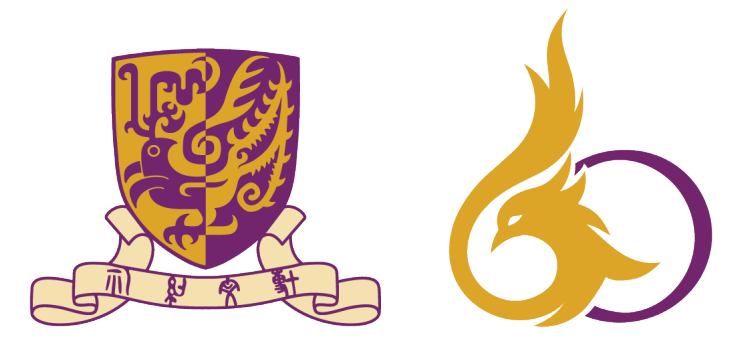


Friends and Firearms: Social Ties and Gun Demand After Distant Mass Shootings



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Abstract

Gun ownership is central to debates over household security and public safety, yet research on its determinants remains limited. This paper examines how social networks shape the decision to own a firearm. Using gun-store visits as a proxy for gun demand and Facebook social connectedness to measure network ties, we show that local gun demand significantly increases after a mass shooting in socially connected but geographically distant communities. The effect emerges in **week 2** and **persists for 6–8 weeks**. Evidence points to **information transmission** and **heightened safety concerns** as primary mechanisms, beyond geographic proximity.

Motivation

As enshrined in the Second Amendment of the U.S. Constitution, the right to keep and bear arms is a fundamental right secured by the constitution.

Nearly **46,000** gun-related deaths annually; firearms are the leading cause of death for youth 1–19. Estimated cost of gun violence: **\$557B/year** (2.6% of GDP). Public opinion remains polarized; **58%** favor stricter laws.

Prior research emphasizes **local** effects of mass shootings; little is known about contagion via **social networks**.

We study whether **social proximity (SCI)** to the event county generates defensive responses in **geographically distant** communities.

Broader consequences: if social contagion raises gun ownership, it may affect crime and safety dynamics (e.g., Koenig & Schindler, 2023; Rosenberg, 2024).

Contributions

- (1) Provide **first causal evidence** that fear propagates through **social networks**, shaping defensive behavior in **socially connected yet geographically distant** counties.
- (2) Extend literature on social connections and behavioral contagion: fear diffusion, social interactions and crime/migration.
- (3) Address data limitations in gun ownership research: complement NICS with **high-frequency mobility-based** visits to gun stores; validate against NICS (Koenig & Schindler, 2023).

Data

Mass shootings: USA Today, 95 events (2021–2024).

Social ties: Facebook Social Connectedness Index (SCI) (Bailey et al., 2018).

Gun store visits: Weekly foot-traffic (SafeGraph; Advan Research POI).

Additional: ACS 5-year county covariates (population, income, education, race); Google Search Index; FBI NIBRS (incident-level crime).

