueled long-standing prejudice against Italian Americans, who have often been portrayed as inherently linked to organized crime (Luconi, 1999). Such prejudice and ethnic stereotypes influence how entire immigrant communities are perceived and is often amplified by media portrayals. Just as past immigrant communities in the United States were both portrayed and judged through the lens of criminality, there is a risk that similar patterns of stigmatization may emerge in Sweden.

3.3 Media, Fear, and Public Perception of Immigrants

A recurring theme in the existing literature is the discrepancy between actual crime data and public perceptions. This gap plays a crucial role in shaping anti-immigrant attitudes and highlights the importance of distinguishing between actual objective risks and socially constructed fears. For instance, a study by Domínguez et al. (2021) in Chile found that while immigration itself did not increase crime, it heightened public concerns about crime and contributed to greater support for restrictive immigration policies. Echoing these findings in a European context, Nunziata (2015) analyzed data from multiple surveys and showed that immigration did not raise crime victimization. However it increased fear of crime, an emotion which is a strong predictor of negative attitudes toward immigrants. Building on this line of research, Bove et al. (2023) demonstrated that perceived insecurity, rather than actual crime rates, drives increased spending on police protection in areas with high levels of immigration in Italy.

Furthermore, extensive research has been done on the role of media coverage in shaping public perceptions. When media narratives emphasize immigrant involvement in crime, public fear and hostility toward immigrants can increase (Domínguez et al., 2021) In their recently published paper, Keita et al. (2024) investigate whether consistently reporting the ethnic origins of all criminal offenders in the media influences public attitudes toward immigration. They utilized a unique policy change at a German newspaper which began systematically disclosing the backgrounds of all suspects, including natives. Using panel data from the German Socio-Economic Panel (2014–2018) combined with over 400,000 crime-related articles, the study found that consistently reporting all offenders' backgrounds increased the salience of native perpetrators. As a result, public concern about immigration declined, notably reducing anti-immigrant sentiment and illustrating how selective reporting can distort public perception (Keita et al., 2024).

Previous research also shows that negative media narratives have stronger impact in areas with few immigrants, older population, lower education, and weaker socioeconomic conditions (Pisarevskaya and Webb, 2022). People who live in rural areas with limited direct contact with immigrants are more likely to rely on media narratives and stereotypes,

whereas those in more diverse and urban environments tend to hold more tolerant views (Garcia and Davidson, 2013). This idea is based on the premise that increased interactions between heterogeneous groups can help dismantle mutual stereotypes and foster greater understanding and social integration (Stockemer, 2016). Moreover, empirical studies consistently show that higher levels of education are associated with more liberal attitudes toward immigration (Finseraas et al., 2018). Education promotes tolerance by fostering critical thinking, reducing reliance on stereotypes and increasing understanding of structural inequality. For example, Margaryan et al. (2021) find that an additional year of schooling reduces strong concerns about immigration by approximately six percentage points in Germany. Taken together, these findings underscore that anti-immigrant attitudes are not merely reactions to immigration itself, but are formed through a complex interplay of fear and perceived threats, media narratives, education and place of residence. In particular, this emphasizes the importance of understanding anti-immigrant sentiment as a complex, multi-layered phenomenon shaped by both individual predispositions and broader societal narratives.

4   Theoretical Framework

The existing literature on attitudes toward immigrants presents several theories that explain how people's views and opinions are formed, and why individuals tend to hold either negative or positive perceptions. However, it is important to remember that immigrants are not one homogeneous group. Previous research has shown that people's attitudes vary significantly between different immigrant groups (Alba et al., 2005; Berg, 2015; Escandell and Ceobanu, 2009). People are often more favorable toward immigrant groups that they perceive to be more culturally similar or compatible with(Alba et al., 2005; Berg, 2015; Escandell and Ceobanu, 2009). For instance, Alba et al. (2005) find that white Americans tend to be more receptive to immigrants from Europe than to those from Asia, and less receptive to those from Latin America. Similarly, Escandell and Ceobanu (2009) show that Latin American immigrants are more positively viewed in Spain compared to immigrants from North and Sub-Saharan Africa.

The concepts of agenda-setting, salience, scapegoating and symbolic threat provide a robust framework for understanding the dynamics through which violent events like shootings can influence public opinion. However it is important to also acknowledge that attitudes are not formed in a vacuum. The effects of such violent events are likely to vary across groups, depending on factors such as political preference, education level, media consumption and perceptions of safety. These factors help explain why some individuals may develop more exclusionary attitudes toward immigrants in response to violent events, while others remain unaffected or become even more empathetic instead.

4.1   Agenda-Setting Theory and Salience

First introduced by McCombs and Shaw (1972), the agenda-setting theory suggests that the more attention an issue receives in media coverage, the more important it becomes in the public's mind. Although the media may not directly shape attitudes, they play a powerful role in directing public attention. By selecting which issues are highltighted and

which are ignored, media coverage contributes to defining which topics are recognized at the societal level and in turn perceived as relevant (Dunaway et al., 2010). This is where salience becomes crucial. While agenda-setting theory refers to the mechanism by which media elevates the importance of certain topics through repeated coverage, salience can be understood as the psychological process by which those issues become more cognitively accessible and emotionally resonant to individuals. In other words, while agenda-setting is driven by the volume of media coverage and visibility of an issue, salience captures how that visibility translates into perceived importance and urgency (Jin, 2025; Schneider-Strawczynski and Valette, 2025)

Importantly, salience is shaped not only by the frequency of coverage but also by how information is presented. Through framing, language, imagery, and subtle cues media narratives can reinforce particular associations and influence perception (Jin, 2025; Schneider-Strawczynski and Valette, 2025). Heightened attention to topics associated with crime for example, can increase their perceived importance and steer public opinion (Jin, 2025). Thus, when shootings dominate headlines, public perceptions may shift. Even in the absence of explicit ethnic references, media and political discourse often frame these incidents in ways that reinforce associations between immigrants and criminality in the public mind (Farris and Silber Mohamed, 2018).

4.2   Scapegoating and Symbolic Threat Theory

The surge in gang-related shootings in Sweden may also translate into anti-immigrant sentiments through scapegoating and symbolic threat theory. While salience explains why immigration becomes more prominent in public discourse after shootings, scapegoating and symbolic threat in turn describe how this attention can evolve into fear, blame, or hostility. One of the most consistent findings in research on societal responses to a collective threat is the tendency for the majority population to seek culpability, often by attributing blame to an outgroup perceived to be associated with the perpetrators (Frey, 2022; Ramirez and Kim, 2024). This process, known as scapegoating, is a psychological coping mechanism in which individuals displace frustration or anxiety onto an entire group (Frey, 2022). Even when only a few individuals are responsible for violent acts, their group affiliation, whether ethnic, religious, or national, can cause entire communities to be held collectively liable for the crime (Frey, 2022; Ramirez and Kim, 2024). In this context, immigrants may be scapegoated following the increase in gang-related shootings, especially when media narratives or visual cues suggest they share characteristics with the offenders.

Symbolic threat theory, in contrast, emphasizes not only fear of violence, but also perceived threats to cultural values, national identity, and social cohesion (Boydstun et al., 2018). It is based on the idea that immigrants pose a threat to the dominant group's norms, traditions, and way of life, particularly when they are portrayed as culturally distant or resistant to assimilation (Ramirez and Kim, 2024). Empirical research supports the notion that symbolic threats play a central role in shaping immigration attitudes, particularly when immigrants are framed as undermining societal values or national identity (Hainmueller and Hopkins, 2014). For instance, when gang violence is framed as a result of failed integration, it reinforces narratives that draw symbolic boundaries be-

tween natives and immigrant groups which contributes to more exclusionary attitudes (Ramirez and Kim, 2024). Not only do these narratives imply a threat to public safety, but also to the cultural values and social unity of Swedish society. Furthermore, symbolic threats tend to intensify during periods of social unrest or violent events which much of the existing literature has provided evidence on (Ramirez and Kim, 2024). Moreover, when immigration becomes salient in a context of violence or disorder, it is more likely to be perceived as a symbolic threat to social cohesion or national identity (Farris and Silber Mohamed, 2018). Importantly, both perceived symbolic threats and scapegoating tendencies tend to decrease when members of different groups have more direct interaction and social contact with each other (Boydstun et al., 2018).
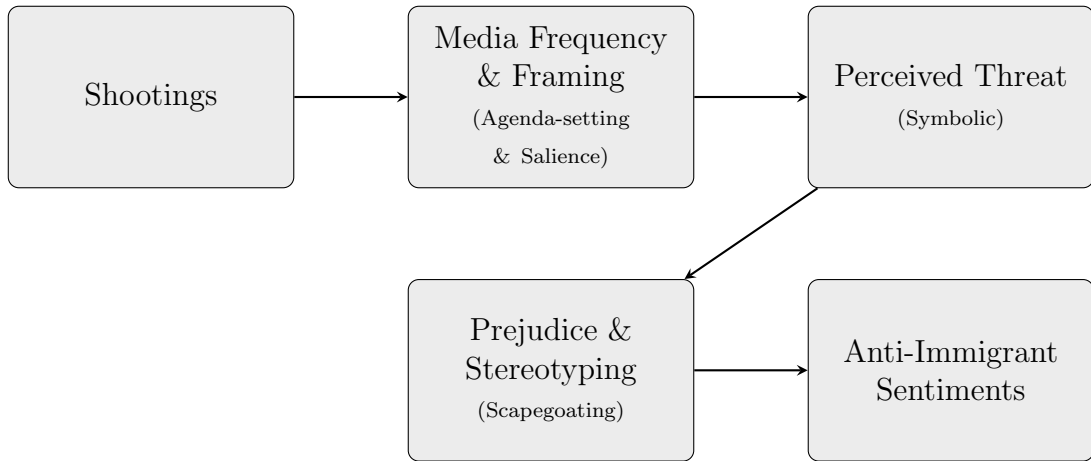
Figure 5: Conceptual pathway from shootings to anti-immigrant sentiments via media framing, symbolic threat, and scapegoating.

Figure 5, illustrates the proposed mechanism through which rising gun violence may contribute to increased anti-immigrant sentiment. Violent events, such as shootings, first attract intensified media attention (*agenda-setting*), which elevates the issue's perceived urgency and societal relevance (*salience*). When media coverage repeatedly associates gang violence with immigrant-dense areas or uses culturally coded cues, it reinforces the perception that such violence is ethnically rooted. This, in turn, can activate symbolic threat perceptions, whereby immigrants are not only seen as a threat to public safety but also to cultural values and societal cohesion (*symbolic threat*). As fear and uncertainty grow, these perceptions may evolve into stereotyping and generalizations based on prejudice. Consequently, entire immigrant communities may become subject to collective blame for the actions of a few (*scapegoating*). Taken together, these processes form a pathway through which public fear over crime can translate into more exclusionary attitudes toward immigrants, even in the absence of direct exposure to violence.

5   Data

To estimate the impact of rising gun violence on public attitudes toward immigrants, I construct a dataset by merging data from several different sources. The study utilizes data from two primary sources. First, data on all shooting incidents in Sweden between 2017 and 2023 are drawn from official records provided by the Swedish Police Authority.

Second, individual-level attitudinal and demographic data are obtained from the SOM Institute's annual national surveys conducted between 2006 and 2023. In addition, I use data from Statistics Sweden on the population per region and the share of individuals with a foreign background per region. To measure fear of crime I incorporate data from the Swedish Crime Survey (NTU) on the share of individuals per region who report feeling very concerned about crime in society (Brå, 2025). Furthermore, for robustness checks, I use data from the Swedish National Council for Crime Prevention (BRÅ) on reported violations of the Tax Offences Act (Sections 2–10).

