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# Impact of CCTV Surveillance on Crime Prevention: A Study in Dhaka City

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## Abstract

This research intends to investigate the impact of CCTV surveillance on crime prevention in Bangladesh. Dhaka, the capital city of Bangladesh was selected as the research area in this regard. Four police stations from a total of forty-nine police stations located in different parts of Dhaka city were selected purposively for the study. Interviewing to the general people and a semi-structured interviewing to the police personnel in the jurisdiction of selected police stations were used for data collection. The data for the present paper were collected in the period of February to June 2018 from the study area. This study reveals that the police authority selects their locations for the installation of CCTV as per their own priority determination. Most of the respondents of the current study consider that CCTV has a moderate impact on reducing crime. They also consider that it can reduce the fear of crime among the commoners and provide them a sense of safeness. The opinion survey also reveals that CCTV may displace the crimes from one place to another and thus may make one place safer and another place vulnerable at the same time. Different crimes are influenced differently due to the installation of CCTV. However, CCTV has a great role in the detection and prevention of crime, although it needs to address some privacy issues. Proper installation and maintenance of CCTV are still at the initial stage in Bangladesh. It is recommended that the existing installation and maintenance of the system should be replaced with a properly audited demand for CCTV operations. Additionally, a wireless networking mechanism incorporating advanced options like facial recognition and artificial intelligence needs to develop.

## Keywords

CCTV, Surveillance, Reduction of Crimes, Displacement, Fear of Crime, Police Stations

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## 1. Introduction

Since the very beginning of human civilization, people have considered their security as a very precious priority. Crimes have always appeared thus as a practical threat for the people from the dawn of their appearance. Therefore, the need for a surveillance process has been one of their major concerns always. With the advent of time, people have achieved their skills in science and technology and like all other aspects of life, managed the use of technology in the surveillance also [1]. In the context of a present completely complex society, it is very difficult for law enforcement agencies to maintain their surveillance on a whole community other than having a technological advantage. CCTV along with other security tools (like an intrusion or fire alarm, and access control) therefore, is being used widely by them to increase the efficiency in time management and broaden the coverage of the surveillance [2, 3]. It is generally considered as a form of situational crime prevention according to the explanation of

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Tonry and Farrington (1995) [4]. People at the earlier stage used CCTV to prevent shoplifting although the number of reduction was not counted systematically then. However, it was then revealed that CCTV worked very well as a means of a great psychological deterrent to crime [3]. The security issue nowadays is quite challenging. Although the whole area of policing and security management has encountered changes rapidly during the past years, the social implications, the law and principles, and the operational issues in many cases have failed to maintain coherence with such technological development. For such technological inclusion, a civilian oversight, and independent monitoring seem quite vital. However, presently, not only CCTV has appeared as very important to the people, but also it has boosted the performance of the police in the arena of law enforcement.

Some recent incidents of Bangladesh like arresting the offenders based on CCTV footage, arresting offenders who were involved in ATM fraud, etc. have made a prospect to study the impact of CCTV in crime prevention and investigation. Therefore, it is very urgent in the present context of Bangladesh to conduct a comprehensive study for understanding to what extent CCTV plays a role in fighting crime. In this context, this study intends to find out how far this country has adopted the CCTV surveillance in its capital city within the metropolitan police system. This study also wants to understand whether the police are capable of preventing crime in the city area by creating a significant deterrence with their CCTV system. Interviewing the common masses and the police personnel was adopted as the key technique for the collection of data in different aspects. Thus, the researchers have tried to understand the present condition of CCTV surveillance in Dhaka city to recommend some strategic changes thereto to address the problems of surveillance. Other than conducting intensive researches on this aspect, running such expensive installations can become a white elephant. Therefore, this study is an effort to minimize the research gap in the existing scientific literature.

