

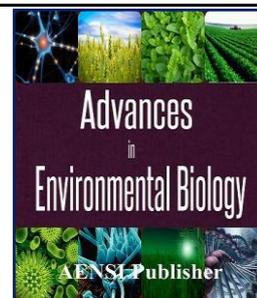


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A Study on The Effectiveness of Closed-Circuit Television (Cctv) Camera's Installation At High Rise Office Buildings Case Study: Perak State, Malaysia

Mohamad Ridzuan bin Yahya and Siti Salmiah binti Aziz

Department of Building Surveying, Faculty of Architecture, Planning and Surveying, University Technology MARA (Perak), Malaysia

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ABSTRACT

Closed-circuit television cameras (CCTV) are being used and known for a decade as a surveillance system in the building and public space. According to the previous researches, there are many crime cases in the building were not considered to CCTV installation and safety awareness of building occupants. Nowadays, it is enforced by the Royal Malaysian Police (PDRM) to the fulfillment installing CCTV in order to encounter the criminality in the public areas and building that classified as risky. The objectives are to identify the perception of building maintenance personnel towards the performance of CCTV and to analyse the significance of CCTV installation towards the building maintenance management and risk management. Four (4) high rise office buildings in Perak, Malaysia have been selected by distributing fifty-two (52) questionnaire surveys and also carried out structured interviews to the building maintenance personnel. It was found that, most of the respondents agree that safety awareness and closely monitoring by CCTV are a very significant tool to overcome the crimes activities around the building and it also related as well as significant towards the effectiveness of the building maintenance management and risk management in high rise office buildings. As a conclusion, CCTV installation is the part of the surveillance system in implementing a good risk management and building maintenance management in the future.

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INTRODUCTION

Many researches that have been conducted show that closed-circuit television (CCTV) cameras is ineffective in reducing crime, but most all of the organization either government and private used this surveillance system in their building. According to recent statistics by Bryan Low (2014) he said that in an article of a trusted sources showed that the CCTV can reduce the crimes in the areas covered up to 95%. Its supports by the Internal Security Ministry (2004), the installation of the CCTV had shown its effectiveness when the crimes in Kuala Lumpur had dropped to 50% in catch the thefts with an overall country drop to 26.2% of the crime [10].

Hence, this paper will cover and study the effectiveness of the CCTV and establish their ability in reducing crime in high rise office building in Perak, Malaysia. Besides that, it will contribute the effectiveness of CCTV based on the better risk management and building maintenance management of the CCTV.

1.0 Overview:

2.1 Problem statement:

Even the used of closed-circuit television (CCTV) camera had generally known as a vital part of security, but many people or parties still conflicts about the resulted of their effectiveness. Moreover, Justice Analytical Services (2009) described much judgement was creating that response on the effectiveness of CCTV and the sequential dissemination was over the country which not fixed on persuasive and righteous.

According to Ratcliffe and Taniguchi (2008), the introduction of CCTV resulted in a range of effects on the cover crime sites. Wells et al (2006) added that the measures of crime prevention are still questionable whether it is effective or not. Besides that, CCTV has no trace on preventing the rough criminality and broadly ultimate effective in preventing deeds of premises and transport crime.

Corresponding Author: Mohamad Ridzuan bin Yahya, Department of Building Surveying, Faculty of Architecture, Planning and Surveying, University Technology MARA (Perak), Malaysia
E-mail: moham643@gmail.com

As much research had been done and left doubt, there are also many researches that show and proved that CCTV is effective in their ability to reduce crime. Furthermore, our past Prime Minister, Datuk Seri Ahmad Badawi enforced the fulfillment of three primary advances to encounter the criminality and ordered the Royal Malaysian Police (PDRM) along with requisite installation of closed-circuit television (CCTV) cameras in the public areas and building that classified as risky.

Besides that, a report by Malaysiakini [9], the CCTV that installed in the office premises show and record the disgruntled mob attacks used car dealer. In this case, it is shown that CCTV is effectiveness in their ability to record the incident and give evidence that can help solving crime in the office.

2.2 Literature review:

2.2.1 Definition of closed-circuit television (CCTV) camera:

Community Health & Safety Unit [1] stated that closed-circuit television (CCTV) cameras are generally known as security cameras and Goold (2004) added that, it is video camera monitoring the system as a ways of the surveillance.

