

Do Public Libraries Help Mitigate Crime? Evidence from Kansas City, MO

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Connecting with Local Government Official, Montana State Library

Preview of Results

- ▶ Reduction in burglary, vandalism, robbery, fraud, and assault within the nearby proximity (~ 3 miles) of the public library building.
- ▶ Reduction in counts of total offenses against people (~ 42) and property (~ 154), but no effect on total offenses against society and other.
- ▶ Effects are stronger closer to the public library building and vanish after certain thresholds.

Motivation

- ▶ The total cost of crime in the United States is estimated to be between \$690 billion and \$3.41 trillion annually, according to the US GAO in 2017.
- ▶ Crime rates and their associated expenses, including investigations, prosecutions, and incarcerations, cost the United States over \$2.6 trillion in 2017 alone (Miller et al., 2021)
- ▶ Urban amenities such as public libraries can affect both the associated marginal benefits and marginal costs of crime: **empirical question**.

Externalities of Public Library Activities

- ▶ Crime: Porter (2014) reports increases in operating hours negatively affect aggravated assault rates and car burglaries, and induce burglary substitution effects as criminals move to farther areas
- ▶ Education: reading and homework completion (Bhatt 2010, Gilpin et al 2021, Karger 2021)
- ▶ Innovation: patenting (Berkes and Nencja 2021)
- ▶ Labor Market Outcomes: unemployment rates and labor force participation (Ferreira Neto 2019, Karger 2021)

Prosocial Organizations and Crime

- ▶ Schaible et al. (2021) argues that nonprofits mitigate local criminal activity through increasing collective efficacy and social capital.
- ▶ Jacoby (2018) finds that an increase in both presence and funding of nonprofits organizations negatively affects the criminal activity level, while Wo et al. (2016) report heterogeneous effects of voluntary organizations on crime by organization type and age.
- ▶ Slocum et al. (2013) show that areas with more organizations have an overall lower crime incidence. In contrast, schools and government agencies (including public libraries) are associated with increased crime.
- ▶ Peterson et al. (2000) also find that local institutions can mitigate criminal activities, but their results for public libraries are not statistically significant.

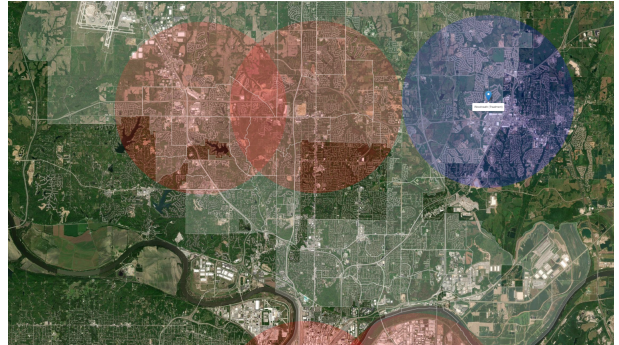
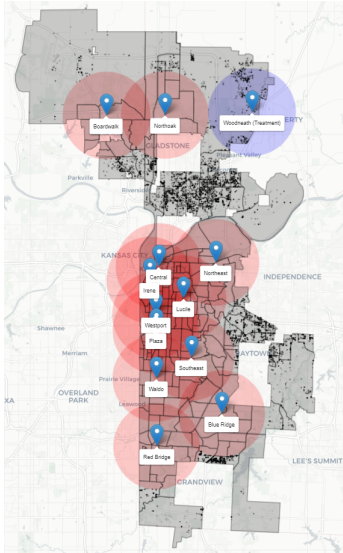
Theoretical Mechanism of Public Library Effect on Crime

- ▶ Effects on Marginal Benefit of Crime
 - ▶ Public libraries provide an array of programs to children and adults; as a result, they also assist with literacy and labor market outcomes.
 - ▶ Public libraries can be a focal point in the neighborhood by inducing an agglomeration of communal activities (more targets).
- ▶ Effects on Marginal Cost of Crime
 - ▶ Public libraries provide a physical presence of local government in a community to some extent (“eyes on the street”) and revitalization of surroundings.
 - ▶ Agglomerations and crowds also increase the probability of deception.

The Woodneath Public Library

- ▶ For over 20 years, the public library system in Kansas City, MO, only had 12 public library branches, but in June 2013, the Woodneath Public Library Branch was inaugurated – *quasi-experiment*.
- ▶ Site was originally a 33-acre farmland adjacent to a historic 1850s farmhouse owned by one of the most prominent families in the region.
- ▶ Woodneath Public Library Branch is located within a wealthy suburb of Kansas City called Shoal Creek Valley mitigating concerns of gentrification dynamics.