# 2. Review of Literature

The use of technology in policing cannot be underestimated or overestimated in the present context [5]. Technology has allowed us to take benefit from it, make life quite easier and comfortable. Whether the use of CCTV surveillance helps in crime prevention is a broadly studied issue worldwide although the use of this technique as an investigative tool is subject to further inquiry [6]. All the public locations including highways, shopping centers and other locations in different nations are now under the coverage of CC cameras [7]. Therefore, from household security to the aviation sector, CCTV is one of the most popularly used security measures nowadays [8]. CCTV monitoring and recording help people to feel safer even though rigorous monitoring and assessment are required for reaching the exact conclusion in this regard [9]. However, CCTV has different dimensions in giving people benefits, especially in security aspects. The relevant discussion based on the previous studies about this aspects goes as the following.

## 2.1. The Value of CCTV as an Investigative Tool

Quality recording by using CC cameras may provide investigators a solid base to understand the consecutive steps of the perpetrator, the means of crime commission and the entry-exit ways of the stakeholders [6]. It is, therefore, a good way to understand the basic nature of crimes and offenders. Some sorts of policy determination or strategic formulation for addressing different crimes in different zones are thus possible in this way. There are some problems in using CCTV footage as evidence in many cases but these are good sources to investigate the actual incidents and reconstruct the crime scene to direct it for the legal procedure [1].

## 2.2. Crime Prevention as a Preferred Issue

Crime prevention has become a preferential sector for law enforcement professionals mostly, since the terrorist incidents of September 11, 2001 [10]. Crime prevention using CC cameras thus has become much popular all around the world. It helps to have continuous surveillance over a key point or important settlements. However, some studies also claim that CCTV has less impact on crimes like terrorism as this particular crime has many critical points to understand [11]. This is thus obvious that CCTV has a different impact on different crimes and in different locations. CCTV in the eyesight may aid people to be cautious about their activities, which is a crime prevention technique. Apprehending the criminal is less priority to the criminal justice professionals, rather the prevention of crimes is cost-effective and important.

## 2.3. Policy Dilemma

During the last few years, violation of individual privacy was a matter of serious debate among the commoners as presupposing the necessity of establishing legal boundaries [12]. Some basic issues, therefore, appeared from the very beginning of the new millennium in terms of CCTV's acceptance within the legal sphere as evidence, the operation of the devices and the public's reaction towards the usage of it [13].

In many countries like the UK, CC cameras were considered a serious threat to individual privacy. For example- evidence suggests that the English go on with

the filming of 300 times of their 4.2 million CC camera per day [7]. This can seriously hamper their free-roaming over the city where due to such intervention, people need to be much aware of their way of movement. It is to be noted that from the very outset, the rules and regulations relating to the CCTV installation and operations were subject to the governments' policy process [14]. Irrespective of this, some researchers also have focused on the necessity of having intensive attention over the privacy issue of recorded images of police [15]. However, the Close Circuit Television (CCTV) and Automatic Number Plate Retrieval (ANPR) are two widely used technology in getting the perpetrators' identity and moves (ibid.). Installation of such a device is accepted where crime incidents generally happen. Installation of CCTV in areas such as bus or train stations, main highways and other establishments where a high number of people generally pass by is highly accepted [16]. Some researches also advocate for ensuring the privacy of individuals regarding the CCTV footage [17]. It is expected that the data which are collected regarding the physical identification of individual should be protected respecting the private life of the people [18]

## 2.4. Deterrent Impact of CCTV Surveillance

CCTV assumes the reduction of crimes by exposing the risk of detection and legal action against the identified offenders, that is its perceived impact on the offenders' apprehension [19]. CCTV surveillance in many cases does not stand on the basis of a good theoretical understanding of the buffer diameters. Still, the camera has its limitation in its robust view in distant locations; Irrespective of camera's visible area, people are likely to be considerate about their activities if the cameras are placed at a certain distance of visible positioning [20]. Another study conducted in Cincinnati and Ohio of the USA measuring 34 camera locations found insignificant impact in the reduction of crimes in distinct times, though sometimes the crimes in residential areas were found to be reduced because of CCTV installation while associated with other conditions, like an area-based rate of crimes [21].