Meanwhile, according to the Newburn (2007), CCTV is a means of circumstances criminality deterrent and the approach to reduce the crime. On the other hand, Wireless Technology (2010) stated that the closed-circuit television (CCTV) cameras is a phrase that specify to transmit video from surveillance systems to specified areas that the monitors can be seen in restricted numbers. Desman (2003) stated that “*this system are referred to electronic monitoring system that used as video cameras connected by closed circuit to collect, capture, record and relay visual information of the event-status in the space over the time*”.

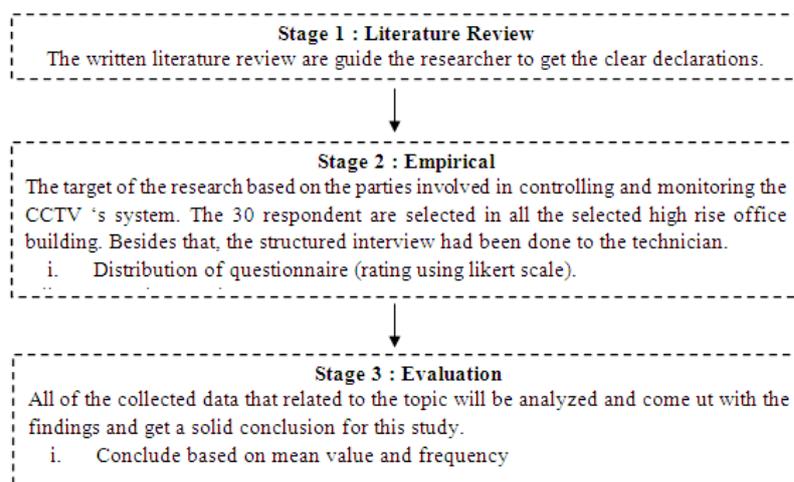
2.2.2 Risk management guidelines of the CCTV(2010):

All systems that had captured any images of an individual (including the employees) except the Data Controller are subject to the Act and they had their own right to view their images. The owner should identify the person to take responsibility for the system and set up the its purposes and rationale. Other surveillance devices such as audio systems and 35 surveillance cameras are counted. The placement of the CCTV should not allowed to view places that are not covered by the purposes of installation but if there are any possibilities to captured any scenes, the user should discussed with the neighbours. The CCTV operator(s) must be instructed to apply the system only inline with the stated purpose and, if necessary, adequately trained in privacy policy. The sign of warn should be erected to inform the public that they are entering the CCTV surveillance zoom. There are stringent conditions covering the use of covert cameras (i.e. cameras used without signage) which must not be used unless there is specific criminal activity to be detected and then only for as long as is necessary to capture the relevant evidence.

The equipment must function well and checked out for correct operation by proper maintained, operate in the suitable condition (sufficient lighting). The unnecessary recording should be disposed after the acceptable time and the delay recordings must be subjected to access control and should be secured by unauthorized disclosure. Besides that, the proper record must be kept for any recording that had been viewed or disclosed and only the hired staff should operate and view the images captured.

Methodology:

The distribution of the research methods is implemented through 3 stages based on:-



3.1 Case study:

There are four (4) high rise office building that's been chosen for this study that located in the Perak, Malaysia. All of the selected case study building is used pant, tilt and zoom (PTZ) and fixed camera.

Table 1.0: Four (4) high rise office building as case study building

<p>Tabung Haji Building</p>  <p>(Sources: site visit, 2015)</p> <p>Tabung Haji building was located at Jalan Koo Chong Kong, Ipoh. It is established on 13 November 2000 and consists of 11 storey height.</p>	<p>KWSP Building</p>  <p>(Source: site visit, 2015)</p> <p>Kumpulan Wang Simpanan Pekerja (KWSP) building was located at Jalan Greentown, Ipoh.</p>
<p>PTTC Building</p>  <p>(Sources: site visit, 2015)</p> <p>Perak Techno Trade Centre (PTTC) building is located at Bandar Meru Raya, Jelapang. It was built on 1998 and consists of 20 storey heights.</p>	<p>MBI Building</p>  <p>(Sources: site visit, 2015)</p> <p>Majlis Bandaraya Ipoh (MBI) building is located at Jalan Sultan Abdul Jalil, Greentown. It was built in 1981 and where manages and maintain by the Department of Work and Building.</p>