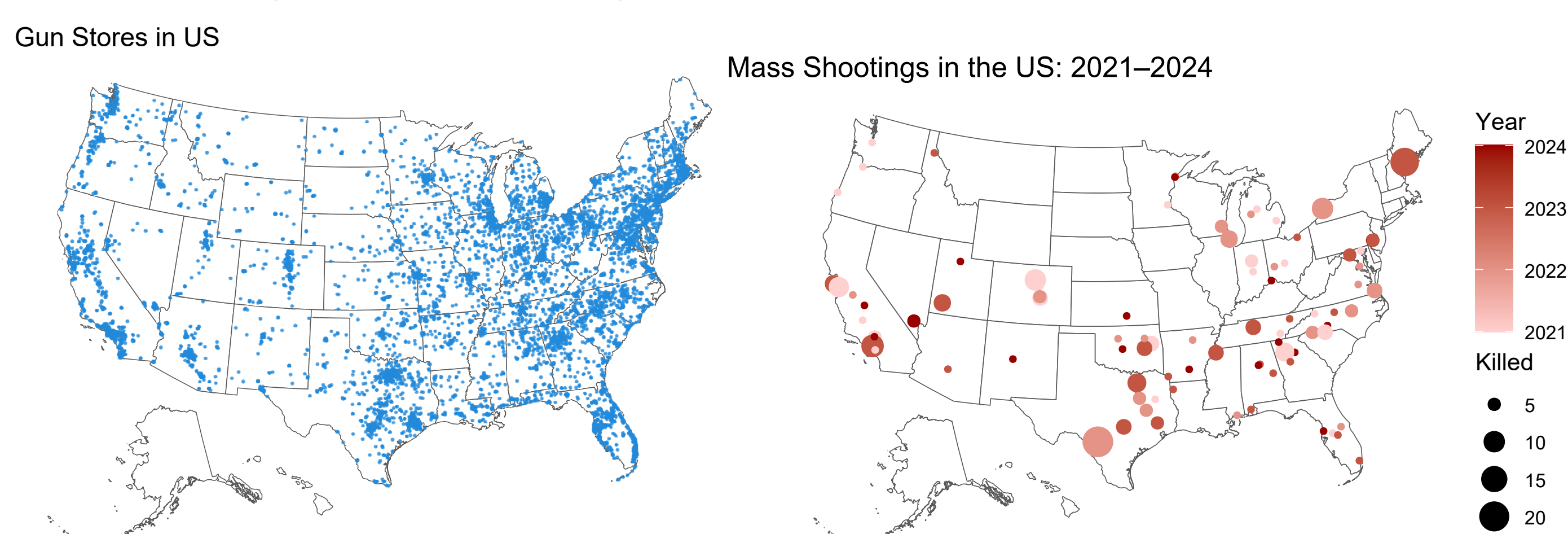


Figure 1: Maps: Shootings and Gun Stores

Identification Strategy

For each event, compare counties *within the same state* that are more vs. less socially connected (SCI) to the shooting county, while excluding geographically proximate counties to avoid spatial spillovers.

We stack each individual event studies (with respect to every gun shooting event). Each event study features the following DID:

DID (PPML) baseline:

$$\mathbb{E}[Y_{iet}] = \exp \{ \alpha + \beta (Treat_{ie} \times Post_{et}) + \delta_{i \times e} + \lambda_{t \times e} \}$$

Y_{iet} denotes the number of gun-store visits in county i and week t in the panel stacked around event e .

$Treat_{ie} = 1$ if county i 's SCI to event county e exceeds the **within-state median**.

$Post_{et}$ is an indicator for the weeks after mass shooting event e .

Fixed effects: **county-by-event** ($\delta_{i \times e}$) and **week-by-event** ($\lambda_{t \times e}$).

Standard errors clustered at **county-by-event**.

