





# Crime prevention through environmental design

Changing the physical environment to prevent retail robbery.

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Effect scale	Quality of evidence				
	Effect Impact on crime	Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
 Some reduction	 Low	No information	 Low	 Low	No information

## Focus of the intervention

Crime prevention through environmental design (CPTED) refers to measures taken to reduce crime through the manipulation of the physical environment. CPTED outlines a set of principles designed to influence potential offenders' perceptions of the risk, effort and rewards of offending.

This review covers the application of CPTED to prevent commercial robberies in retail settings. These could be implemented with single or multiple components.

Single components included:

- implementing cash handling procedures
- adding a second clerk during night-time business hours
- hiring guards
- installing security hardware systems such as alarms, video cameras and CCTV

Multiple components generally packaged together low- or no-cost recommendations, such as:

- keeping a minimum amount of cash in the register
- maintaining good visibility and lighting inside and outside the business
- limiting access and escape routes
- training employees in how to respond to a robbery

The review also included measures mandated by ordinances – local by-laws common in US states – which require a combination of the measures outlined above.

This narrative is based on one systematic review covering 26 studies carried out in the USA.

## Effect – how effective is it?

Overall, evidence suggests that CPTED has no impact on crime, but some studies suggest a decrease in commercial robberies in retail settings. This finding requires careful consideration given the age of the reviewed studies and the low quality of supporting evidence.

The majority of studies reviewed experienced a percentage reduction in robberies, though two studies showed an increase in commercial robbery.

For these latter two, while the increases experienced were noteworthy (commercial robbery increased by 212.5% and 130%), these findings are not statistically reliable due to weak research design and no reporting of statistical significance.

Differences in the outcome measures used across the evaluations prevented the calculation of an overall effect size. However, an average reduction in robbery of 30% was observed across studies with a comparable area or time period (16 studies).

The review did not report the statistical significance of changes in robbery. Among studies examining the monetary loss per robbery, businesses with the intervention lost on average 9.5% less in US dollars than the control group.

## How strong is the evidence?

Although the review was systematic, many forms of bias that could influence the study conclusions remain.

These studies all took place before the year 2000 and were mainly assessed to be of poor design.

Only one randomised experimental study and one quasi-experimental study was available for inclusion in this review. While the quality of the quasi-experimental study was rated as rigorous, it was noted that the randomised experimental study did not fully control for biases in the selection process.

The quality of other studies was also limited by a combination of factors, including:

- the absence of suitable comparison groups
- the absence of pre- and post-comparison sites
- the use of crude or inappropriate outcome measures.

This means that the evidence of effect is weak.

## **Mechanism – how does it work?**

The review does not explain or test the mechanisms through which CPTED might reduce robbery.

## **Moderators – in which contexts does it work best?**

The review did not test for variations in the effectiveness of CPTED in different retail outlets, although it did distinguish between single- and multi-component programmes and ordinances.

Multi-component programmes appear to have been more effective, with all programmes experiencing reductions in robberies in relation to a comparison group and/or time period. These reductions ranged from 30% to 84%.

The findings of evaluations of single-component programmes and ordinances reveal mixed results. The effect of single-component programmes ranged from reductions in robberies of 83% to increases of 91%. The effect of ordinances ranged from reductions in robberies of 65% to increases of 130%.

The review noted that reductions in robbery were associated with employing a second clerk (two studies), installing security hardware systems (four studies), hiring guards (one study) and improving cash handling procedures (one study).

## Implementation – what can be said about implementing this initiative?

No details on implementation were provided, although the degree to which programmes followed the implementation plans was often low. Average compliance with implementation plans was less than 30% (six studies).

The review suggests that lower-cost CPTED changes tend to result in higher compliance, however this was not tested.

In three of the five studies evaluating the introduction of new equipment, the functioning of the equipment was not monitored.

Overall, the review highlights that implementation failure could have affected the results observed.

## Economic considerations – how much might it cost?

The review does not mention costs and benefits and no formal economic analysis is provided.

## General considerations

- The authors note that the evaluations included in the review varied in important ways, including the outcome measures used.
- Displacement of crime or diffusion of benefits to neighbouring areas or businesses was not reported, but should be considered a possibility.
- Compliance with the CPTED interventions was often low. When serious, this could have led to implementation failure, therefore undermining the true effect of the intervention.
- Cost information for CPTED is difficult to determine – as technologies change, costs can increase or decrease. Costs will also vary by location and the characteristics of business premises.
- This review has highlighted substantial gaps in the evidence base – specifically, the need for more robust studies using experimental or quasi-experimental designs, the need to directly test the underlying mechanisms and the need to explore variations in effectiveness by context.

## Summary

Overall, evidence suggests that CPTED has no impact on crime, but some studies suggest a decrease in commercial robberies in retail settings.

However, the evidence is old and low-quality. No information was provided on the effectiveness of CPTED as a means of reducing retail robbery in different kinds of premises.

## Reviews

### Review one

#### Reference

- Casteel, Carri and Peek-Asa, Corrine (2000) '[Effectiveness of Crime Prevention Through Environmental Design \(CPTED\) in Reducing Robberies](#)', American Journal of Preventive Medicine, 18:4S, 99-115?

## Summary prepared by

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