Statistics Sweden is responsible for official statistics and for other government statistics (SCB, 2025). The Swedish Crime Survey (NTU) is conducted annually by the Swedish National Council for Crime Prevention (Brå, 2025). It is based on responses from over 64,000 individuals who, through postal and online questionnaires, answer questions about their experiences with crime, feelings of insecurity, fear of crime and trust in the justice system. The SOM surveys are conducted by the SOM Institute at the University of Gothenburg, and is a university-based research organization that also functions as a national infrastructure for survey data (SOM-institutet, 2025). Since 1986, the SOM surveys have been carried out annually with the aim of tracking trends in Swedish public opinion over time. The surveys are designed to produce results that are representative of the Swedish population as a whole. Each year in September, the SOM surveys are distributed through postal questionnaires to a broad sample of individuals aged 16 and above residing throughout Sweden (SOM-institutet, 2025). Consequently, all responses are received by the end of the calendar year or in January the following year. Also, an online completion option has been available to respondents since 2012. The participants are randomly selected from the Swedish Tax Agency's population register, which includes all residents in Sweden aged 16 to 90. This random sampling method is essential to ensure both the validity of the study and the representativeness of its findings. The sample size has steadily increased over time. In recent years, the survey has been distributed to more than 30,000 individuals across the country. Typically, the surveys range from 8 to 16 pages and include questions on various topics such as personal attitudes, daily habits, media usage, political views, institutional trust, and overall perspectives on society and life in Sweden (SOM-institutet, 2025). To ensure that the data remains comparable across different years, many survey questions are intentionally kept consistent over time. However, as societal conditions and public debates evolve, the SOM Institute continuously evaluates and refines both the questionnaire content and the research methodology to maintain relevance and accuracy. Each year's SOM survey is divided into several editions of the questionnaire, each centered around a specific theme and therefore containing a unique set of questions (SOM-institutet, 2025).

5.1 Dependent and Independent Variables

In order to measure public attitudes toward immigrants, I use responses to the recurring SOM survey question: "What is your opinion on the following proposal? Accept fewer refugees into Sweden". Responses were measured on a five-point ordinal scale indicating the degree of agreement or disagreement with the proposal, ranging from very good proposal to very bad proposal. Lower values indicate stronger support for reducing refugee intake, while higher values reflect stronger opposition. This question is used as a proxy

for anti-immigrant sentiment. While there are other survey questions that may capture perceptions of immigration as a cultural or security threat more directly, such questions either do not appear consistently across survey years or are limited to specific survey forms with considerably smaller samples. In order to ensure temporal consistency and also maintain a sufficient sample size, I therefore rely on the refugee intake question, as it is available across all survey years and appears in multiple survey forms each year. Although this question specifically refers to refugees, the proposal to reduce refugee intake reflects a broader restrictive stance toward immigration and immigrant groups in general. However, this measure should be interpreted with caution. It is possible that respondents who express support for reducing refugee intake do not necessarily hold negative attitudes toward immigrants already residing in Sweden. Their stance may instead reflect concerns related to integration capacity for example. In this sense, the relationship between attitudes toward refugee intake and general anti-immigrant sentiment is complex. Nevertheless, in the robustness checks, I include alternative measures that more directly reflect symbolic or security-related concerns about immigration, such as statements regarding immigration threatening Swedish values or culture, for the years in which these questions are available. Although this significantly reduces the sample size, it provides a valuable point of comparison. Furthemore, since the surveys are distributed in September each year and remain open for submission until January the following year, I adjust the coding so that responses submitted in January are attributed to the previous year's survey wave.

The main independent variable is the number of shooting incidents recorded between 2017 and 2023. I aggregate the data at the regional level and include all reported incidents, regardless of fatality. The dataset contains precise dates and geographic coordinates for each shooting, which I match to the correct region using open geodata from Statistics Sweden (SCB, 2025). This allows for accurate regional assignment of each incident. Since SOM data are only available at the regional level for the period 2020–2023, I aggregate the full dataset to this level. In order to better capture the temporal link between shootings and public opinion, I construct a rolling 12-month shooting variable to measure individual exposure to gun violence. The variable captures all shootings that occurred in the respondent's region between their response date and 12 months prior. By aligning exposure with the precise timing of each survey response, this approach ensures respondents are linked to the actual level of gun violence they were likely aware of at the time of participation. Additionally, this creates a lagged exposure window which is a common approach in event studies. Although it is not a lag in the classical time-series sense, it serves a similar purpose by measuring prior exposure and accounting for temporal variation in survey participation.

To account for differences in population size and potential skewness in the distribution, I construct three alternative specifications of the main independent variable: the absolute number of shootings, shootings per capita, and the natural logarithm of shootings. Given the highly localized nature of gun violence in Sweden, I acknowledge that analyzing data at the regional level entails a loss of local variation. Nonetheless, I use the absolute number of shootings as the main independent variable as this measure better captures the overall exposure to violence that can influence public attitudes. Per capita rates risk exaggerating the problem in sparsely populated regions and obscure the severity in large

regions where gang violence is concentrated in specific neighborhoods. Furthermore, I use reported violations of the Tax Offences Act (Sections 2–10) as an alternative independent variable for the robustness checks. I construct this measure by first summing all reported violations at the municipal level, then aggregating the totals for all municipalities within each region to obtain regional-level values.

5.2 Control Variables

As previous research demonstrates, media and news consumption can significantly moderate how individuals perceive violent events and form attitudes, particularly when such events are explicitly or implicitly associated with immigration in public discourse. This is especially relevant given that most people are not directly exposed to shootings, but instead learn about them indirectly through the news rather than through personal experience. In other words, in order for such events to influence public opinion, individuals must first be aware that they occurred. This awareness is mainly acquired through news media. In order to capture variation in respondents' exposure to media coverage, I therefore construct a categorical variable based on daily news consumption, using data from the SOM survey. Respondents are classified into three groups depending on how many major news sources they report following on a daily basis. Those who consume no news daily are categorized as having low news exposure, those reporting 1–2 sources are classified as medium, and those who consume 3 or more sources daily are considered to have high news exposure. The sources included in this measure are among Sweden's largest and most influential outlets, such as Dagens Nyheter, *Svenska Dagbladet, SVT Nyheter, TV4 Nyheterna, Aftonbladet, Expressen* as well as Social Media platforms. This variable serves as a proxy for general media exposure and provides a useful basis for testing whether and how media consumption moderates the relationship between gun violence and attitudes toward immigrants. Hence, for the analysis I will interact shootings with news consumption.

Furthermore, I include respondents' level of education as a control variable, as higher education is generally associated with more critical information processing and a lower susceptibility to threat-based narratives. The education variable is categorized into four ordinal levels: low (compulsory schooling), medium-low (upper secondary education), medium-high (some post-secondary education), and high (completion of a university or college degree). To account for the demographic composition of each region, I include the share of the population with a foreign background as a control variable since it could affect both shootings and attitudes. According to both scapegoating and symbolic threat theory, areas with higher shares of foreign-born residents may see more tolerant attitudes due to increased personal interaction. To adjust for population differences across regions, I include population as a control variable. This helps ensure that the association between shootings and attitudes is not driven by population size distortions inherent in per capita measures and validates the use of absolute numbers of shootings as the main independent variable. Additional controls include age, gender, political preference, major city, whether the respondent grew up abroad and concern over crime. These are all described in detail in Appendix A.1.

5.3 Descriptive Statistics

Table 1: Descriptive Statistics of Variables

Variable	Mean	SD	Min	Median	Max
Accept fewer refugees in Sweden	2.40	1.25	1.00	2.00	5.00
Shootings (last 12 m)	47.22	48.51	0.00	33.00	164.00
News Consumption	1.75	1.64	0.00	1.00	10.00
Education Level	2.81	1.06	1.00	3.00	4.00
SD-supporter	0.13	0.33	0.00	0.00	1.00
Age	53.12	18.43	16.00	55.00	90.00
Urban Residence	0.18	0.39	0.00	0.00	1.00
Raised Abroad	0.09	0.29	0.00	0.00	1.00
Fear of Organized Crime	3.53	0.69	1.00	4.00	4.00
Crime Concern Share (region)	0.47	0.05	0.32	0.47	0.59
Foreign Background Share (region)	0.26	0.07	0.09	0.27	0.37
Population (region)	1150971.92	871743.51	59467.50	1369995.50	2447424.00

Table 2: Distribution of Interaction Variables (Categorical)

Variable	Category	N	Percent
Lives in Stockholm, Malmö or Göteborg	No	35,723	82.6
	Yes	7,502	17.4
Education level	Compulsory	5,940	13.7
	Upper secondary	12,573	29.1
	Some Post-Secondary	14,795	34.2
	College or University Degree	9,917	22.9
News consumption level	Low (0)	11,328	26.2
	Medium (1–2)	20,860	48.3
	High (3+)	11,037	25.5
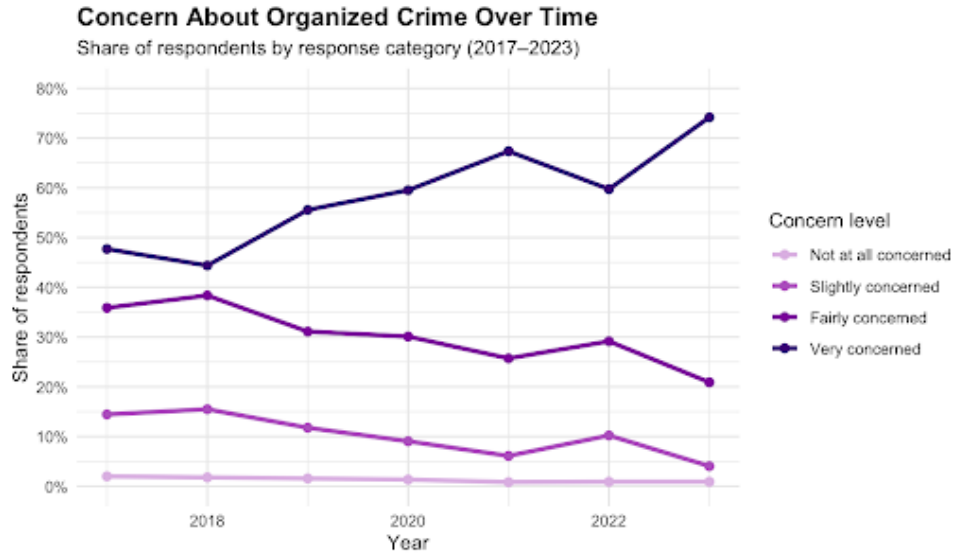
Figure 6: Shows how public concern about organized crime has changed over time and is based on responses to the question: *"Considering the current situation, how concerned are you personally about the following issues when thinking about the future?— Organized crime."*
Source: SOM Institute (2017–2023)
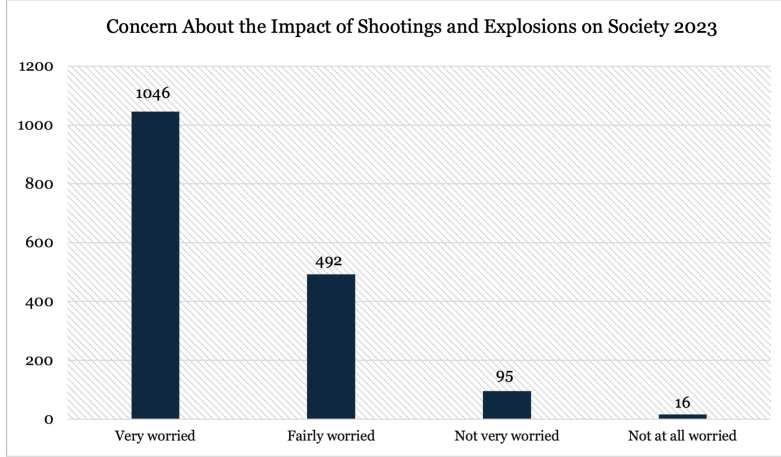
Figure 7: Respondents were asked: *"In recent years, there have been reports of an increase in serious violence in society, such as shootings and explosions. How concerned are you about this violence and its consequences for society?" Source: SOM Institute (2023)*
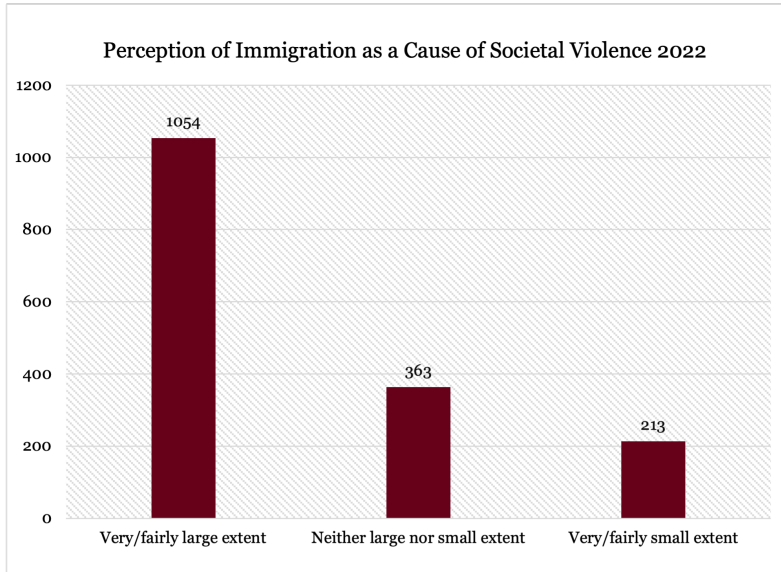
Figure 8: Respondents were asked: *"In recent years, there have been discussions about the causes of violence in society. To what extent do you believe immigration matters?" Source: SOM Institute (2022)*