Identification: Excluding counties within 500 km

Treated vs Control Counties

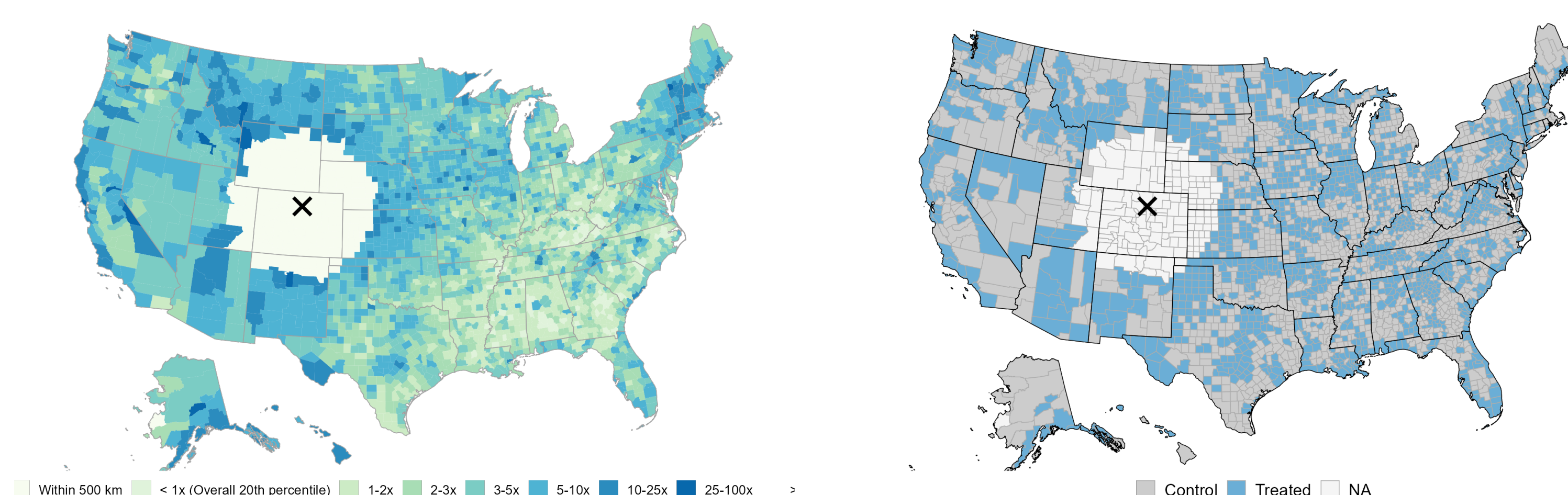


Figure 2: Identification Strategy

Main Results

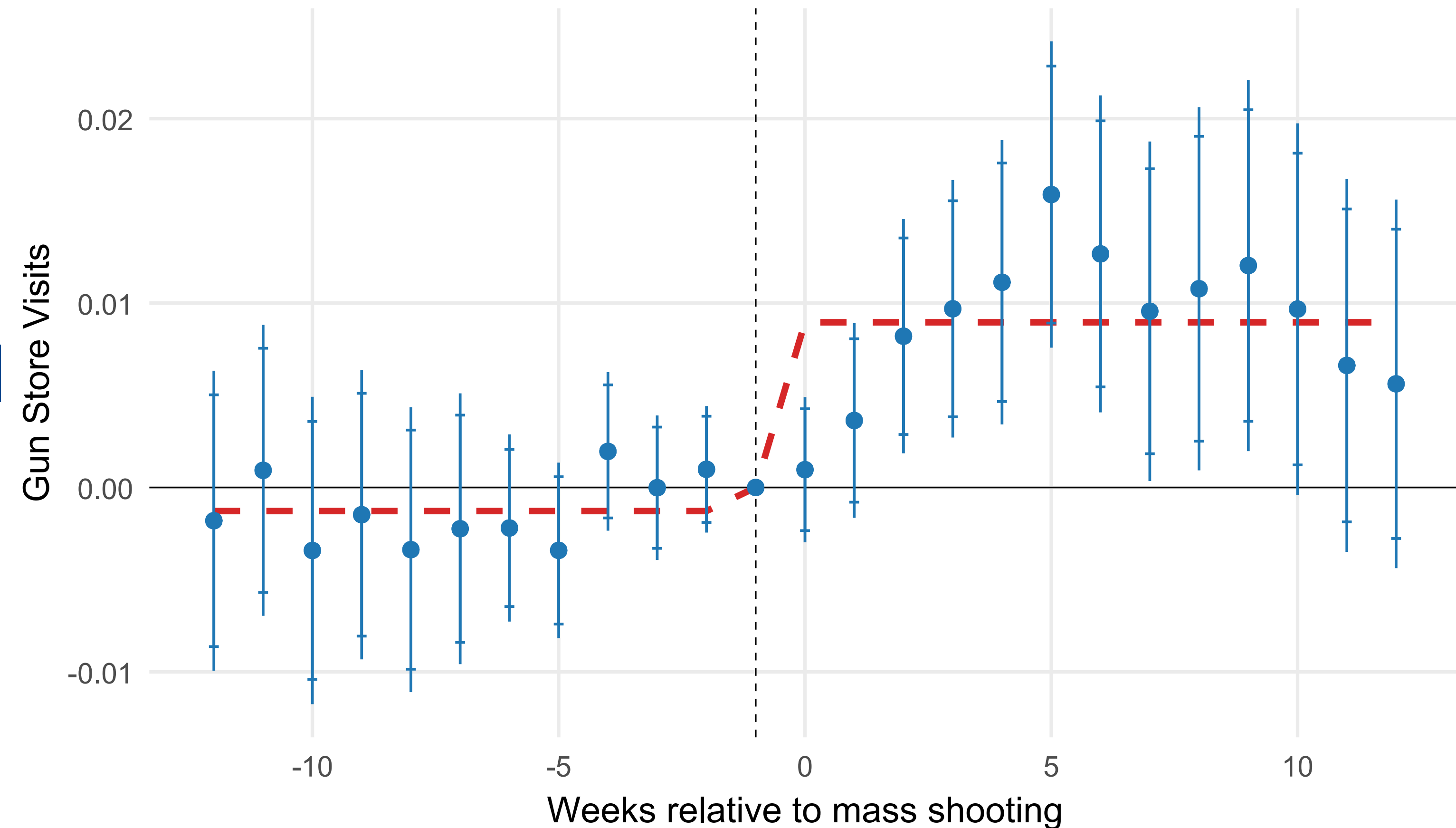


Figure 3: Parallel trend test (event-time)

Table 1: Baseline results

	Visits					
	500 km		750 km		1000 km	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat × Post	0.0121** (0.0049)	0.0100*** (0.0037)	0.0154*** (0.0054)	0.0122*** (0.0040)	0.0185*** (0.0061)	0.0126*** (0.0044)
County-Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Week-Event FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Week FE		Yes		Yes		Yes
Observations	3,233,830	3,232,891	2,849,090	2,848,199	2,400,447	2,399,660
Pseudo R ²	0.9752	0.9779	0.9751	0.9779	0.9753	0.9779

Summary:

Week 2 onset: Gun store visits rise in *socially connected* counties starting in week 2 post-event.

Persistence: Effects last **6–8 weeks**, consistent across PPML/log specs and exposure thresholds.

Robustness

Geographic exclusion radii: 500, 750, 1000 km.

Alternative treatment: top vs bottom quartile of SCI (75 v.s. 25); continuous measurement (Log(SCI)).

Outcome variants: # of visitors, daily visits.

Placebo test, PSM, first-event-only sample.

Mechanisms

Information Salience: (1) Google search spikes (mass shooting, gun store); (2) Stronger response in counties with no prior shootings; (3) Higher internet penetration.

Heterogeneity

Heterogeneity: Women, older adults, democrat more likely to react.



Figure 4: Heterogeneity

Conclusion

Gun store visits increase significantly in counties socially connected to a mass shooting location, even when geographically distant.

The effect begins in the second week after the event and persists for 6–8 weeks.

Mechanisms point to information transmission and heightened safety concerns rather than local spillovers.

These findings highlight the role of interpersonal ties in shaping behavioral responses to violence shocks and suggest that social networks amplify fear contagion beyond physical boundaries.

References

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