The situational crime prevention approach recommends that environmental design such as street lighting directly influences the offender's perceived risk of being recognized [1]. CCTV also can work as key equipment for such environmental designing. Sometimes some biometric characteristics of humans are used combining with CCTV, where the unique characters of human organs may aid to identify criminals quite easily [22]. Thus, combining the CCTV with other detection process and the exposure of the success in criminal apprehension may put a deterrent impact on the potential offenders.

## 2.5. Where It Works, Where Does Not

In Criminology, many tools and instruments work to control crimes effectively among which situational crime prevention is found to be very effective [23]. Different researches found different findings on the effectiveness of CCTV in different structures. Research claims that CCTV is more effective in reducing vehicle crimes but not in other types of crime and the efficiency increases when this installation is combined with other situational crime prevention techniques like improved lighting, wide coverage of the device, etc. [24]. Another research also revealed that CCTV can decrease crimes in car parks significantly but in other areas, it decreases crimes at an insignificant level [25]. According to this study, surveillance in private space by such techniques, i.e. - use of camera or microphone is less acceptable because of the low vulnerability of those places to crime commission. However, situational crime prevention techniques like lighting and motion detectors are acceptable in the private spheres (ibid.). Literature review thus reveals that CCTV does not work evenly in all places. Its efficiency depends on its visibility, placement and viewing ranges.

## 2.6. Public-Police Interaction

Sometimes cameras worn on the uniform of police or used on flying drones may have a significant impact on police-public interaction [15]. Many police officers use cameras in their uniforms to record their interactions with people. It can thus work as a guardian of that conversation where the police show a tendency to behave very politely with the service seekers. This kind of camera use can improve the police-community relationship, especially in countries like Bangladesh where police suffer from serious forms of image crises.

## 2.7. Surveillance Technology and Organizational Dimension

Different organizations are now depending on different monitoring and surveillance procedure to keep records of their employees and other stakeholders. Research, for instance, underwent the use of CCTV in a school of UK criticizes the way it facilitated the social control to the students by direct observation because in a parallel way it cannot foster self-control among the students [26]. Another research found that if the CCTV allows complex technological auxiliary facilities, it not only augments but also plays a negative role in the targeted objectives by focusing on other less important objects [27]. Some researchers are very much cautious about some nano-technology based surveillance device like tags, sensors, radiofrequency, etc. holding the argument that these are the "Panopticon" of this age (they used the term as the metaphor)

[28]. The use of electronic surveillance in the workplace at present has drawn the attention of the researchers. This has generated controversy on the issue of employee dignity, ethics, public policy, and management level attitude [29].

Surveillance is not necessarily done only with the help of CCTV. The employees in many organizations undergo many other monitoring processes. Many companies tend to think that having a close eye on the computer-mediated communication of their employees is not the violation of privacy [30]. This violation of privacy is not only a matter of institution but also many organizations of the western countries are alleged to collect a lot of information from their citizens in the name of security which is a matter of great concern for them [31]. Thus, institutional and organizational breach of privacy is very commonplace now. For the organizations' own security and for the stakeholders whom they are supposed to provide services, they need to maintain the surveillance. In countries like Bangladesh, seemingly very few of the people care for their privacy in terms of CCTV surveillance, specially in public-places. It is however, very common that a disclaimer is hanging in places with such surveillance "CCTV is in operation". In this way, Bangladesh is trying to warn the people whom they are observing with CCTV.

### 2.8. Additional Features

The use of some additional features and devices like microphones and loudspeakers together with CCTV and other technological instruments may enhance the probability of controlling crime in a significant way [32]. For instance, in Istanbul, an integrated electronic system has been introduced, which is named as Mobile electronic system integration (MOBESE). Enhancing the surveillance capacity, prevention of disorder and crimes through deterrent are the key objectives of this MOBESE like CCTV system. It helps to reduce the fear of crime also [33]. Environmental criminology generally focuses on the prevention of crime by understanding the nature of the crime and the locational details [34]. CCTV however, can work as a key component for this crime prevention.

Some programs are also used in the detection of crimes. This type of software is capable of predicting how a particular person would look like based on time progression or and in different attire [35]. High-quality CCTV images can help the police personnel to get images for such analysis.