6 Methodology

6.1 OLS Panel Model with Two-Way Fixed Effects

To estimate the relationship between gang-related shootings and public attitudes toward immigrants in Sweden, I employ a two-way fixed effects (TWFE) panel model estimated using ordinary least squares (OLS). The model includes fixed effects for both regions and years. These control for time-invariant regional characteristics (e.g., persistent dif-

ferences in political attitudes or socioeconomic and demographic conditions) as well as time-varying factors, such as nationwide shocks or trends that may influence both gun violence and public opinion. This setup focuses on within-region variation over time, estimating how year-to-year changes in shootings within a given region, are associated with changes in attitudes in the same region.

The main estimating equations can be specified as follows:

$$Y_{it} = \beta_1 \text{Shootings}_{it} + \beta_2 \text{News}_{it} + \mathbf{X}'_{it}\boldsymbol{\gamma} + \alpha_i + \delta_t + \epsilon_{it} \tag{1}$$

$$Y_{it} = \beta_1 \text{Shootings}_{it} + \beta_2 \text{News}_{it} + \beta_3(\text{Shootings}_{it} \times \text{News}_{it}) + \mathbf{X}'_{it}\boldsymbol{\gamma} + \alpha_i + \delta_t + \epsilon_{it} \tag{2}$$

where:

- Y_{it} is individual i's support for reducing refugee intake in year t,

- Shootings_{it} denotes the number of shootings in the individual's region over the past 12 months,

- News_{it} is an indicator for news consumption,

- $\text{Shootings}_{it} \times \text{News}_{it}$ is an interaction term that tests whether the impact of shootings is moderated by news media exposure,

- $\mathbf{X}_{it}$ is a vector of control variables, including some or all of the following depending on the specification: education level, SD supoporter, age, major city resident, raised abroad, crime concern (share), foreign background (share) and population size.

- α_i and δ_t are region and year fixed effects,

- and ϵ_{it} is the error term, clustered at the regional level.

While the TWFE model offers a useful baseline, it has well-documented limitations in settings where treatment effects may vary across units and over time. Firstly, the model assumes homogeneous treatment effects across all regions and time periods, meaning it estimates a single average effect that may mask significant variation in how different regions respond to increases in gun violence (Goodman-Bacon, 2021; De Chaisemartin and d'Haultfoeuille, 2020). In particular, the assumption of homogeneous treatment effects across regions and over time is unlikely to hold in a context where the rise in gun violence has been gradual, uneven, and regionally differentiated. Secondly, when treatment timing varies and effects are heterogeneous, TWFE estimators can yield biased or misleading results due to inappropriate weighting of comparisons (Goodman-Bacon, 2021; De Chaisemartin and d'Haultfoeuille, 2020).

6.2 Heterogeneous Treatment Effects with Staggered Adoption

In light of the limitations outlined in the previous section, the TWFE model serves as a starting point for this analysis. As a complement, I therefore extend the empirical strategy by turning to alternative estimators that explicitly account for heterogeneous treatment

effects and staggered treatment timing. One such approach is the estimator proposed by De Chaisemartin and d'Haultfoeuille (2020), which offers a more robust framework in settings where both the timing and intensity of treatment vary across units, and where effects are likely to differ across time and space. A key limitation of the TWFE model is its reliance on a homogeneous treatment effect assumption, which is unlikely to hold in this case. Gang-related shootings have increased at different rates and in different years across Swedish regions, and the public's response to this violence is likely context-dependent. Moreover, TWFE estimators can yield biased estimates due to so-called "negative weighting," where the TWFE model can unintentionally place disproportionate or even contradictory weights on certain comparisons (Goodman-Bacon, 2021). Unlike the standard TWFE model, the De Chaisemartin and D'Haultfœuille method avoids these pitfalls by estimating treatment effects separately for each group and time period. Instead of pooling all variation into a single average treatment effect estimate, it constructs cleaner comparisons between units that are treated at a given time and those that have not yet received treatment. These group-time average treatment effects (GTATEs) are then aggregated using weights that reflect the underlying sample structure. This framework accommodates heterogeneous and time-varying effects and is particularly well-suited to staggered treatment settings, such as natural experiments or policy rollouts.

In the context of this study, this approach allows for a more credible identification of how increases in gun violence could affect public attitudes within regions, without assuming a constant effect across all units and periods. However, the method is designed primarily for binary treatments, distinguishing between treated and untreated units. Because my treatment variable (the number of shootings) is continuous, applying this estimator requires discretizing the treatment into binary categories. For instance, a region may be defined as treated once the number of shootings exceeds a predefined threshold. This additional modeling decision introduces sensitivity to how treatment is defined, and may influence both the magnitude and interpretation of the estimated effects. While this approach improves upon the TWFE model by addressing heterogeneity and treatment timing, it may still fall short of capturing the full complexity of a continuously varying and evolving treatment. As such, the results should be interpreted as approximations of the broader relationship rather than precise estimates of marginal effects.

6.2.1 Treatment Definition and Empirical specification

To estimate the dynamic effects of increased gun violence on public attitudes, I apply the group-time average treatment effects estimator developed by De Chaisemartin and d'Haultfoeuille (2020), using the `DIDmultiplegtDYN` package in R. This method is implemented as an event-study-style difference-in-differences estimator that accommodates staggered treatment timing and heterogeneous effects across regions and over time.

The estimator works by computing a series of difference-in-differences for each group and time period, referred to as group-time average treatment effects (GTATEs) which are then aggregated using weights that reflect the size and structure of the data. This flexible framework captures the variation in treatment effects across different regions and over time, providing a more nuanced view of how the impact of increasing gun violence may differ regionally and evolve dynamically.
The baseline event-study specification is structured as follows:

$$Y_{rt} = \alpha_r + \delta_t + \sum_{k=-2}^{4} \beta_k D_{rt}^{(k)} + \epsilon_{rt} \tag{3}$$

where:

- Y_{rt} is the outcome variable (e.g., share of respondents favoring fewer refugees) in region r at time t,

- α_r and δ_t are region and year fixed effects, respectively,

- $D_{rt}^{(k)}$ is a dummy variable equal to 1 if unit r is k years away from treatment at time t,

- β_k captures the treatment effect k years relative to treatment (with $k = 0$ being the year of treatment),

- ϵ_{rt} is the error term, clustered at the regional level.

For each cohort g and time t, the estimator compares outcomes in regions treated in year g to those not yet treated at time t. These effects are then aggregated across groups and time periods to estimate the average dynamic treatment effect up to four years after treatment.

To define treatment in a way that reflects the gradual and regionally uneven rise in gang-related shootings in Sweden, I move beyond a binary policy indicator and instead operationalize treatment as a shift in regional violence relative to historical baselines. This approach is better suited to the nature of my data where the treatment variable, gun violence, is continuous and varies across both time and space. A region is considered treated from the first year in which shootings exceed a specific threshold. I implement two alternative threshold definitions:

Maximum pre-2019 shootings (max-based): In this specification, treatment begins in the first year (2019 or later) when the number of shootings in a region surpasses its own historical maximum observed during the pre-treatment period (2017–2019). The year 2019 is chosen as a starting point due to a marked and widely recognized escalation in gang-related violence, reflected in both media coverage and political discourse since then. Using the region-specific maximum anchors treatment to local historical conditions and identifies when a region enters an "exceptionally high" level of violence relative to its own past.

40% increase over pre-2019 average (mean-based): As a robustness check and alternative operationalization, I also define treatment as beginning when shootings exceed 140% of a region's pre-2019 average, i.e., when shootings have increased by at least 40% relative to the baseline level. This threshold captures sustained and substantial increases in violence, while avoiding the sensitivity of max-based definitions to outliers or isolated spikes. A 40% increase is selected to represent a significant but not extreme escalation, striking a balance between sensitivity and specificity.

These two definitions capture different but complementary perspectives: the max-based threshold identifies exceptional deviations from past peaks, while the mean-based thresh-

old captures structural upward trends. Using both enables a test of the robustness of the results to theoretically grounded alternatives for defining treatment onset.

6.3 Identifying Assumptions

To interpret the estimated association between gun violence and public attitudes toward refugees as causal, several key identifying assumptions must be fulfilled. These assumptions apply across both the two-way fixed effects (TWFE) OLS panel model and the alternative group-time average treatment effects (GTATE) estimator proposed by de Chaisemartin and D'Haultfœuille (2020).

TWFE Model: The TWFE model removes time-invariant regional heterogeneity and common time shocks through region and year fixed effects. However, its core identifying assumption is that of *parallel trends*: in the absence of treatment (i.e., changes in gun violence), attitudinal trends would have evolved similarly across regions. Given that the treatment is continuous, the model also assumes that changes in gun violence intensity are exogenous with respect to unobserved changes in attitudes, conditional on observed covariates and fixed effects. This setup effectively captures a dose-response relationship.

Group-Time Average Treatment Effects (GTATE:) The GTATE estimator accounts for staggered treatment timing and heterogeneous treatment effects, but still relies on a variant of the parallel trends assumption. Specifically, it assumes that, conditional on covariates and fixed effects, regions treated at time g would have followed the same trend in outcomes as not-yet-treated regions, in the absence of treatment. The estimator also assumes no spillover effects between units and no anticipatory behavior. This means that shootings in one region should not influence attitudes in neighboring regions and that individuals or regions should not change their attitudes in response to expected future increases in gun violence before those increases have actually occurred.

Additional assumptions required for a causal interpretation: Firstly, no time-varying confounders, i.e. there must be no unobserved region-specific, time-varying factors that affect both shootings and attitudes. This is partially addressed through controls for media exposure, political preferences, education, age, urban residence, and demographic structure. Secondly, no reverse causality, i.e. public attitudes should not influence the likelihood or reporting of shootings in a region. Thirdly, no selection on outcomes, i.e. the likelihood of receiving treatment (experiencing more shootings) should not be directly driven by changes in refugee attitudes.

