

Effectiveness of Closed-Circuit Television Cameras (CCTV) in the Deterrence and Prevention of Crimes

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Rationale

Violence in Israel is a major factor that negatively affects the sense of personal security among Israeli citizens and has a detrimental effect on their quality of life.

Preparations are underway in the Ministry of Public Security to establish a network of closed-circuit cameras (CCTV) in municipalities in which the “City without Violence” program operates.

The CCTV cameras will serve as a law enforcement and crime prevention tool for both the Israel Police and the local authorities, as an additional way to combat violence and anti-social behavior.

The study presented below is the first part of an extensive study to be held in local authorities in Israel.

What is CCTV?



“CCTV is a surveillance technique thought to prevent crime because of the deterrent effect on potential offenders, when they are aware that the cameras may be watching their activities. Cameras, located at predetermined points to ensure optimal coverage, collect images that are transferred to a monitoring station or are stored for subsequent analysis and review (Verga, 2010).”



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Goals of CCTV



Deterrence
and Crime
Prevention

Increase the
Sense of
Security

Improve the
Ability to
Analyze and
Decipher
Crime

Monitor and
Regulate
Law
Enforcement
Resources

Verga, S. (2010). "Closed-Circuit TV Surveillance Evaluation: Statistical Analysis of the Effects on Rates of Crime," *Defense Research and Development Canada*.



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Research Goals

Examine the
efficiency of
existing
cameras

Create a tool
to help
determine the
location of
future
cameras



Research Question

Are the cameras effective in preventing and reducing crime and quality-of-life offenses in the tested local authorities?

Literature Review



A review of the literature paints a mixed picture of the effectiveness of CCTV in reducing crime.

- § Most cases presented in the review found that the CCTV system's effectiveness depends on the **location** and **type of crime**.
- § A consistent drop in crime was observed mainly in types of crime that imply **intent** and **premeditation**, such as **property offenses** and **disorderly conduct**, and where the implementation of the CCTV system was **in addition** to other interventions.
- § Most studies did not observe a decrease in **violent crimes**.