## 3. Research Objectives and Research Questions

The main objective of this research is to understand the impact and deterrence that are made by CCTV surveillance in different intersections of Dhaka city to understand the change in crime before and after the installation of CC cameras. However, the present study has some specific objectives also. These are-

i. To investigate the considerations behind CCTV installation by the police in Dhaka city.

ii. To examine the impact of CCTV installation on the behavior of offenders.

iii. To inspect the nature of crime-displacement due to the installation of CCTV.

iv. To determine the changing patterns of crimes before and after the implementation of CCTV surveillance process.

## 4. Method and Materials

The study was conducted in different locations of Dhaka city where police installed CCTV for their surveillance. Four police stations from the Dhaka Metropolitan area were selected for the purpose. The study included 200 respondents who had their prior knowledge about the usage of CCTV in a particular area and agreed to answer the questionnaire voluntarily. From the jurisdiction of each police station, Fifty (50) respondents were selected purposively. Additionally, 40 police personnel (10 from each police station) were interviewed with a semi-structured questionnaire. They were also selected based on their availability in a judgmental way. Most of them were field level executives who had their direct experience with the apprehension of offenders and criminal dealings. The sampling unit here was individuals having knowledge about the actions of police about CCTV installation (Tables 1 and 2).

The summary of the research methodology, however, is as the following.

**Table 1.** Summary of Research Methodology.

| | |
|---|---|
| Research philosophy | Positivist |
| Research approaches | Inductive |
| Method of data collection | Survey questionnaire and Semi structured questionnaire |
| Time horizon | Cross-sectional |
| Sample selection & sample size | Convenience sampling method<br>Sample size: 200 respondents from 4 police station area and 40 police officers from 4 police stations (10 from each) |
| Data types Sources of data | Primary: Interviewing respondents (survey questionnaire and semi-structured questionnaire)<br>Secondary: Books, journal, publication, newspaper etc. |

**Table 2.** Number of Respondents from Each Police Station (Jurisdiction/ Zone/Area).

| Area/ Name of the Police Stations | Geographic Coordinate (Longitude, Latitude) | Number of General People as Respondent | Number of Police Personnel as Respondent |
|---|---|---|---|
| Dhanmondi Police Station Area | 90.381512, 23.743268 | 50 | 10 |
| Ramna Police Station Area | 90.404599, 23.745646 | 50 | 10 |
| Kotwali Police Station Area | 90.409291, 23.707326 | 50 | 10 |
| Uttara East Police Station Area | 90.432665, 23.870914 | 50 | 10 |