6.4 Potential Threats to Identification

To assess the plausibility of the parallel trends assumption, I conduct a pre-trend analysis using SOM survey data from 2006 to 2012, prior to the surge in gang-related shootings which began around 2013. Due to data limitations, region-level shooting data is only available from 2017 onward. To ensure that treatment and control regions followed similar trajectories in refugee attitudes before the onset of the gun violence surge, I therefore focus on the pre-2013 period. Regions are divided into "high" or "low" violence based on
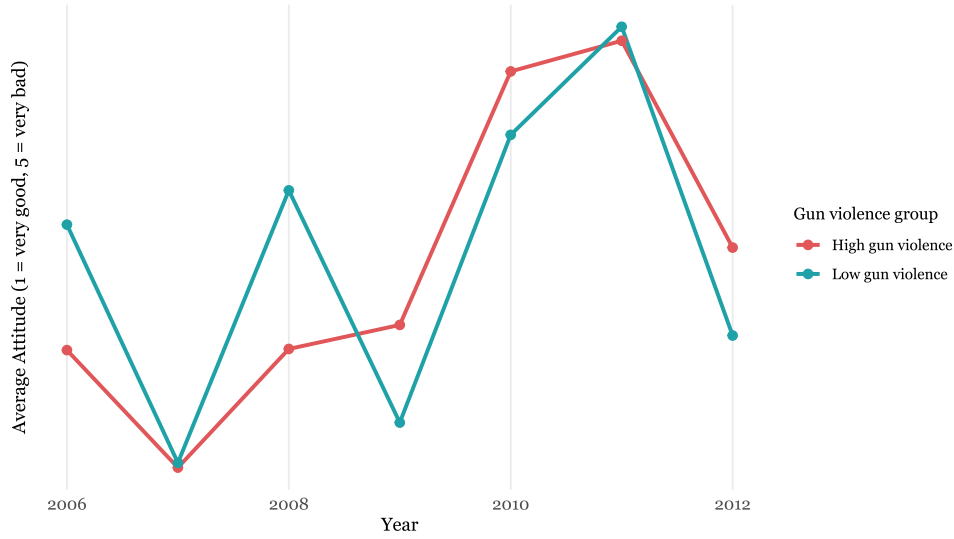
Figure 9: Pre-treatment Trends in Refugee Attitudes (2006–2012)

whether their total number of shootings during 2017–2023 exceeds the median. Trends in refugee attitudes prior to treatment are compared between these groups. Both visual inspection (Figure 9) and a placebo regression presented in Appendix Table 22 reveal no significant differences in pre-treatment trends, supporting the validity of the parallel trends assumption. Alternative splits based on the mean yield less balanced groups and diverging pre-trends, reinforcing the choice of a median cutoff. Using the median as a cutoff is more robust to extreme values such as Stockholm for instance, which recorded over 800 shootings and ensures a balanced division of the sample into two equally sized groups (see Table 16 in the Appendix for a full breakdown of shootings by region and year). In contrast, splitting by the mean would produce skewed groupings due to the heavily right-skewed distribution of shootings across regions. The use of the median is also standard practice in difference-in-differences settings where no sharp policy threshold exists, making it a suitable and defensible choice for classifying regions by exposure intensity.

Nonetheless, the assumption of parallel trends is sensitive to how these violence groups are defined. For instance, using a mean-based split results in a divergence in pre-treatment trends. This introduces some uncertainty regarding the strength of the causal interpretation. Although the parallel trends assumption appears to hold when using a median split to define high and low violence regions, it is important to interpret the results with caution. The validity of this assumption is contingent on how the comparison groups are constructed. Alternative specifications, such as splitting the sample based on the mean, produce less consistent patterns. This sensitivity suggests that the groups may differ in ways that are not fully accounted for, and that the observed trends might not reflect purely exogenous variation. Therefore, the results should be viewed as suggestive rather than definitive evidence of a causal effect.

Beyond parallel trends, several other threats to identification require consideration. Firstly, the model assumes no unobserved region-specific, time-varying confounders. While I con-

trol for a range of observable covariates, omitted variables such as changes in local media narratives or unmeasured social tensions may still bias estimates. Secondly, the assumption of no spillover effects may be violated if gun violence in one region influences attitudes in neighboring regions. This risk is particularly relevant in the Swedish context, since most individuals learn about shootings through news media. As a result, a high-profile shooting, even in a distant region, may still influence attitudes across the country. Besides, not all shootings are equally visible or salient to the public. Some incidents receive intense media attention, while others go largely unnoticed. This likely introduces variation in how shootings influence attitudes, depending not only on their number but also their media profile. Hence, this too could bias treatment estimates. Furthermore, if participation in the SOM survey is systematically affected by changes in gun violence (e.g., more politically engaged respondents participating in high-violence regions), selection bias could arise which poses a threat to causal identification.

7   Empirical Results

This section presents the empirical findings of the study. I begin by examining a potential mechanism through which exposure to gun violence may shape attitudes toward immigration, by using fear of organized crime as the dependent variable. The underlying theoretical argument, grounded in symbolic threat theory and scapegoating, suggests that increased perceptions of threat and insecurity can foster negative attitudes toward out-groups; particularly when those groups are implicitly or explicitly associated with the threat. If shootings increase fear of organized crime, this would provide an important channel through which violent crime may indirectly affect public attitudes toward immigrants.

Following this, I turn to the main analysis, where I estimate the effect of gun violence on support for reducing refugee intake. These results are based on a two-way fixed effects (TWFE) panel model with a comprehensive set of control variables as well as year and region fixed effects. I then extend the model by interacting gun violence with individual-level news consumption to explore whether media exposure moderates this relationship. Throughout, I remain mindful of the limitations of TWFE in the presence of treatment heterogeneity and staggered timing. To address potential bias from these issues, I later apply more robust estimators proposed by De Chaisemartin and d'Haultfoeuille (2020).

I further explore treatment effect heterogeneity by interacting the treatment variable with key covariates such as education, gender, and urban residence, and by estimating models separately for different subgroups. Finally, I perform several robustness checks. These include using logged shootings and shootings per capita as alternative treatment specifications (presented in the appendix), and replacing the treatment variable with reported tax crime incidence to assess whether the effects are specific to gun violence (with an additional per capita version in the appendix as well). It also includes dropping certain respondents who live in the most affected cities. I also replicate the model using alternative outcome measures of immigration attitudes.

7.1 Exploring a Potential Mechanism: Fear of Organized Crime

Table 3: Shootings on Fear of Organized Crime (TWFE)

	(1) Baseline	(2) + News Consumption	(3) + Controls
Shootings	0.0005*	0.0004+	0.0010***
	(0.0002)	(0.0002)	(0.0002)
News Consumption		0.0669***	0.0370***
		(0.0048)	(0.0044)
Education Level			-0.0211***
			(0.0046)
SD Supporter			0.2654***
			(0.0226)
Age			0.0118***
			(0.0005)
Major City			-0.0779***
			(0.0139)
Raised Abroad			-0.0151
			(0.0096)
Foreign Background (share)			5.2734+
			(2.8282)
Population (log)			-3.2319**
			(0.9874)
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.049	0.071	0.182
Observations	10,882	10,882	10,882

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable measures fear of organized crime on a 4-point scale (higher = more concern). Column (1) includes only shootings. Column (2) adds news exposure. Column (3) includes full controls: education level, SD supporter, age, urban residency, raised abroad, regional foreign-background share and log population. + p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 3 investigates whether regional gun violence is associated with increased fear of organized crime, which may serve as a potential mechanism linking shootings to restrictive refugee attitudes. While the estimated effects are small in magnitude, the coefficient for shootings is positive and statistically significant across all specifications, suggesting that greater exposure to gun violence corresponds to higher levels of fear. In the fully controlled model (Column 3), the effect size increases and remains robust after adjusting for individual and regional covariates. The coefficient implies that each additional shooting is associated with a 0.001-point increase on the four-point fear scale. Notably, higher news consumption is also strongly associated with greater fear, while education and urban residency appear to reduce such concerns. These findings, although modest in size, support the theoretical argument that rising violence may activate symbolic threat perceptions, which in turn can influence public attitudes.

7.2   Main Results: Support for Reducing Refugee Intake

Table 4: Effect of Shootings on Restrictive Attitudes Toward Refugees (TWFE)

	(1) Baseline	(2) + News Consumption	(3) + Education & Political Preference	(4) + Individual Controls	(5) + Regional Controls
Shootings	-0.001^{+}	-0.001^{+}	-0.001^{+}	-0.001^{+}	-0.001
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
News Consumption		-0.054^{***}	-0.053^{***}	-0.036^{***}	-0.036^{***}
		(0.004)	(0.003)	(0.003)	(0.003)
Education: Medium-low			0.055^{***}	-0.052^{***}	-0.052^{***}
			(0.013)	(0.013)	(0.013)
Education: Medium-high			0.197^{***}	0.111^{***}	0.111^{***}
			(0.016)	(0.016)	(0.016)
Education: High			0.485^{***}	0.367^{***}	0.367^{***}
			(0.012)	(0.014)	(0.014)
SD Supporter			-1.185^{***}	-1.173^{***}	-1.172^{***}
			(0.020)	(0.018)	(0.018)
Age				-0.006^{***}	-0.006^{***}
				(0.000)	(0.000)
Major City				0.158^{***}	0.158^{***}
				(0.041)	(0.041)
Raised Abroad				0.127^{*}	0.126^{*}
				(0.051)	(0.051)
Crime Concern (share)					-0.868^{+}
					(0.477)
Foreign Background (share)					1.282
					(3.569)
Population (log)					-0.874
					(1.012)
R^2	0.009	0.014	0.157	0.167	0.167
FE: Region	X	X	X	X	X
FE: Year	X	X	X	X	X
Observations	43,225	43,225	43,225	43,225	43,225

Note: Standard errors in parentheses, clustered at the regional level. Column (1) includes only the number of shootings in the last 12 months. Column (2) adds numeric news consumption. Column (3) adds SD support and education dummies, with 'Low' as the reference. Column (4) includes demographics (age, urban residence, raised abroad). Column (5) adds regional-level controls: crime concern (share), share foreign background, and logged population size.
$^{+}$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 4 presents the main regression estimates examining the association between regional gun violence and public support for reducing refugee intake, using a two-way fixed effects (TWFE) panel model. Across all specifications, the coefficient for shootings is negative and marginally statistically significant in models (1) through (4), suggesting that exposure to violent crime may lead to more restrictive refugee attitudes. However, this association weakens and becomes statistically insignificant in the fully controlled model (column 5), suggesting that once regional-level characteristics are accounted for, the evidence for a direct effect of shootings on refugee attitudes becomes inconclusive. These findings suggest that the association may be confounded by contextual factors such as crime salience or demographic composition at the regional level. Importantly however, news consumption consistently emerges as a strong predictor of anti-refugee sentiment. Individuals who consume more news tend to express significantly more negative attitudes toward refugees, even after controlling for a wide range of individual and contextual factors. In this simple baseline model I do not interact shootings with news consumption. Similarly, education is positively associated with more supportive attitudes, while supporters of the Sweden Democrats (SD) exhibit substantially more negative views as expected. Urban residents and respondents raised abroad also tend to hold more positive attitudes toward refugees,

whereas older individuals express slightly more restrictive views. To examine whether the effect of shootings depends on news exposure, Table 6 presents interaction models between shootings and categorical levels of news consumption.