Empirical Approach



► Public Library Survey and Crime Open Database (2010-2019)

Offense	Count	Offense	Count
Offense against property:		Offense against society:	
larceny/theft offenses	282871	drug/narcotic offenses	55684
burglary/breaking & entering	116706	trespass of real property	30465
destruction/damage/vandalism of property (except arson)	102111	disorderly conduct	16483
motor vehicle theft	76320	driving under the influence	9653
robbery	52021	weapon law violations	9513
fraud offenses (except counterfeiting/forgery and bad checks)	36853	family offenses, nonviolent	6186
counterfeiting/forgery	10109	prostitution offenses	3178
stolen property offenses	5194	liquor law violations (except driving under the influence and drunkenness)	2408
arson	5015	drunkenness (except driving under the influence)	843
embezzlement	3817	curfew/loitering/vagrancy violations	764
bad checks (except counterfeit checks or forged checks)	290	pornography/obscene material	299
extortion/blackmail	107	peeping tom	47
bribery	4	gambling offenses	6
Offense against persons:		Offense against other:	
assault offenses	233870	all other offenses	84536
sex offenses	11550		
homicide offenses	2184		
kidnapping/abduction	1227		
sex offenses, nonforcible	734		
human trafficking	22		

Econometric Approach

$$Y_{it} = \alpha + \beta treat_i + \gamma post_t + \delta(treat_i \times post_t) + \omega t + \varepsilon_{it} \quad (1)$$

- ▶ α : Gives the average number of criminal offenses within the area before Woodneath's opening period
- ▶ β : Provides the difference in average criminal offenses before June 2013 – between the proposed Woodneath location and existing public libraries. Captures the systematic differences between the treatment and control groups.
- ▶ γ : Shows the difference in average criminal offenses before and after June 2013 and captures the systematic average trend difference between treatment and control groups
- ▶ δ : **Parameter of interest**. Quantifies the change in criminal offense incidents in the proximity of the Woodneath branch location.

Results

Table: Impacts of opening of Woodneath library on various property criminal offenses

	Criminal offenses counts						
	Lacerny (1)	Burglary (2)	Vandalism (3)	Motor (4)	Robbery (5)	Fraud (6)	Forgery (7)
$\alpha : intercept$	401.697*** (16.428)	171.800*** (6.365)	130.444*** (6.328)	82.926*** (4.342)	27.266*** (2.397)	61.957*** (3.407)	14.916*** (1.255)
$\beta : treat$	-339.166*** (16.847)	-163.602*** (6.421)	-116.955*** (6.413)	-79.217*** (4.388)	-26.580*** (2.429)	-52.230*** (3.552)	-12.306*** (1.355)
$\gamma : post$	20.273 (28.016)	33.721*** (12.802)	47.411*** (12.448)	13.633 (8.344)	11.061** (4.715)	38.324*** (7.688)	6.826** (2.745)
$\delta : treat \times post$	-22.516 (28.740)	-31.380** (12.933)	-41.747*** (12.618)	-15.733* (8.434)	-11.475** (4.786)	-30.921*** (8.021)	-3.751 (2.962)
Observations	240	240	240	240	240	240	240
R ²	0.840	0.869	0.821	0.853	0.693	0.744	0.526
Adjusted R ²	0.837	0.866	0.817	0.850	0.687	0.739	0.516

Results

Table: Impacts of opening of Woodneath library on society and person-related criminal offenses

	Criminal offenses counts					
	Trespass (8)	Disorderly (9)	DUI (10)	Weapon (11)	Assault (12)	Sex (13)
$\alpha : \text{intercept}$	7.404*** (2.025)	9.119*** (1.204)	6.150*** (0.607)	3.493*** (0.599)	184.479*** (9.223)	12.791*** (1.281)
$\beta : \text{treat}$	-6.591*** (2.061)	-8.389*** (1.234)	-5.597*** (0.629)	-3.295*** (0.612)	-169.743*** (9.327)	-11.278*** (1.313)
$\gamma : \text{post}$	-7.692* (4.193)	4.800* (2.469)	0.079 (1.111)	-0.533 (0.997)	37.474** (19.044)	2.296 (2.216)
$\delta : \text{treat} \times \text{post}$	6.795 (4.281)	-4.590* (2.573)	0.307 (1.150)	0.512 (1.011)	-41.097** (19.185)	-1.422 (2.285)
Observations	240	240	240	240	240	240
R ²	0.614	0.496	0.499	0.495	0.861	0.591
Adjusted R ²	0.606	0.486	0.489	0.484	0.858	0.582

Results

- ▶ Total Offenses by Type [Results](#)
- ▶ Varying Radius of Impact [Results](#)
- ▶ Random Permutation of Woodneath Location [Results](#)

Why do public libraries reduce criminal offenses?