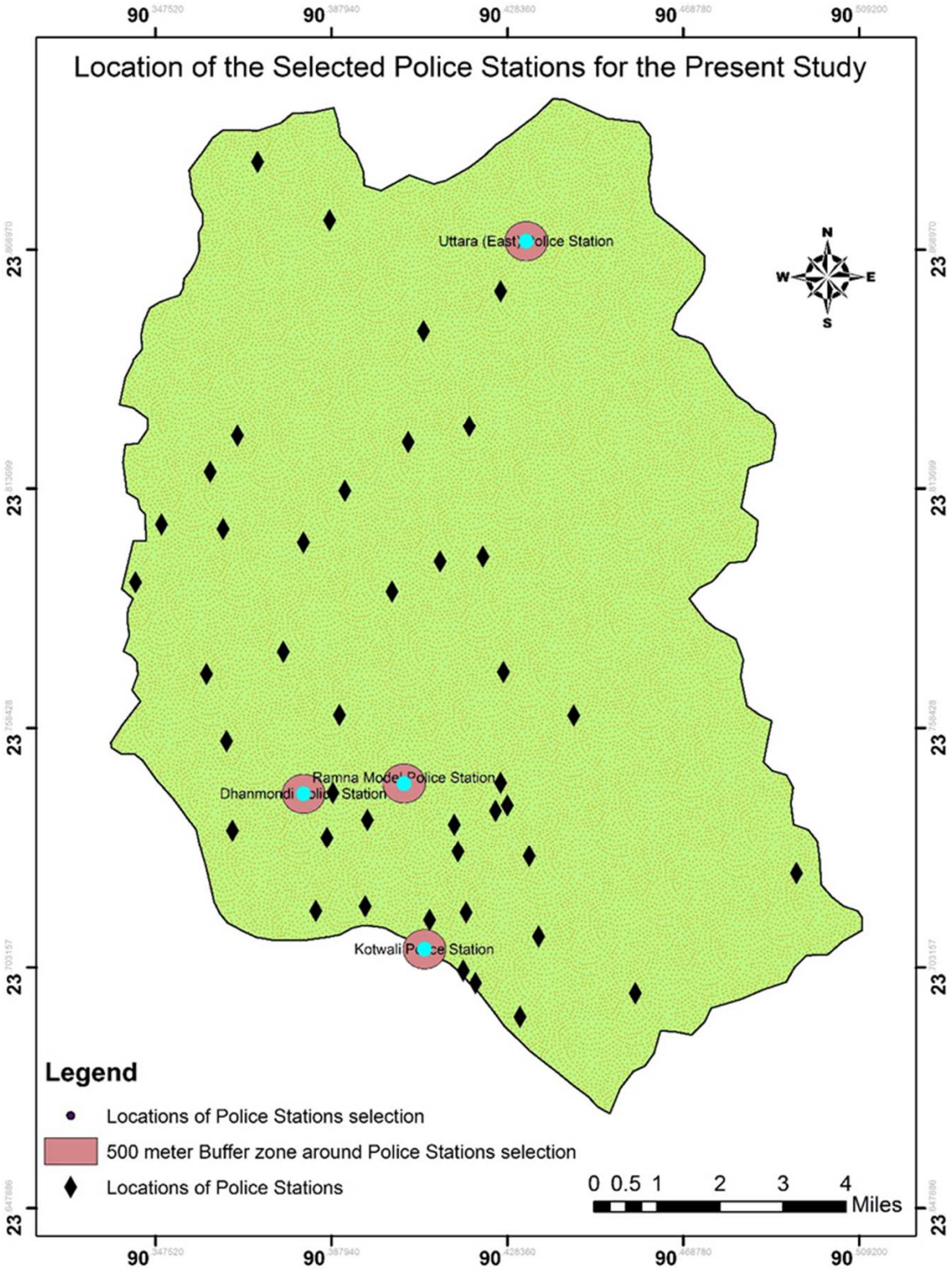


**Figure 1.** Location of Selected Police Stations of Dhaka Metropolitan Police (Researchers' Own Creation).

# 5. Findings and Discussion

## 5.1. Socio-Demographic Information

Most of the respondents (23.5%) of this study belong to the age group 21-25 years whereas only 5.5% of the respondents belong to the age group of 46 years and above. Another significant number of respondents (20.5%) belong to the age group 26- 30 years. Here, the average age of the respondents is 30.12 years. It indicates that the majority of the respondents are young who belong to the age group of 21-25 years of age. About the sex variation of the respondents, the total number of 74.5% were male and (25.5%) were female (Table 3). Therefore, it is derived that maximum male respondents were interviewed than female respondents because of their willingness to respond voluntarily. Male people were found as more interested to answer the questionnaire than the females in the study areas.

**Table 3.** Age Group of the Respondents.

| Age Group (Year) | Number | Percent | |
|---|---|---|---|
| Below to 20 | 22 | 11 | |
| 21- 25 | 47 | 23.5 | |
| 26- 30 | 41 | 20.5 | |
| 31- 35 | 30 | 15 | Mean = 30.95 |
| 36- 40 | 32 | 16 | Median = 30 |
| 41 - 45 | 17 | 8.5 | Mode = 30 |
| 46 to Above | 11 | 5.5 | |
| Total | 200 | 100 | |

## 5.2. Locations of and Considerations Behind CCTV Installation (n=40)

There are some considerations for the installation of CCTV in different locations of the jurisdictions of all police stations. The considerations that the police personnel mentioned as they generally undergo before the installation of CCTV are the vulnerable or dangerous places (hotspots), crowded places, busy places, important places, entry points of the city, market places, etc. The places that have been included there are considerations by police officers based on their experiences. There was no prior research/investigation before the implementation of such CCTVs under the operation of police.

