Can Safe Ride Programs Reduce Urban Crime?

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This study evaluates the influence of a safe ride program on neighborhood crime in a major urban area. Using an hours of the week panel, the program's operation is associated with an approximate 14 percent reduction in crime. The program being open appears to have roughly similar influences on different categories of crime. Moreover, increases in rides (the intensity of the program) are also associated with reductions in crime. Such increases in program intensity are also associated with notably greater reductions in crime occurring on weekends. The cost of the safe ride program suggests it is a relatively efficient means of reducing crime.

Introduction

What is a Safe Ride Program?

Safe ride programs pick up and deliver students and staff for transportation near the university. All students and staff have access to Be On the Safe Side (BOSS), which provides taxi-like services in a region surrounding University of Wisconsin-Milwaukee. Each program varies, since there is not centralized federal guidelines for safe ride programs.

The programs vary, but all are designed to prevent victimization, and to some extent drunk driving. Among US universities, 34% of public four year institutions have safe ride programs, and so do 24% of private four year institutions.

Practical Relevance

34% of US public four year universities have safe ride programs.

24% of US private four year universities have save ride programs.

Anticipated Impact

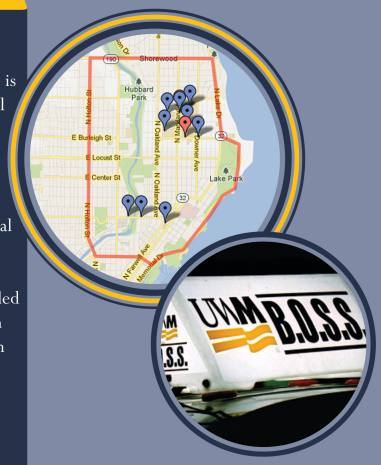
Safe rides may reduce the profitability of crime by reducing the number of potential victims on the street, and adding official eyes and ears. They may, alternatively, create additional crime by improving access to alcohol.

Case Study

Boss Program (Milwaukee, WI)

In this case study, the safe ride program is free at the point of service. Students call for a ride, wait indoors until a van arrives, and then the van takes them to their destination. Vans are marked by combinations of unique lights and paint, and are connected by radio with a central station in the student union.

In the 3-year study period, BOSS provided an average of 133,733 rides a year at an average cost of $3.18 each. Cost to each student is a flat $10.30 per semester in fees. No cost at the door.



Data

Data was gathered hourly from January 1st, 2005 to June 30th, 2008 from numerous sources, and combined together. After combining data from the safe ride program, the city police department, a local airport, and the school's academic calendar, a panel data set was created containing with 162 hours of the week, i, each observed over 182 weeks, t, (≈30,578 total hours). This contains information on the safe ride program, crime counts, weather, and if school is in session or not.

Data Specification

Each hour of the week is expected to have different amounts of crime, for example, Sunday at 12:00 is not the same as Friday at 21:00. The program is naturally placed within those hours in which the crime is the highest. A fixed effect is here to control for the heterogeneity among hours. Conveniently, Poisson can be used for both count data, and has a fixed effect extension, shown here: $crime_{it} = e^{open_{it}*\delta_1 + x_{it}*\beta + \epsilon_{it}}$ The vector x_{it} varies four times as controls are progressively added.

Poisson Results

	1	2	3	4
Open	-0.09102	-0.08757	-0.08480	-0.15179
	(1.84)*	(1.74)*	(1.68)*	(3.06)***
School in Session		0.16624	0.17256	0.18292
		(4.48)***	(4.61)***	(5.35)***
Daily Precipitation (cm)			-0.01742	-0.01360
			(1.43)	(1.47)
Daily Snowfall (cm)			-0.03731	-0.09934
			(2.61)***	(2.46)**
Daily Snow on Ground (cm)			-0.02401	-0.02535
			(1.21)	(1.21)
Daily Minimum Temperature (C°)			0.00505	0.00437
			(2.29)**	(1.96)*
Constant	-0.04617	-0.20954	-0.15056	
	(1.15)	(3.35)***	(2.36)**	
N	30,648	30,648	30,648	30,648
Clustering by Hour of Week	Yes	Yes	Yes	Yes
Month Controls		Yes	Yes	Yes
Hour of Week Fixed Effects (168)				Yes

Note: T-statistics are in parentheses, and reflect bootstrapping with a clustering option 200 times to avoid overdispersion. * p < 0.1; ** p < 0.05; *** p < 0.01

Poisson Regression of Crime Counts in the Safe Ride Region

Other controls, such as weather, do not dramatically impact the relationship between safe rides and crime counts, as shown by regressions 1-3. As the fixed effects are added in regression 4, they are shown to be critical, nearly doubling the estimate of the coefficient on open.

Cost Effectiveness

Shorthand calculations suggest that the safe ride program reduces 220 crimes each year, representing 0.6% of the crime in the City of Milwaukee. Using the well-known estimate from Levitt (2002), this suggests that +1.2% more officers will be needed to see an equal crime reduction in the city, representing a cost of $1.3 million dollars. Comparatively, the program only costs $425K. While the this simple calculation admittedly has not accounted for possible crime displacement, the necessity of police in general, and region-specific requirements to the program, it does suggest the program may be a cost-effective complement to the police force near campuses.

Extensions

Within the paper, I also explore numerous other extensions:

Zero inflated Poisson is considered and the estimates are found to be consistent.

Additional rides granted by the safe ride program are found to be associated with lower crime.

The program appears to be equally effective on the weekends as weekdays.

The program is found to have a consistent, crime reducing impact on both violent and nonviolent crime.

Conclusion

In this paper I examine a safe ride program operating in a major metropolitan area. Using fixed effect estimates in a Poisson regression, I find that an open safe ride program is associated with a reduction in the overall crime count of 14%. About half this impact becomes apparent only when recognizing the tendency of the policy makers to put the safe ride program into high crime hours and either using fixed effects, or dropping the hours in which the program never operates.

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