Table 5: Shootings x Fear of Organized Crime on Attitudes Toward Refugees (TWFE)

	(1) Baseline	(2) + Fear Interaction	(3) + Controls
Shootings	-0.0002	0.0021	0.0025$^+$
	(0.0011)	(0.0013)	(0.0014)
Fear of Organized Crime		-0.8244***	-0.5790***
		(0.1065)	(0.1040)
Shootings × Fear of Organized Crime		-0.0025*	-0.0031**
		(0.0010)	(0.0010)
News Consumption			-0.0392**
			(0.0111)
Education Level			0.1679***
			(0.0155)
SD Supporter			-1.1206***
			(0.0501)
Age			-0.0029**
			(0.0010)
Major City			0.1417*
			(0.0632)
Raised Abroad			0.1002
			(0.0867)
Foreign Background (share)			-14.6308
			(49.1946)
Population (log)			7.0986
			(12.3406)
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.021	0.078	0.205
Observations	3,119	3,119	3,119

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable measures attitudes toward refugees (higher values = more positive). "Fear of Organized Crime" is a binary variable coded as 1 if the respondent reported being "very worried" or "somewhat worried" about organized crime, and 0 if they reported being "not very worried" or "not at all worried". This variable only appears in the same questionnaire editions as the refugee attitude question in three of the survey years; in all other years, the two questions were included in separate survey forms. As a result, the sample size is substantially smaller than in other models. $^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001.

The results in Table 5 suggest that fear of organized crime is significantly associated with more negative attitudes toward refugees. While the main effect of shootings is small and not statistically significant on its own, its interaction with fear of crime is consistently negative and significant across specifications. In other words, individuals who report being very or farily worried about organized crime become more negative toward refugees when regional gun violence increases. These findings support the idea that the impact of gun violence is conditional on perceived insecurity. Although the sample size in this analysis is significantly smaller compared to other models, it nonetheless provides meaningful

evidence. The results indicate that attitudes toward refugees are not simply shaped by direct exposure to crime, but rather by how such events are interpreted through the lens of fear and perceived threats. This underscores the broader argument that anti-immigrant sentiment in Sweden is not only a response to social conditions, but also a reflection of how those conditions are framed and understood by the public.

Table 6: Shootings x News Consumption on Restrictive Refugee Attitudes (TWFE)

	(1)	(2)	(3)
Shootings	-0.0009^+	-0.0004	-0.0002
	(0.0005)	(0.0006)	(0.0004)
News: Medium	-0.0574^{**}	-0.0323^+	-0.0105
	(0.0155)	(0.0167)	(0.0157)
News: High	-0.2039^{***}	-0.1717^{***}	-0.1029^{***}
	(0.0195)	(0.0222)	(0.0172)
Shootings × Medium News		-0.0006^*	-0.0005^{**}
		(0.0002)	(0.0002)
Shootings × High News		-0.0007^{**}	-0.0007^{**}
		(0.0002)	(0.0002)
Controls	No	No	Yes
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.013	0.013	0.167
Observations	43,225	43,225	43,225

Note: Standard errors in parentheses, clustered at the regional level. All models include fixed effects for region and year. Column (1) includes shootings and categorical news consumption (reference: Low = 0 daily sources). Column (2) adds interactions between shootings and news levels. Column (3) includes full controls: SD support, education (ref: Low), age, urban residency, raised abroad, and regional variables (crime concern, foreign background share, population size in log). * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001, + p ¡ 0.1

The results reveal that the negative association between shootings and refugee attitudes is significantly stronger among individuals with medium and high levels of news consumption. Respondents who consume more news are consistently more likely to support reduced refugee intake, even after accounting for education, political affiliation, and other individual and contextual controls. Notably, the interaction terms are both negative and statistically significant, suggesting that news exposure intensifies the relationship between gun violence and anti-refugee sentiment. This pattern aligns with the expectations of agenda-setting theory, which posits that media exposure elevates the salience of specific issues, such as crime and immigration for example,making them more cognitively accessible and emotionally charged. Consequently, individuals may develop heightened sensitivity to symbolic threats and be more inclined to endorse exclusionary attitudes and assign collective blame.

Taken together, the main findings provide evidence for a modest but meaningful link between gun violence and public opinion on immigrants, particularly among those more exposed to news media. They also underscore the importance of individual characteristics such as education and political preference. While the estimated effect sizes are

relatively small, they are theoretically consistent and statistically robust. It is worth noting, however, that the explanatory power of the models remains limited (with R^2 values ranging from 0.009 to 0.167), suggesting that much of the variation in attitudes remains unaccounted for.

7.3 Heterogenous effects

Table 7: Shootings and Refugee Attitudes: Low-Education Group

	(1) Baseline	(2) + News Interaction	(3) + Individual Controls	(4) Full Controls
Shootings	-0.0021*	-0.0017$^+$	-0.0026*	-0.0025*
	(0.0009)	(0.0010)	(0.0010)	(0.0010)
News: Medium		-0.0392	-0.0088	-0.0081
		(0.0556)	(0.0516)	(0.0515)
News: High		-0.1430**	-0.1045*	-0.1043*
		(0.0491)	(0.0443)	(0.0438)
Shootings × Medium News		-0.0000	0.0003	0.0003
		(0.0006)	(0.0006)	(0.0006)
Shootings × High News		-0.0012$^+$	-0.0003	-0.0003
		(0.0006)	(0.0007)	(0.0008)
SD Supporter			-0.9016***	-0.9012***
			(0.0323)	(0.0324)
Age			-0.0055***	-0.0055***
			(0.0006)	(0.0006)
Major City			-0.0068	-0.0065
			(0.0430)	(0.0433)
Raised Abroad			0.3325***	0.3325***
			(0.0640)	(0.0639)
Crime Concern (share)				X
Foreign Background (share)				X
Population (log)				X
Fixed effects: Region	X	X	X	X
Fixed effects: Year	X	X	X	X
R^2	0.013	0.017	0.134	0.134
Observations	5,940	5,940	5,940	5,940

Note: Standard errors in parentheses, clustered at the regional level. The sample is restricted to respondents with low education. The dependent variable measures attitudes toward refugee reception. Column (2) includes categorical news exposure and its interaction with shootings. Column (3) adds individual-level controls. Column (4) adds regional context variables.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 7 presents TWFE estimates for the subsample of respondents with low levels of education, i.e. those who have maximum completed compulsory schooling. The results indicate a consistently negative and statistically significant association between gun violence and support for refugee intake across all model specifications. In the fully controlled model (column 4), each additional shooting in the past 12 months is associated with a 0.0025-point decrease on the refugee attitudes scale, suggesting that among lower-educated

individuals, gun violence may modestly increase anti-refugee sentiment. The inclusion of interaction terms in column (2) shows that high news consumers in this group express significantly more negative attitudes toward refugees. However, the interaction between shootings and high news consumption is only marginally significant in column (2) and becomes statistically insignificant once controls are added (columns 3–4), indicating limited evidence that news exposure moderates the shooting-attitude link in this subgroup. Also, individuals raised outside Sweden are substantially more supportive of refugee reception, even when controlling for other individual and regional factors. This aligns with expectations that personal background and exposure to diverse environments may foster more inclusive attitudes, possibly due to greater empathy, shared experience, or reduced perception of outgroups as threatening. Taken together, the results suggest that the relationship between gun violence and refugee attitudes is somewhat stronger and more consistent among respondents with lower education, though the role of media exposure as a moderator appears limited in this group.

Table 8: Effect of Shootings on Refugee Attitudes with Major City Interaction (TWFE)

	(1) Baseline	(2) + Major City Interaction	(3) + Full Controls
Shootings	-0.0009^{+}	-0.0011^{*}	-0.0010^{*}
	(0.0005)	(0.0004)	(0.0004)
Major City	0.3010^{***}	0.2468^{***}	0.0708
	(0.0322)	(0.0547)	(0.0507)
Shootings $\times$ Major City		0.0007	0.0010^{*}
		(0.0004)	(0.0004)
News: Medium			-0.0311^{*}
			(0.0130)
News: High			-0.1322^{***}
			(0.0160)
Controls	No	No	Yes
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.016	0.016	0.167
Observations	43,225	43,225	43,225

Note: Standard errors in parentheses, clustered at the regional level. "Major City" equals 1 for residents of Stockholm, Gothenburg, or Malmö. News consumption is categorical (reference = low). Other individual and contextual controls included in Column (3) are not displayed.
$^{+}$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 8 explores whether the relationship between shootings and refugee attitudes differs between major city residents (Stockholm, Gothenburg, Malmö) and others. In the baseline model (Column 1), shootings are marginally negatively associated with support for refugee intake. Once the interaction between shootings and major city residence is introduced (Column 2), the main effect of shootings becomes slightly stronger and statistically significant. However, the interaction term is positive and significant in Columns 3 and 4, suggesting that the negative relationship between shootings and refugee attitudes is

weaker among individuals living in major cities. This may reflect either a greater tolerance in urban contexts or differences in how gun violence is perceived and interpreted across geographic settings. The results also reaffirm earlier findings, i.e., news consumption is associated with more exclusionary attitudes. Overall, these findings point to meaningful geographic variation in how violent events translate into public opinion, indicating that symbolic threat perceptions may be moderated by local context and lived experience.

Table 9: Effect of Shootings and Gender on Attitudes Toward Refugees (TWFE)

	(1) Baseline	(2) + Gender Interaction	(3) + Full Controls
Shootings	−0.0010^{+}	−0.0009	−0.0004
	(0.0005)	(0.0005)	(0.0004)
Female		−0.3167***	−0.1897***
		(0.0181)	(0.0171)
Shootings × Female		−0.0003	−0.0005**
		(0.0002)	(0.0002)
Controls	No	No	Yes
Fixed Effects: Region	X	X	X
Fixed Effects: Year	X	X	X
R^2	0.009	0.026	0.155
Observations	43,076	43,076	43,076

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable measures attitudes toward refugee reception. Gender is coded as 1 = Female, 0 = Male. Column (3) includes full individual and regional controls.
$^{+}$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 9 examines whether the relationship between shootings and refugee attitudes varies by gender. The interaction term becomes statistically significant in the fully controlled model (Column 3). This indicates that the negative association between gun violence and support for refugee intake is stronger among women than among men. Hence, this suggests that symbolic threat perceptions may be more salient for female respondents, possibly due to greater safety concerns or differential media effects.

Table 10: Shootings and Refugee Attitudes– Older Adults (TWFE)

	(1) Baseline	(2) + News Interaction	(3) + Full Controls
Shootings	-0.0018*	-0.0002	-0.0006
	(0.0006)	(0.0007)	(0.0006)
News Exposure: Medium		0.0165	-0.0180
		(0.0467)	(0.0330)
News Exposure: High		-0.0940	-0.1528***
		(0.0550)	(0.0369)
Shootings × Medium News		-0.0016*	-0.0012**
		(0.0006)	(0.0004)
Shootings × High News		-0.0020**	-0.0013**
		(0.0006)	(0.0004)
SD Supporter			-0.9724***
			(0.0197)
Female			-0.0512*
			(0.0220)
Education Level: Medium			0.0249
			(0.0183)
Education Level: High			0.1744***
			(0.0251)
Education Level: Highest			0.4523***
			(0.0283)
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.010	0.014	0.137
Observations	14,112	14,112	14,093

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable captures attitudes toward refugees (higher values = more positive). The sample is restricted to older respondents, defined as individuals aged 65 to 90.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 10 presents the relationship between regional shootings and attitudes toward refugees among older adults (ages 65–90). Importantly, older adults may be particularly susceptible to this mechanism. Previous research suggests that older individuals tend to consume more traditional news media and often hold more conservative views on immigration. As a result, they may be more receptive to media frames that associate violent crime with immigration, making them a key group through which salience-driven effects manifest. In the baseline model (Column 1), shootings are significantly associated with more negative attitudes toward refugees. However, once news consumption is accounted for (Column 2), this direct effect weakens, and significant interaction effects emerge. Specifically, among individuals with medium or high levels of news exposure, shootings are significantly more likely to correlate with negative refugee attitudes (Columns 2 and 3). The strongest effect is observed among high-news consumers, for whom both the interaction and the main effect of news are statistically significant and negative in the full model. These findings align with agenda-setting theory and the concept of salience, i.e., media coverage of shootings likely increases the cognitive and emotional prominence of certain issues. This suggests

that media exposure plays a crucial role in amplifying the politicization of crime and in activating threat perceptions that translate into anti-immigrant sentiment, particularly among older individuals who may already be more sensitive to narratives of social order and security.