Results:

4.1 Perception Toward Performance of CCTV's System In High Rise Office Building:

PERCEPTION TOWARD PERFORMANCE OF CCTV'S SYSTEM IN HIGH RISE OFFICE BUILDING

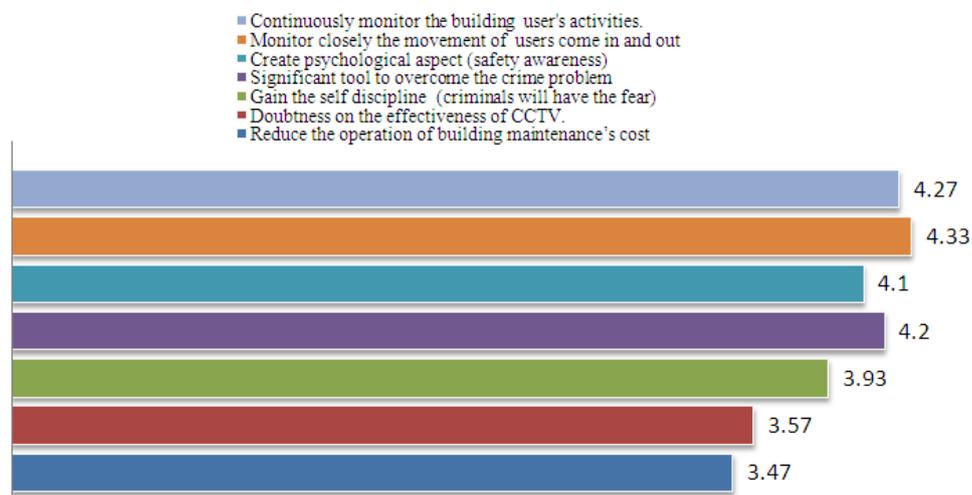


Chart. 1.0: Mean Score of the perception toward performance of CCTV's system

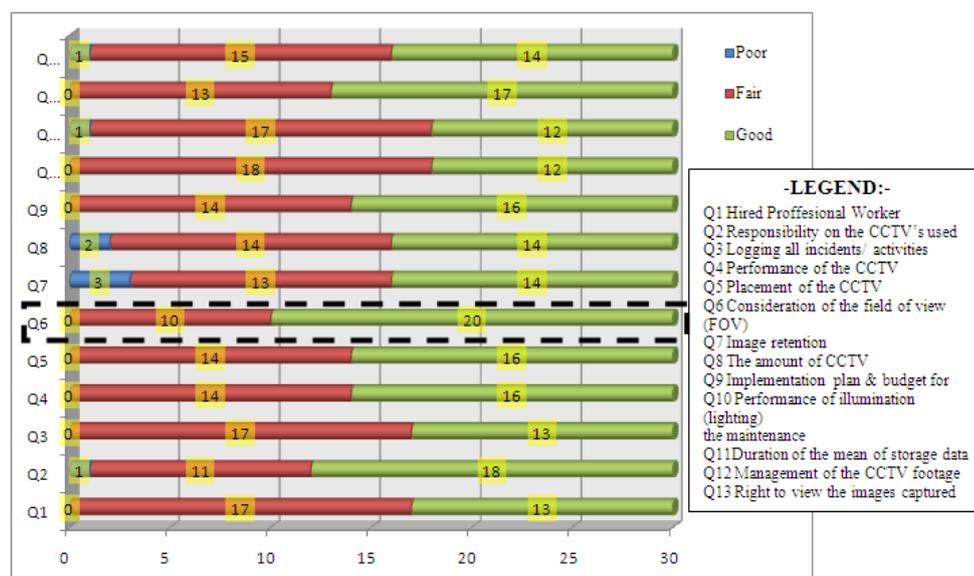
Table 2.0: Frequency and mean score of the CCTV's performance