## 5.3. Impact of CCTV Installation on the Behaviors of Offenders

### 5.3.1. Numbers of CCTV Cameras Identified by the Respondents' (Within Their Notice)

People were asked about the number of CC cameras that they have identified under the jurisdiction of a particular police station. A large number of respondents' (33%) mentioned that they have identified 1 to 10 CC cameras in the jurisdiction of the police station (about which they were asked questions), whereas 14% of those respondents mentioned that they did not know about the installation of any camera by police in the public places. Table 4 also shows that 22 percent of the respondents were able to identify 11 to 20 CC cameras installed by police. The number of identified CC cameras in the range of 21 to upwards is minimal in the study area. It is very natural that only the persons who know about the placement of CC cameras can be aware of their actions and there may be a deterrent effect for them also, especially in case of any potential crime commission. It indicates that the CCTVs installed by policy lack better visibility by the common masses. If the visibility is not good, the deterrent effects of such technology may become difficult. This mechanism may only have some investigative value if the recordings are proper in those cases but not any deterrent impact is possible.

**Table 4.** Number of CCTV Cameras (installed by Police) Identified by the Respondents (n=200).

| No of CC cameras installed | Number | Percent |
|---|---|---|
| 1-10 | 66 | 33 |
| 11-20 | 44 | 22 |
| 21- 30 | 26 | 13 |
| 31- 40 | 19 | 9.5 |
| 41 to more | 17 | 8.5 |
| Don't know | 28 | 14.0 |
| Total | 200 | 100 |

### 5.3.2. Impacts of CC Cameras on Particular Offences in Respondents' View (n=200)

Three categories of offenses were determined in the study to understand the respondents' perception of the relative impact of CCTV on those crimes. These crimes were theft, snatching/ hijacking, and violent crimes (murder, rape, and beating). For each of the offenses, most of the respondents replied that they consider that CCTV has a moderate impact on those offenses. A fewer percentage of the respondents consider that CCTV has less impact on the reduction of those crimes. The least among them have replied that CCTV has no impact at all on those crimes. It is, therefore, evident that people are considering that CCTV may have a good deterrent impact on crimes. In most of the cases, such statistics may indicate the common psychology of the probable perpetrators also. It should be noted that only habitual offenders do not always commit offenses. Sometimes people also may commit crimes when they get an opportunity. That is why it is evident that CCTV may act as a common deterrent. However, most of the respondents think that CCTV surveillance has less probability to have an impact on property-related offenses (Table 5).

**Table 5.** The Impacts of CC Cameras on the Prevention of following Offences (n=200).

| Offenses | Value | Arguments | | | | Total |
|---|---|---|---|---|---|---|
| | | No Impact | Less Impact | Moderate Impact | Strong Impact | |
| Theft | f | 33 | 56 | 71 | 40 | 200 |
| | % | 16.5 | 28 | 35.5 | 20 | 100 |
| Snatching/ hijacking | f | 19 | 52 | 81 | 48 | 200 |
| | % | 9.5 | 26 | 40.5 | 24 | 100 |
| Violent Crime (Murder, Rape, Beating) | f | 37 | 51 | 68 | 44 | 200 |
| | % | 18.5 | 25.5 | 34 | 22 | 100 |

### 5.3.3. Perception Analysis of Visible Impacts of CCTV Installation on Different Offences (n=40)

Semi-structured interviewing of the police officers yielded some realistic and experience-based findings in terms of getting the information regarding CCTVs' impact on different types of crime prevention. They were asked about the impact of CC cameras on the prevention of different offenses like theft, snatching/ hijacking and violent crimes (murder, rape, and beating) and support services like emergency medical services/emergency aid in Bangladesh. This table identified police officers' comments regarding CC cameras' impact on the selected crimes.