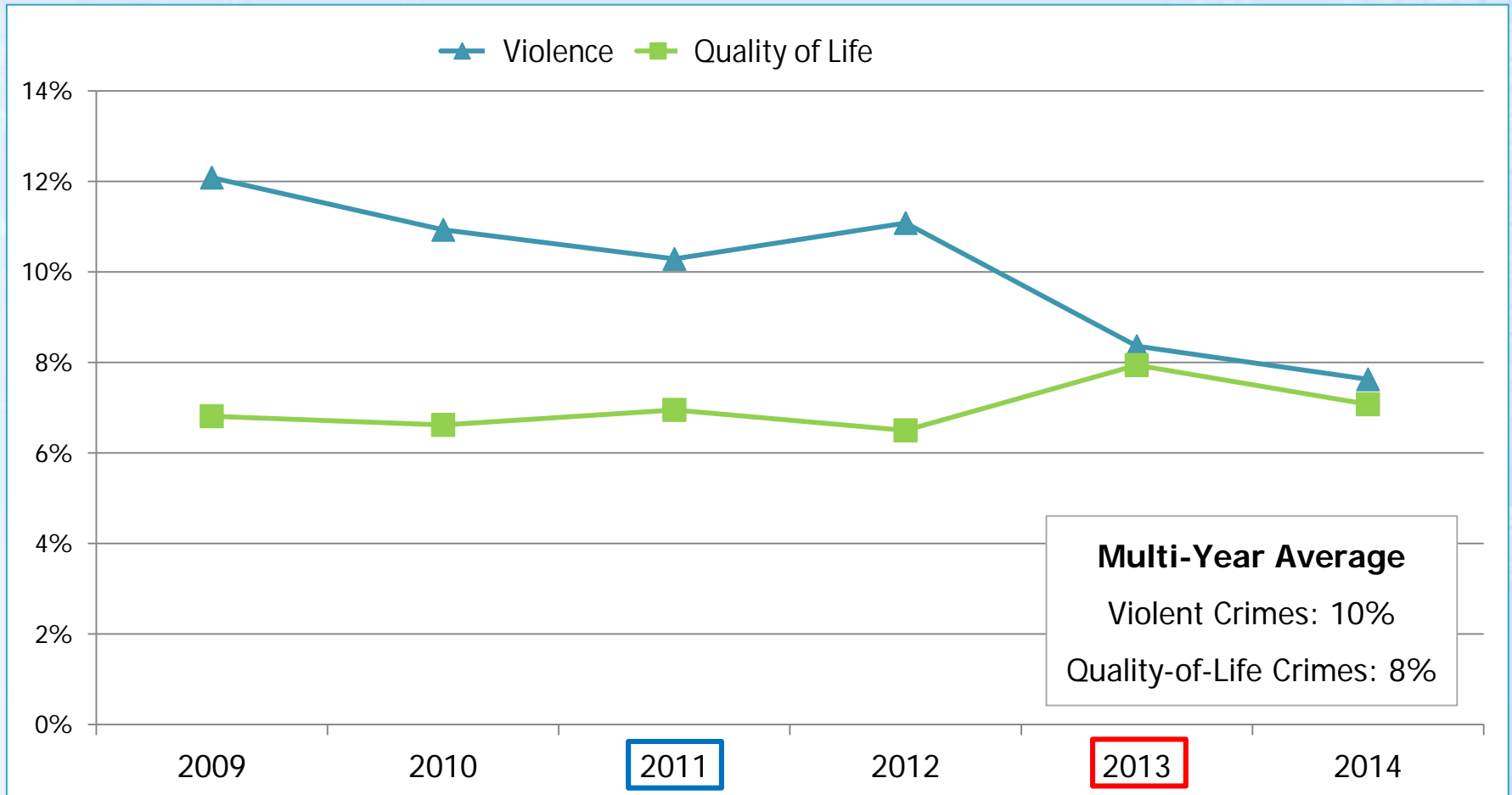


Methodology





Percentage of events that fell within actual camera viewing range



The **BLUE** box indicates the year the municipality joined the Municipal Policing program.

The **RED** box indicates the year CCTV cameras were installed.



Initial Findings

Initial analysis of the data from a number of local authorities indicates that the number of events occurring within the viewing range of the camera is **small**, and that these events, on average, make up a tiny percentage of the total events occurring in the local authority.

Additionally, the data indicates that the current positioning of the cameras is not optimal, and that there are "hot spots" that are not within range of any camera.

Initial Conclusions

The initial conclusions paint a mixed picture of the effectiveness of CCTV cameras.

- Ø The majority of events that take place in the municipality are not within the camera's range.
- Ø This study can aid in planning the positions of future cameras and using them to their full potential in areas with high crime rates and hot spots.

Limitations of the Study

A limited,
experimental
study

Difficulty
proving the
effectiveness of
the cameras

Future Directions

Evaluation of sense
of security among
local population

Surveys
among
residents

Incorporating
of data from
municipal
hotline

Incorporating event data
from municipal hotline
into database

Utilizing research tools
to examine the cameras'
effect on specific
locations with potential
for property crimes

Examination
of cameras'
effect on
planned
crime



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Thank you





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Camera Locations

Beer Sheba as case study



225 cameras
77 locations



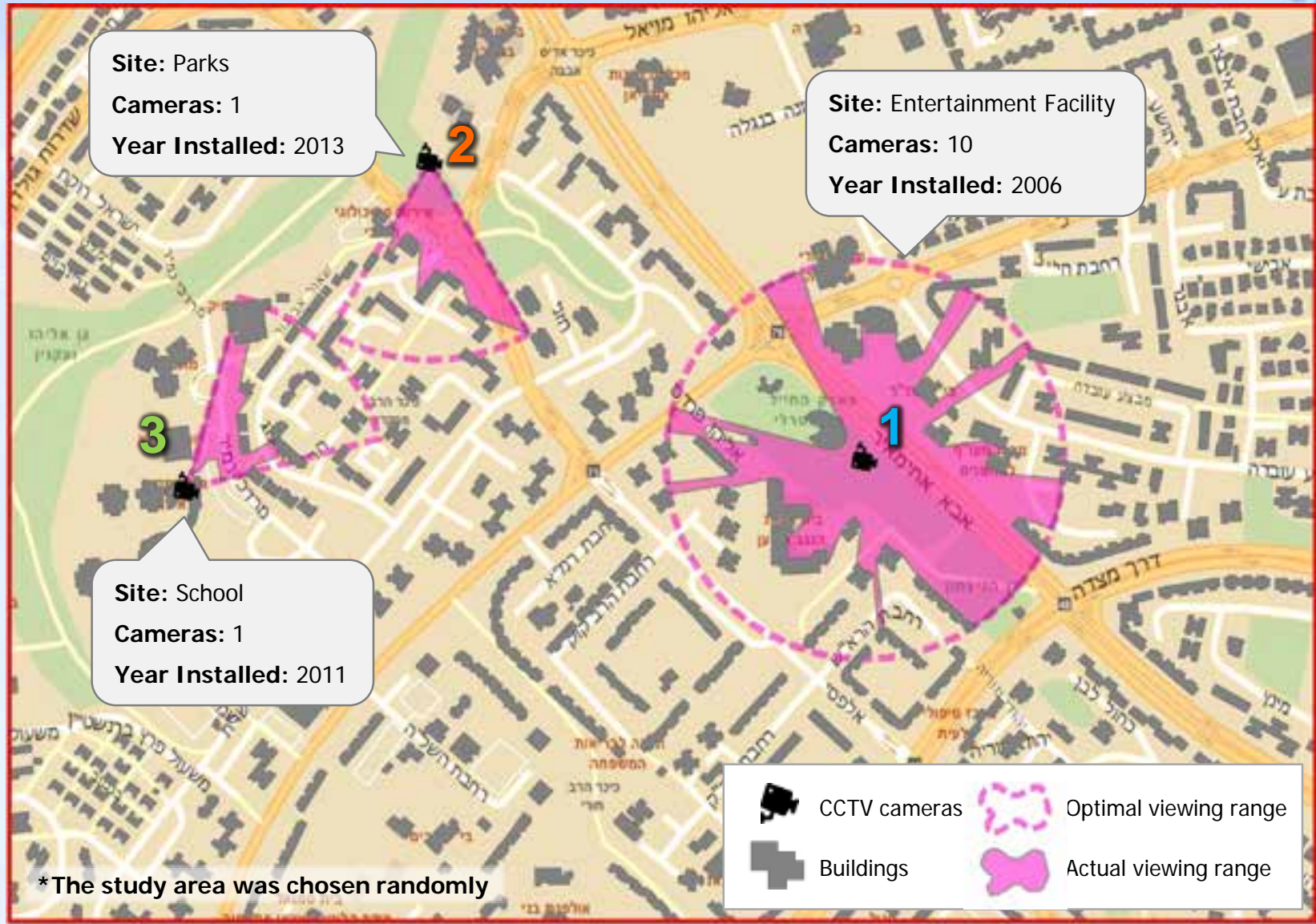
Installation Year	
2006	●
2010	●
2011	●
2012	●
2013	●