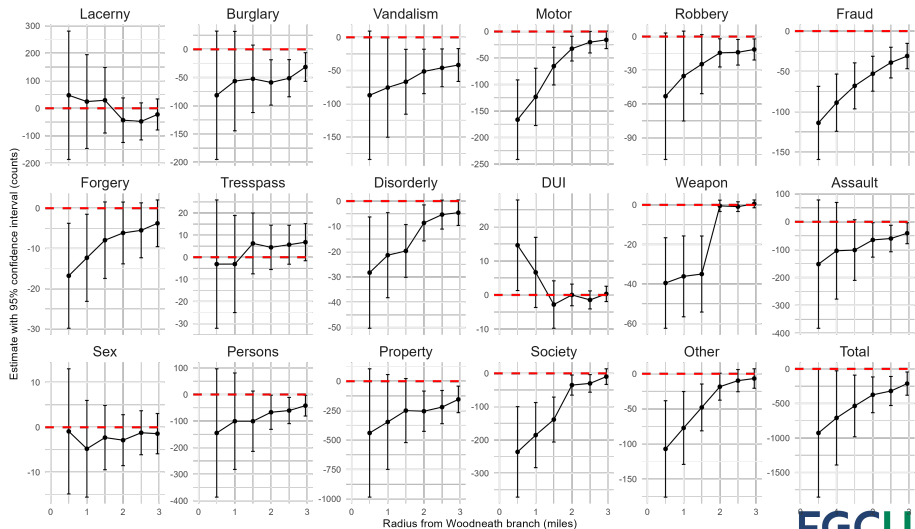
- ▶ On its own a public library would not pose much of a deterrence, but the additional components of a new piece of infrastructure including increased numbers of pedestrians, security cameras, lighting fixtures, and new law enforcement patrol routes, may create the perception that crime is either easier or more challenging to commit
- ▶ Libraries can act as a safe haven from the dangers inherent in street life— they position themselves as safe places through policies and procedures designed to protect employees, the public, and the building itself in instances such as natural disasters, emergencies, or civil unrest.
- ▶ Populations living in poverty can realize outsized impacts from access to public libraries, as access to materials that can boost education and literacy tends to be unequally distributed.

Policy Implication

- ▶ The physical presence of the library versus its programmatic activities, theory suggests that both should contribute to criminal activity reduction, we can't disentangle these mechanisms.
- ▶ The physical presence increases costs of crime by increasing the probability of arrest.
- ▶ Programs should help with educational and creativity outcomes, which in turn increases the likelihood of a successful career, thereby increasing the opportunity cost of pursuing a criminal career.
- ▶ Local governments should take these externalities into account when determining how much funding should be allocated for such institutions.

Table: Impacts of opening of Woodneath library on total offenses

	Offenses against counts				
	Persons (14)	Property (15)	Society (16)	Other (17)	Total (18)
α : <i>intercept</i>	199.176*** (9.749)	899.829*** (31.205)	88.499*** (5.665)	83.631*** (4.149)	1,271.134*** (44.624)
β : <i>treat</i>	-182.754*** (9.848)	-797.438*** (31.625)	-79.459*** (5.753)	-74.941*** (4.226)	-1,134.592*** (45.041)
γ : <i>post</i>	38.931** (19.788)	168.668*** (56.830)	12.453 (11.856)	8.184 (6.946)	228.235*** (85.128)
δ : <i>treat</i> \times <i>post</i>	-41.974** (19.941)	-154.473*** (57.493)	-9.779 (11.991)	-6.772 (7.072)	-212.998** (85.731)
Observations	240	240	240	240	240
R ²	0.867	0.886	0.782	0.823	0.890
Adjusted R ²	0.864	0.883	0.778	0.819	0.888



Appendix hyperlinkresults [Back](#)