No.	Items	Likert scale					Mean
		Disagreed	Little Agreed	Neutral	Agreed	Extremely Agreed	
i.	CCTV can continuously monitor the activities of building occupants or user.	-	1	3	13	13	4.27
ii.	CCTV can monitor closely the movement of users, walk in users or regular customers coming in and out of the building	-	-	3	14	13	4.33
iii.	CCTV can create the psychological aspect in term of safety awareness in the buildings.	-	-	7	13	10	4.10
iv.	CCTV is a significant tool to overcome/solve the crime problem in the buildings	-	-	4	16	10	4.20
v.	CCTV camera can gain the self discipline which they (criminals) will have fear when there are cameras monitored the place.	-	1	6	17	6	3.93
vi.	Staff still has doubts on the effectiveness of CCTV	2	2	10	9	7	3.57
vii.	CCTV can reduce the operation of building maintenance's cost for hiring the security guards compared to before installing this system.	3	1	10	11	5	3.47

The highest mean is number (ii) which is CCTV can monitor closely the movement of users, walk in users or regular customers coming in and out of the building. The highest selected answer is agreed by 14 people, following by extremely agreed of 13 people and the lowest is 3 people filling neutral. None of them are filling disagreed and little agreed. The second highest mean is number (i) which is CCTV can continuously monitor the activities of building occupants or user. 13 people from the respondents are filling extremely agreed, following agreed by 13 peoples, 3 peoples neutral, the last is less agreed by 1 people and none of the respondent filling the disagreed.

The second lowest mean is number (vi), the staff still has doubts on the effectiveness of CCTV even the system had been installed in the buildings. Most of the respondents are neutral by 10 peoples, following by agreeing who are 9 peoples and the last is 2 people are little agreed and disagreed. The last lowest mean rate is number (vii) which is the CCTV can reduce the operation of building maintenance's cost for hiring the security guards compared to before installing this system. The highest selected answer is agreed by 11 people, following by neutral which is 10 people, 5 people extremely agreed, 3 people disagreed and the last 1 people little agreed.

4.2 The management of CCTV's system in high rise office building:

**Chart 2.0:** The frequency of the CCTV's management in high rise office building

The highest rank is Q6, the field of view (FOV) of the CCTV in the high rise office building. Most of the respondents filling good by 20 people and followed fair by 10 people. The FOV of the CCTV in the selected high rise office buildings is focused in the risky area and then at each level of the buildings. They are also considering the use of suitable cameras based on the location and field of view to make sure that the image captured is high quality, clear and precise.

The second highest rank is Q2, the person/ staff that responsible in monitoring and controlling CCTV is good and always maintain while do their work well. Most of the respondents are filling good as higher rated, following fair by 11 people and poor by 1 people. The staffs were maintained the CCTV system based on the schedule provided by the management to make sure that this surveillance system worked well in capturing images and recorded footage.

The third higher rank is Q12, the CCTV footage that had been recorded was protected and safe if it is needed to be used for the purposed of any investigation. Most of the respondents are filling good by 17 people and fair by 13 people for this management of CCTV footage. Most of the high rise office building is recording the data needed for future purposes such as police investigation of crime and for the management itself. The data was protected and safe as the control room is private and confidential. Besides that, only the security guard and technician can access the room.

The lower rank is Q13, the right to view their own self is mostly fair by 15 people, followed closely by good by 14 people and 1 of the respondent filling poor. The permission to review the footage is by term and condition such as he/she should clearly verify their appearance on the camera.

Then Q11, the means of storage data that's collected data are stored for a specific and relevant time based on the image retention. Most of the respondents are filling fair by 17 people, followed good 12 people and poor by 1 people. The stored data of the high rise office buildings used "first in, first out" which is the first data recorded will automatically disposable and then record the new data. Furthermore, the management just only recording the data that needed to be stored such as thing stolen.

Lastly, Q8 the amounts of CCTV that had been installed in the building are enough to cover each area in the buildings. Most of the respondents are filling good and fair by 14 people and followed poor by 2 people. Some of the high rise office buildings had installed enough of this surveillance tool, but some just installed it only on the risky area such as the main entrance and lobby (MBI).

Concluding Remarks:

In the nutshells, after analyzing all the data collected of the building maintenance personnel's perception toward the performance of CCTV's system at the case study, it is can be concluded that most of the respondents are agreed that the safety awareness and the ability of CCTV in closely and continuously monitor the building user's activities is a very significant tool to overcome the criminal activities around the building. It also related as well as significant towards the effectiveness of the building maintenance management and risk management in high rise office buildings. As a conclusion, CCTV installation is the part of the surveillance system in implementing a good risk management and building maintenance management in the future.

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