7.4 Robustness Checks

Table 11: Tax Crimes on Attitudes Toward Refugees (TWFE)

	(1) Baseline	(2) + Individual Controls	(3) + Full Controls
Tax Crimes	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)
News Consumption		−0.110***	−0.110***
		(0.014)	(0.014)
SD Supporter		−1.179***	−1.179***
		(0.017)	(0.017)
Education Level		0.152***	0.152***
		(0.005)	(0.005)
Age		−0.005***	−0.005***
		(0.000)	(0.000)
Major City		0.166***	0.166***
		(0.041)	(0.041)
Raised Abroad		0.136*	0.136*
		(0.052)	(0.052)
Controls	No	Individual	Full
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.009	0.163	0.164
Observations	43,218	43,218	43,218

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable is support for reducing refugee intake (1–5 scale). Column (1) includes only total tax crimes. Column (2) adds individual-level controls. Column (3) adds regional-level variables: crime concern (share), foreign-background population share, and log population.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Replacing shootings with reported tax crimes in Table 11 yields null results. There is no evidence that tax crime rates influence refugee attitudes, either directly or indirectly. This reinforces the idea that the observed effects are specific to violent crime, particularly that which is salient in public discourse (e.g., shootings), and not simply a proxy for general criminal activity. To further test this, I also examine the effect of tax crimes per capita (see Table 18 in Appendix B) on refugee attitudes. Consistent with the main findings, this alternative specification likewise does not show statistically significant effects. This strengthens the interpretation that the relationship observed in the main models is robust and specific to violent incidents, rather than driven by general crime levels.

Table 12: Shootings and Refugee Attitudes (Excluding Metropolitan Residents TWFE)

	(1) Baseline	(2) + News Interaction	(3) +Individual Controls	+ Regional Controls
Shootings	-0.001	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Daily News		-0.046***	-0.032***	-0.032***
		(0.005)	(0.004)	(0.004)
Shootings × Daily News		-0.000	-0.000$^+$	-0.000$^+$
		(0.000)	(0.000)	(0.000)
SD supporter			-1.145***	-1.145***
			(0.017)	(0.017)
Education: Medium-low			-0.045**	-0.045**
			(0.013)	(0.013)
Education: Medium-high			0.107***	0.107***
			(0.015)	(0.015)
Education: High			0.376***	0.376***
			(0.018)	(0.018)
Age			-0.005***	-0.005***
			(0.000)	(0.000)
Raised abroad			0.183**	0.182**
			(0.054)	(0.054)
Crime concern (share)				-0.973*
				(0.433)
Foreign background (share)				3.309
				(3.056)
Population (log)				-1.258
				(0.849)
R^2	0.009	0.013	0.164	0.164
FE: Region	X	X	X	X
FE: Year	X	X	X	X
Observations	35,723	35,723	35,723	35,723

Note: Standard errors in parentheses, clustered by region. All models include region and year fixed effects. "Daily news sources" measures the number of different daily news sources used. Model (1) includes shootings only. Model (2) adds interaction with daily news consumption. Model (3) adds individual-level controls: SD support, education (reference: Low), age, and foreign background. Model (4) includes regional controls: crime concern, share foreign-born, and log population.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

While the results from Table 8 suggest that the relationship between shootings and refugee attitudes is weaker among major city residents, the robustness check from Table 12 excluding metropolitan areas reveals no significant association at all. This may appear contradictory, but could possibly reflect a loss of key variation in both news media exposure and gun violence. If major city residents consume more news, removing them limits variation in media exposure which makes it harder to detect interaction effects. Similarly, shootings are heavily concentrated in these three major cities. Hence, excluding them removes much of the variation in the main independent variable, which reduces the statistical power to identify meaningful associations. Furthermore, when using an alternative outcome, in this case the perceived threat to Swedish culture and values, the pattern

of results from Table 20 presented in the Appendix remains directionally consistent but statistically much weaker. The main effect of shootings becomes statistically insignificant once controls are included. The interaction with news is only statistically significant for high news consumers. Although these results lack robust evidence, they still offer tentative support for the role of media prominence in shaping symbolic threat perceptions. Notably, the sample is much smaller since only a small subset of the respondents received this edition of the survey. Besides, the outcome measure is more direct and potentially a sensitive question to answer, which could introduce social desirability bias and attenuate observable effects.

7.5   Event Study Analysis: Dynamic Treatment Effects
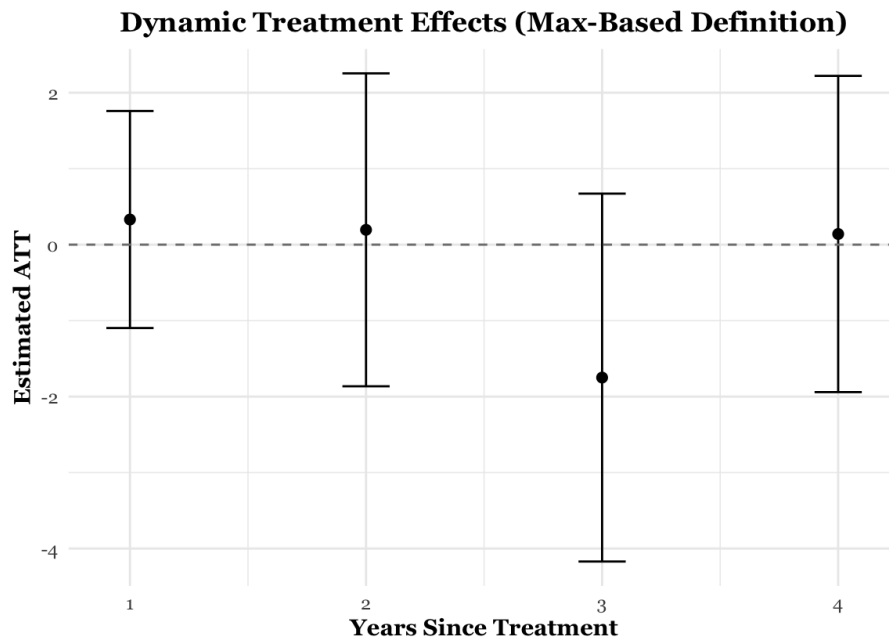
Figure 10: Dynamic Treatment Effects Using the Max-Based Treatment Definition

Using the group-time average treatment effects estimator by de De Chaisemartin and d'Haultfoeuille (2020), I estimate the dynamic effects of gun violence on refugee attitudes, defining treatment as the first year in which shootings in a region exceed the region's pre-2019 maximum. Figure 10 displays the resulting event-study estimates for up to four years after treatment.

While the individual year estimates fluctuate and remain statistically imprecise, with wide confidence intervals, there is no consistent evidence of a clear or sustained effect (see Appendix Table 23 for placebo estimates prior to treatment based on the max-based threshold). The joint test of all post-treatment effects yields a p-value of 0.056, suggesting marginal significance but not strong statistical support. To test the parallel trends and no anticipation assumptions, two placebo leads are included. Both are small, imprecisely estimated, and jointly insignificant (p = 0.842), lending support to the identification strategy. Although year 3 shows a larger negative estimate, the uncertainty surrounding this point prevents firm conclusions. The average cumulative effect across all post-treatment

years is negative but not statistically significant. Across all years, the confidence intervals are wide, reflecting substantial uncertainty and limited statistical precision.

Dynamic Treatment Effects (40% Increase Definition)

Figure 11: Dynamic Treatment Effects Using the 40% Increase Threshold

Using the 40%-based treatment definition, where treatment is defined as the point at which shootings increase by at least 40% relative to the region's pre-2019 average, the eve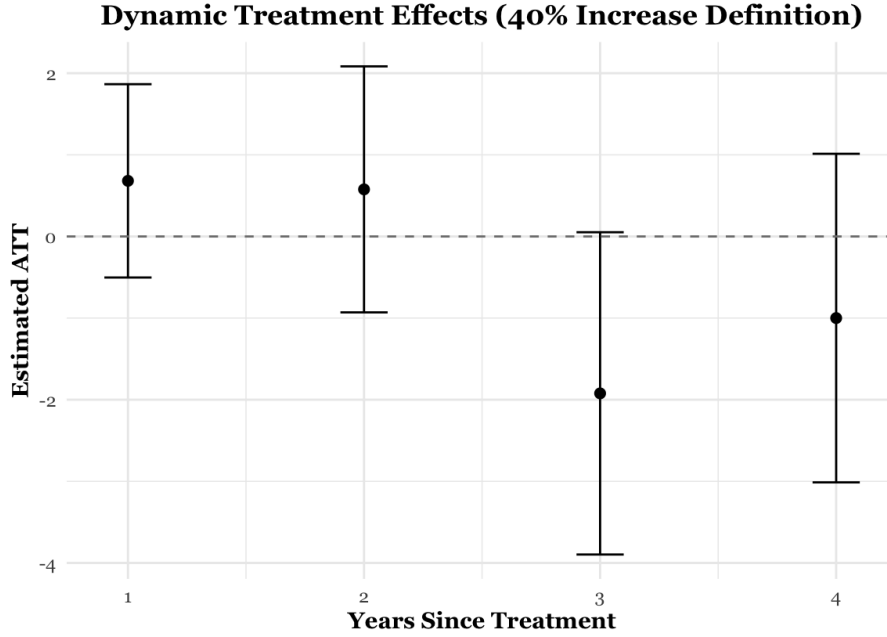nt study results show heterogeneous dynamic effects across the four post-treatment years (see Appendix Table 24). The estimated ATT is positive in the first two years (0.68 and 0.58), but both are statistically insignificant. In year three, the estimate becomes negative and relatively large (-1.92), approaching statistical significance with a confidence interval narrowly crossing zero. The fourth-year estimate remains negative (-1.00), though also imprecisely estimated. Across all years, the confidence intervals are wide, reflecting substantial uncertainty and limited statistical precision. The joint test of dynamic effects rejects the null of no effect at the 5% level (p = 0.0101), indicating that the treatment is associated with significant shifts in refugee attitudes over time. Placebo tests yield insignificant estimates (p = 0.84), suggesting no anticipatory behavior or pre-treatment differences between treated and control regions. Overall, the 40%-based specification suggests a delayed negative effect of rising gun violence on refugee sentiment.

8   Discussion and Future Research

The aim of this thesis was to examine whether the rise in gun violence between 2017 and 2023 has influenced public attitudes toward immigrants in Sweden, and whether this relationship is moderated by individuals' level of news consumption. The results suggest a modest association, whereby an increase in shootings is linked to reduced support for refugee intake. However, the effect is only statistically significant in some models, subgroups and interactions and mostly robust across specifications. This indicates that the relationship is likely very context dependent. But more importantly, the effect is especially

pronounced among individuals with higher levels of news consumption in most models. In many of the models, the impact of shootings on attitudes is conditional on the level of news consumption, and statistically significant. This suggests that the relationship between gun violence and public attitudes is mediated by news consumption, supporting the notion that media exposure plays a critical role in amplifying the perceived link between violence and immigration. While the findings do not indicate a dramatic shift in public opinion and are relatively small in magnitude, they point to a pattern that is both theoretically plausible and empirically relevant. The association is also stronger among older individuals, women, and above all those with lower levels of education, suggesting that demographic factors may further condition how such events shape public attitudes. These findings align with theories of agenda-setting and symbolic threat. As shootings receive increased media attention, they become more salient in public consciousness. Media framing that highlights the ethnic background of offenders or the concentration of violence in immigrant-dense areas may reinforce symbolic associations between immigrants and societal disorder. This, in turn, can foster prejudice and scapegoating, whereby entire communities are held collectively responsible for the actions of a few. However, these findings should be interpreted with some caution. The estimated effects are relatively small, and certain models yield very weak results. While the observed patterns are theoretically coherent and empirically suggestive, they do not provide definitive evidence of a causal relationship between gun violence and public attitudes toward immigrants.