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Defining viewing range for each camera



Camera simulation in 3D

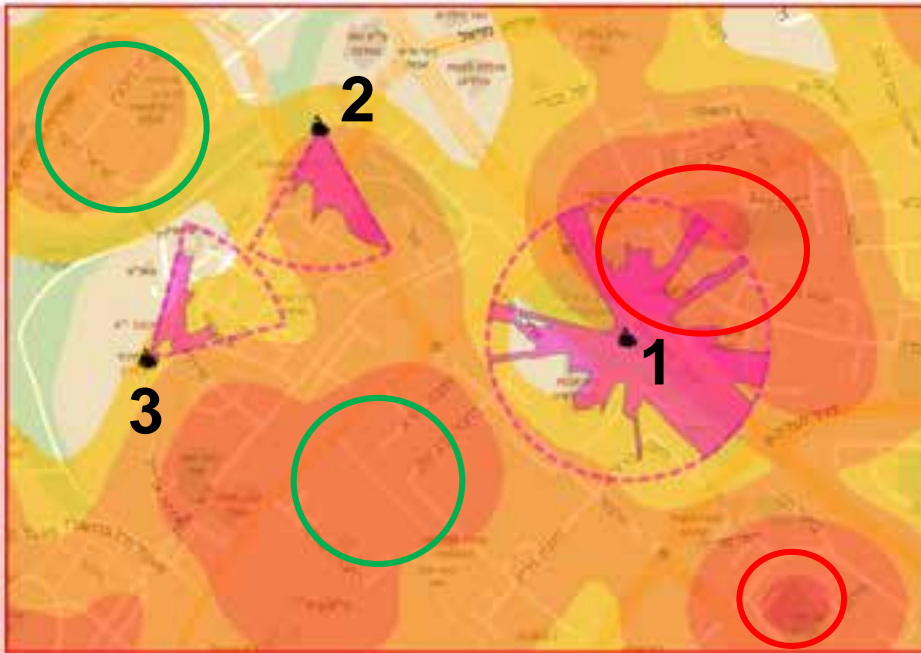


Hot Spot Map Quality-of-life offenses



3rd quarter, 2014

2nd quarter, 2014



There is a change in the dispersion of events between the second and third quarters of 2014.
In both quarters, the camera locations do not optimally cover the hot spots.



*The study area was chosen randomly



Violent Crimes

Molestation	Trespassing	Distress
Threat or attack on public official	Firecrackers	Mentally ill/dangerous/drug addict
Calls for help	Restriction of movement	Suspicious person
Brawl	Disorderly conduct	Suspicious person in automobile
Illegal parking	Animal abuse	Threats
Reckless driving	Abuse of defenseless people	Burglary
Abandoned/burned vehicles	Illegal protest or march	Vandalism
Drunkenness	Mugging	Stabbing
Possession of weapons	Blocking cross walk	Possession of knife
Assault	Suspected of burglary	Harassment
Attack on officer, officer in distress	Danger to life	Sexual harassment



Quality of Life Crimes

Prowling/violent animal

Making noise indoors

Making noise in public spaces

Making noise in a place of business

Disturbing during rest time

Noise disturbance

Littering