Although the analysis provides valuable insights, several limitations should be considered. First, the assumption of no spillover effects across regions is unlikely to hold in a media-saturated environment, where national coverage can shape perceptions far beyond the immediate vicinity of violent events such as gang-related shootings. High-profile incidents, regardless of geographic proximity, may influence public attitudes nationwide. This weakens the interpretation of the treatment as strictly region-specific and underscores the need for future research that explicitly models information spillovers. Second, the analysis does not account for variation in media salience between incidents. Not all shootings are equally visible or salient to the public, i.e. some receive intense media attention, while others go largely unnoticed. The public salience of a shooting likely moderates its attitudinal effects, yet this heterogeneity is not captured in the current analysis. Due to time constraints and data limitations, I was not able to incorporate measures of media intensity (e.g., the number of shooting-related articles by region and year). However, initial exploration of this avenue suggests it would be a fruitful direction for future research. Another methodological limitation relates to the level of geographic aggregation. By focusing on regions rather than municipalities, a substantial amount of local variation in both shootings and attitudes was lost in this analysis. In hindsight, leveraging municipality-level data for the earlier years (2017–2019), when such data was available, could have enabled a more granular and spatially precise analysis. Future studies should consider prioritizing geographic specificity, even at the expense of temporal scope, when investigating spatially heterogeneous phenomena like gun violence.

Another limitation concerns the measurement of shootings, which treats all incidents as equivalent. Distinguishing between shootings that result in injuries and fatalities could have provided greater nuance, and revealed which types of incidents that are more likely to shape public attitudes. Furthermore, while the Swedish context provides a compelling

case for study due to its rapid increase in gun violence and politicization of immigration, it remains uncertain to what extent these findings are generalizable to other national contexts with different media systems, political institutions and migration dynamics. Many European countries share underlying conditions, such as severely socioeconomically disadvantaged neighborhoods and rising right-wing populism. Yet, no comparable trend in gang-related gun violence has been observed elsewhere in Europe. Comparative research could therefore offer valuable insights into how these dynamics manifest under varying structural and institutional conditions. Finally, future research should consider extending the time frame to include the period starting around 2013, when gun violence first began to escalate in Sweden. Due to data limitations, this earlier period could not be included in the present analysis, but incorporating it would likely improve causal inference and offer a better understanding of long-term trends. It would also be beneficial to use more direct measures of anti-immigrant sentiment as support for refugee intake, while applicable, remains an imperfect proxy. From a methodological perspective, more refined approaches are needed to account for the continuous, heterogeneous nature of gun violence. The methods employed in this thesis were limited in their ability to fully capture that variation. Taken together, there are several promising avenues for future research, particularly with regard to media salience, measurement sensitivity, and the use of more granular spatial and temporal data.

8.1 Concluding Remarks

This thesis underscores that rising anti-immigrant sentiment is not an inevitable consequence of gang-related violence, but rather a reflection of how such violence is framed, politicized and perceived. While most prior research finds no direct causal link between immigration and violent crime, the mere perception of such a link continues to shape public attitudes and drive policy debates, often with harmful repercussions. The findings presented here suggest that media-framed exposure to gun violence can heighten the salience of crime, potentially activating symbolic threat perceptions and scapegoating dynamics, which in turn can contribute to more negative attitudes toward immigrants.

The rising trend of gang-related violence in Sweden today is deeply troubling. As this violence escalates, it increasingly involves young people—many of whom are both victims and perpetrators. And as I write these concluding lines, yet another shooting has recently occurred. This time, three young males, two of them minors, were shot to death in broad daylight in central Uppsala. Once again, all three were of immigrant background, a detail made immediately visible in media coverage. When teenage boys are being killed in this way, we must pause and ask ourselves—not whether this is an immigration issue, but how society has failed them. From a policy perspective, addressing the structural roots of gang violence is essential. Equally important, however, is the need to counter harmful narratives that conflate crime with immigrants. Doing so requires coordinated efforts from media institutions, educators, and political leaders committed to fostering a more informed and inclusive public discourse. History has repeatedly shown that fear, polarization, and scapegoating are dangerous responses in times of crisis. Tackling these challenges therefore requires a unified and cohesive society, not one that grows more divided. At last, the way we talk about gang-related shootings matters. The narratives we choose to amplify—or ignore—not only shape public opinion but also affect the cohesion of our society.

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A Data

A.1 Control Variables

Political preference: Support for *the Sweden Democrats* (SD) is measured based on a question regarding party affiliation from the SOM surveys. I construct a binary variable where "1" indicates support for SD and "0" represents all other parliamentary parties. Since, SD consistently frames immigration as the root cause of gang-related crime, this variable captures how political alignment may shape attitudes toward immigrants.

Concern over Crime (regional share): I include a regional-level variable indicating the share of individuals who report feeling very concerned about crime in society, using data from SCB. This variable captures subjective perceptions of safety, which may influence attitudes toward immigration through mechanisms related to symbolic threat theory and scapegoating. When crime is seen as widespread and urgent, groups associated with it may be perceived as threats.

Major city: To account for major city effects I construct a binary variable that is coded "1" for respondents living in Stockholm, Malmö, or Gothenburg, which are the cities where most shootings occur and "0" otherwise.

Raised Abroad: I also create a binary variable for growing up abroad which is coded "1" if the respondent was raised outside Sweden and "0" otherwise. This variable is included as a control since immigrants or individuals raised abroad may hold more tolerant views on immigration, either due to their personal background, familiarity with diverse environments, or their own experience of living abroad as immigrants.

Gender and Age: To control for gender I recode the variable to a binary one and only include those who identify as a woman or a man. Those who have responded "other" to the gender question are excluded. Age is a continuous variable.

Concern over organized crime: To explore a potential mechanism through which shootings may influence attitudes toward immigrants I use concern over organized crime as the dependent variable using data from the SOM surveys. Respondents were asked the following question: *"Thinking about the current situation, how worried do you personally feel about the following in the future? Organized crime"*. The responses were measured on a four-point ordinal scale, ranging from very worried to not at all worried. Higher values indicate increasing concern over organised crime.

A.2 Descriptive Statistics

Table 13: Gender Distribution by Education Level

Education Level	n (Women)	n (Men)	Share Women (%)	Share Men (%)
Some Post-secondary	4,733	5,652	45.6	54.4
University or College Degree	6,348	8,968	41.4	58.6
Compulsory	3,575	2,900	55.2	44.8
Upper Secondary	7,277	6,060	54.6	45.4

Table 14: Age Distribution by News Consumption Level

News Consumption Level	Mean Age	Median Age	SD	N
High (3+)	58.3	61	16.4	11,912
Low (0)	46.5	46	18.1	12,429
Medium (1–2)	53.7	55	19.3	22,415

Table 15: Descriptive Statistics of Tax Crimes by Region (2017–2023)

Region	Mean	Median	Min	Max	SD	Mean/100k	Median/100k	Min/100k	Max/100k	SD/100k
Blekinge	69.50	66.50	22	108	33.49	43.72	41.83	13.79	67.99	21.10
Dalarna	0.60	0.50	0	2	0.70	0.21	0.17	0.00	0.69	0.24
Gotland	32.12	32.00	3	87	27.02	70.94	54.60	26.91	147.65	52.78
Gävleborg	145.78	186.00	2	264	97.85	50.81	64.71	0.70	92.00	34.11
Halland	136.11	164.00	62	183	46.91	40.81	48.02	18.06	56.73	14.27
Jämtland	61.50	51.00	28	123	29.63	46.98	38.84	21.28	94.58	22.89
Jönköping	114.75	114.50	46	213	57.81	31.57	31.67	12.70	58.19	15.73
Kalmar	79.75	75.00	48	130	27.25	32.45	30.61	19.66	52.90	11.09
Kronoberg	198.12	139.50	58	420	132.44	98.08	68.41	29.19	209.29	65.50
Norrbotten	143.56	109.00	56	338	89.33	57.38	43.81	22.43	135.28	35.69
Skåne	1194.42	1147.50	882	1682	244.39	86.45	82.76	62.20	124.28	18.56
Stockholm	3668.08	3111.00	2857	5356	924.46	154.57	131.70	116.73	234.03	42.22
Södermanland	128.30	121.50	34	266	86.06	42.87	40.96	11.39	88.49	28.42
Uppsala	214.80	220.00	6	368	133.98	55.54	56.12	1.61	98.75	35.10
Värmland	1.09	1.00	0	2	0.54	0.39	0.35	0.00	0.71	0.19
Västerbotten	165.80	156.00	87	254	56.77	60.92	56.42	32.30	93.75	21.06
Västernorrland	106.20	109.00	68	136	20.80	43.42	44.55	27.83	55.34	8.36
Västmanland	113.00	119.00	4	231	69.40	40.82	42.52	1.48	83.08	25.05
Västra Götaland	1122.33	1030.00	944	1424	175.28	64.88	60.05	53.55	82.30	10.26
Örebro	1.30	1.50	0	2	0.82	0.43	0.49	0.00	0.67	0.27
Östergötland	121.55	123.00	13	189	53.47	26.08	26.38	2.80	40.14	11.38

Table 16: Total Shootings by Region and Year

| Number of Shootings by Region and Year								
Sweden 2017–2023								
Region	2017	2018	2019	2020	2021	2022	2023	Total
Stockholm	78	105	99	164	136	129	119	830
Skåne	93	77	67	44	50	67	80	478
Västra Götaland	27	52	36	47	35	40	38	275
Uppsala	23	23	34	14	16	13	17	140
Södermanland	14	13	11	15	9	37	17	116
Västmanland	8	5	14	10	16	15	21	89
Östergötland	2	2	12	9	12	11	20	68
Jönköping	10	10	11	13	3	9	7	63
Gävleborg	7	3	7	15	7	12	7	58
Örebro	0	6	6	9	12	16	9	58
Halland	11	7	11	7	6	8	4	54
Norrbotten	1	8	18	5	9	7	2	50
Kronoberg	0	2	7	6	7	3	4	29
Kalmar	1	4	2	2	4	12	3	28
Dalarna	1	2	4	3	5	2	7	24
Västerbotten	0	2	9	5	3	1	2	22
Värmland	1	0	5	1	4	3	7	21
Västernorrland	1	1	6	5	6	2	0	21
Blekinge	3	1	0	3	4	4	1	16
Jämtland	0	2	1	2	0	0	3	8
Gotland	0	0	0	0	0	0	0	0
Total	**281**	**325**	**360**	**379**	**344**	**391**	**368**	**2,448**
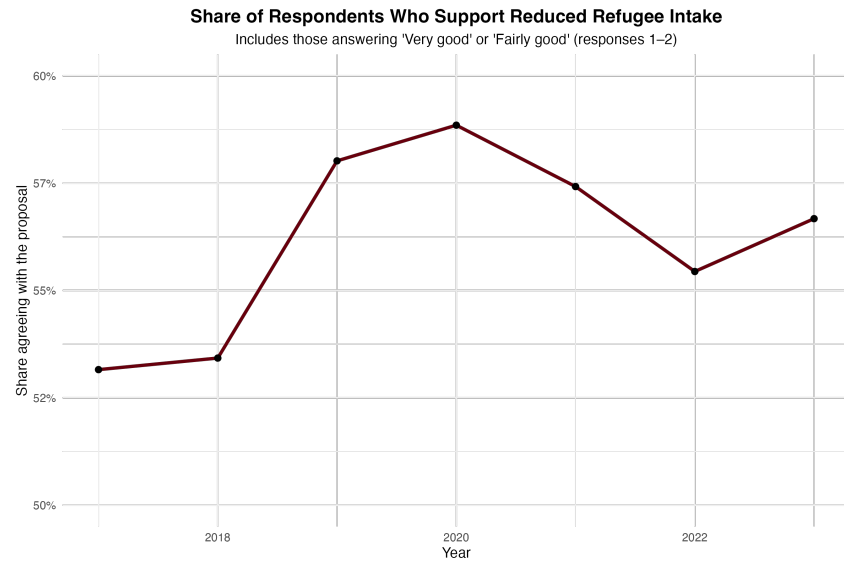
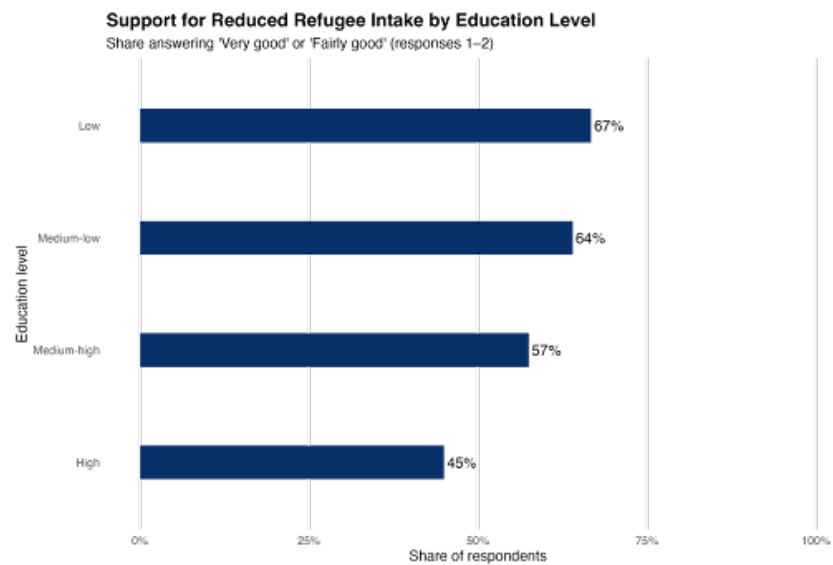Figure 12: Support for Reduced Refugee Intake (2017–2023)

Figure 13: Support for Reduced Refugee Intake by Education Level (2017–2023)

B   Robustness Tests

Table 17: Log of Shootings on Restrictive Refugee Attitudes (TWFE)

	(1) Baseline	(2) + News × Interaction	(3) + Individual Controls	(4) + Regional Controls
Log(Shootings)	-0.015	-0.002	-0.010	-0.009
	(0.023)	(0.027)	(0.022)	(0.018)
News: Medium		0.007	0.011	0.010
		(0.033)	(0.030)	(0.029)
News: High		-0.127*	-0.061	-0.062
		(0.050)	(0.038)	(0.037)
Log(Shootings) × Medium News		-0.016	-0.014	-0.013
		(0.010)	(0.008)	(0.008)
Log(Shootings) × High News		-0.025$^+$	-0.023*	-0.022*
		(0.014)	(0.010)	(0.010)
Controls	No	No	Yes	Yes
FE: Region	X	X	X	X
FE: Year	X	X	X	X
R^2	0.009	0.013	0.167	0.167
Observations	43,225	43,225	43,225	43,225

Note: Standard errors in parentheses, clustered by region. Log(Shootings) is based on the number of shootings in the past 12 months. Model (1) includes only log shootings. Model (2) adds categorical news consumption (Low [ref], Medium, High) and interactions with log shootings. Model (3) includes individual-level controls: SD support, education (reference: Low), age, urban residency, and raised abroad. Model (4) adds regional controls: crime concern, foreign background share, and log population size.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 18: Shootings per Capita on Restrictive Refugee Attitudes (TWFE)

	(1) Baseline	(2) + News × Interaction	(3) + Individual Controls	(4) + Regional Controls
Shootings per capita	-0.004	0.003	0.001	0.002
	(0.008)	(0.008)	(0.007)	(0.006)
News: Medium		-0.058**	-0.032$^+$	-0.033$^+$
		(0.016)	(0.017)	(0.017)
News: High		-0.202***	-0.171***	-0.172***
		(0.022)	(0.017)	(0.017)
Shootings × Medium News		-0.007*	-0.007*	-0.007*
		(0.003)	(0.003)	(0.003)
Shootings × High News		-0.010**	-0.010**	-0.010**
		(0.003)	(0.003)	(0.003)
Controls	No	No	Yes	Yes
FE: Region	X	X	X	X
FE: Year	X	X	X	X
R^2	0.009	0.014	0.167	0.167
Observations	43,225	43,225	43,225	43,225

Note: Standard errors in parentheses, clustered at the regional level. Shootings per 100,000 is calculated as the number of shootings in the past 12 months divided by the region's average population size, multiplied by 100,000.
Model (1) includes only shootings per capita. Model (2) adds news consumption (three levels: Low [ref], Medium, High) and interactions with shootings. Model (3) adds individual-level controls: SD support, education (reference: Low), age, urban residency, and raised abroad. Model (4) includes regional-level controls: crime concern (share), foreign background (share), and logged population size.
$^+$ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 19: Tax Crimes per 100,000 on Attitudes Toward Refugees (TWFE)

	(1) Baseline	(2) + Individual Controls	(3) + Regional Controls
Tax Crimes per 100,000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
News Consumption		-0.110***	-0.110***
		(0.014)	(0.014)
SD Supporter		-1.179***	-1.179***
		(0.017)	(0.017)
Education Level		0.152***	0.152***
		(0.005)	(0.005)
Age		-0.005***	-0.005***
		(0.000)	(0.000)
Urban Resident		0.166***	0.166***
		(0.041)	(0.041)
Raised Abroad		0.136*	0.136*
		(0.052)	(0.052)
Crime Concern (share)			-0.918
			(0.544)
Foreign Background (share)			2.049
			(3.647)
Population (log)			-1.340
			(0.975)
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.009	0.163	0.164
Observations	43,218	43,218	43,218

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable is support for reducing refugee intake (1–5 scale). Column (1) includes only regional tax crimes per 100,000. Column (2) adds individual-level controls: news consumption, SD support, education (numeric), age, urban residence, and whether the respondent was raised abroad. Column (3) includes regional contextual controls: share concerned about crime, foreign-background population share, and logged average population.
[+] p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

Table 20: Perceived threat to Swedish culture and values

	(1) Baseline	(2) + News × Interaction	(3) + Individual Controls	(4) Full Controls
Shootings	-0.0016*	-0.0014+	-0.0001	-0.0006
	(0.0007)	(0.0007)	(0.0008)	(0.0008)
News Consumption		-0.0578***	-0.0189*	-0.0185*
		(0.0117)	(0.0086)	(0.0087)
Shootings × News Consumption		-0.0001	-0.0002	-0.0002+
		(0.0001)	(0.0001)	(0.0001)
Education Level: Medium-low			0.1816***	0.1822***
			(0.0350)	(0.0347)
Education Level: Medium-high			0.4314***	0.4316***
			(0.0413)	(0.0412)
Education Level: High			0.7377***	0.7375***
			(0.0468)	(0.0466)
SD Supporter			-1.6395***	-1.6395***
			(0.0496)	(0.0496)
Age			-0.0101***	-0.0101***
			(0.0005)	(0.0005)
Urban Resident			0.1659***	0.1662***
			(0.0377)	(0.0375)
Raised Abroad			0.0998	0.0998
			(0.0784)	(0.0783)
Foreign Background (share)				8.0228
				(6.5473)
Population (log)				-0.1713
				(2.6125)
Fixed effects: Region	X	X	X	X
Fixed effects: Year	X	X	X	X
R^2	0.016	0.021	0.246	0.246
Observations	12,057	12,057	12,057	12,057

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable measures perceived threat to Swedish culture and values on a 5-point scale, where lower values indicate greater concern.
+ p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

C Heterogenous effects

Table 21: Shootings and Refugee Attitudes in Non-Urban Areas (TWFE)

	(1) Baseline	(2) + News Interaction	(3) + Full Controls
Shootings	-0.0157	-0.0226	-0.0217
	(0.0235)	(0.0380)	(0.0410)
News: Medium		-1.2157	-1.4611
		(0.8968)	(0.9630)
News: High		-1.2805	-1.5152
		(1.0682)	(1.1117)
Shootings × Medium News		0.0091	0.0139
		(0.0278)	(0.0281)
Shootings × High News		0.0091	0.0063
		(0.0180)	(0.0193)
SD Supporter			-1.3028*
			(0.4924)
Age			0.0477**
			(0.0147)
Education			-0.2050
			(0.1891)
Raised Abroad			2.8062*
			(1.0205)
Foreign Background Share			X
Crime Concern Share			X
Log(Population)			X
Fixed effects: Region	X	X	X
Fixed effects: Year	X	X	X
R^2	0.093	0.093	0.094
Observations	23,934	23,934	22,628

Note: Standard errors in parentheses, clustered at the regional level. The dependent variable captures attitudes toward refugees. The sample is limited to respondents in towns and rural areas.
[+] p ¡ 0.1, * p ¡ 0.05, ** p ¡ 0.01, *** p ¡ 0.001

D Parallel Trends Assumption

Table 22: Placebo Regression: Parallel Trends Test (2006–2012)

Variable	Estimate	Std. Error	p-value
Intercept	2.665	0.031	¡ 0.001
Year (centered)	0.027	0.010	0.006
High Violence Region	-0.043	0.036	0.235
Year × High Violence Region	0.014	0.011	0.218
Observations		23,569	
R^2 Adj.		0.002	
RMSE		1.275	

Note: OLS regression using refugee attitude (1–5 scale) as the dependent variable. The model estimates trends from 2006 to 2012, before shootings began to rise. The interaction term tests whether attitudes evolved differently across regions that would later experience high vs. low levels of gun violence. Standard errors are unclustered.

E Placebo Tests for Dynamic Treatment Effects

Table 23: Dynamic Treatment Effects and Placebo Tests (Max-Based Definition)

Period	Estimate	SE	LB CI	UB CI	N	Switchers
Effect_1	0.331	0.729	-1.097	1.759	46	17
Effect_2	0.195	1.051	-1.864	2.254	34	16
Effect_3	-1.750	1.235	-4.171	0.672	27	15
Effect_4	0.140	1.062	-1.941	2.222	21	14
Test of joint nullity of effects: **p = 0.056**						
Average cumulative effect	-0.317	0.896	-2.073	1.439	91	62
Avg. time periods effect is accumulated over: 2.59						
Placebo_1	-0.938	1.885	-4.633	2.758	46	17
Placebo_2	-0.604	5.216	-10.828	9.619	24	9
Test of joint nullity of placebos: **p = 0.842**						

Table 24: Dynamic Treatment Effects and Placebo Tests (40% Increase Definition)

Period	Estimate	SE	LB CI	UB CI	N	Switchers
Effect_1	0.681	0.604	-0.503	1.866	42	16
Effect_2	0.577	0.769	-0.930	2.084	35	16
Effect_3	-1.922	1.007	-3.897	0.052	28	15
Effect_4	-1.000	1.027	-3.013	1.013	22	14
Test of joint nullity of effects: **p = 0.010**						
Average cumulative effect	-0.473	0.691	-1.827	0.881	91	61
Avg. time periods effect is accumulated over: 2.63						
Placebo_1	-0.242	2.159	-4.474	3.989	42	16
Placebo_2	1.135	4.049	-6.800	9.070	26	10
Test of joint nullity of placebos: **p = 0.836**						