By analyzing the collected information from the police personnel, this study revealed 25% of respondents consider CCTV as having a strong impact on the prevention of theft. In the case of Snatching/ hijacking, the percentage is 25% and in case of preventing violent crimes (Murder, Rape, Beating) the percentage is also 25%. Besides, for all of these crimes the frequency of impact is very high for the moderate level impact of CCTV. For the mentioned three crimes the percentages are 50, 40 and 45 consecutively. In the case of less impact, the percentage is 25, 35 and 30 consecutively. No respondent from police personnel was found mentioning that CCTV has no impact on crimes (Table 6).

**Table 6.** Visible Impact on CCTV Installation on Different Offences (n=40).

| Offences | Value | Arguments | | | | Total |
|---|---|---|---|---|---|---|
| | | No Impact | Less Impact | Moderate Impact | Strong Impact | |
| Theft | f | - | 10 | 20 | 10 | 40 |
| | % | - | 25 | 50 | 25 | 100 |
| Snatching/ hijacking | f | - | 14 | 16 | 10 | 40 |
| | % | - | 35 | 40 | 25 | 100 |
| Violent Crime (Murder, Rape, Beating) | f | - | 12 | 18 | 10 | 40 |
| | % | - | 30 | 45 | 25 | 100 |

### 5.3.4. The Difference in the Behavior of the Probable Offenders Between Pre-installation and Post-installation of CC Cameras (n=200)

The perception of the respondents (common people) about the difference in the perceived behavior of the probable offenders between pre and post-installation of CCTV in their respective areas was measured in the study. These responses indicate that a major portion of them (41%) responded as CCTV can put a moderate impact on the behavior of probable offenders whereas 4.5% of them mentioned that they did not perceive any difference among the behavior of probable offenders. 21.5% found less and 26% found significant differences between the crime patterns before and after the installation of CCTV (Table 7). So it is obvious that people are either expecting or experiencing some positive changes in the behavior of probable offenders due to the installation of CC cameras in their areas.

Here, one difference appears between the responses of the general people and that of the police officers. Police officers think that CCTV must have an impact on crimes whether those may be less, moderate or strong whereas, many common people believe that CCTV may not have an impact on the selected crimes.

**Table 7.** Difference in the Behavior of the Probable Offenders between Before and After the Installation of CC Camera in this Area (n=200).

| Difference found | Number | Percent |
|---|---|---|
| No | 9 | 4.5 |
| Less | 43 | 21.5 |
| Moderate | 82 | 41.0 |
| Significant | 52 | 26.0 |
| Don't Know | 14 | 7.0 |
| Total | 200 | 100.0 |

### 5.3.5. Impact of CCTV on the Behavior of Common People (n=200)

Most of the respondents (71.5%) mentioned that the installation of CCTV changes the behavior of people positively whereas 28.5% of the respondents mentioned the change as negative. This actually puts an impact on the

deterrent aspect of crimes or on the fear of the offenders for being identified easily (Table 8).

**Table 8.** Whether CCTV Changes the Behavior of People.

| Changes in the behavior of people | Frequency | Percent |
|---|---|---|
| Yes | 143 | 71.5 |
| No | 57 | 28.5 |
| Total | 200 | 100.0 |

If Yes, How much has it Changed the Behavior of People (n=143)?

Perception of the respondents about the frequency of changes in the behavior of people due to the installation of CCTV. Most of the respondents (74.5%) mentioned that CCTV does not play any role in changing the behavior of people always but it changes the behavior sometimes. However, around one-fourth of the respondents think that CCTV always changes the human nature of the action (Table 9).

**Table 9.** Frequency of Changes of People's Behavior Due to CCTV (n=143).

| Frequency of change | Frequency | Percent |
|---|---|---|
| Always Changes | 35 | 24.5 |
| Sometimes Changes | 108 | 74.5 |
| Total | 143 | 100.0 |

## 5.4. Nature of Crime Displacement Due to the Installation of CCTV

### 5.4.1. Crime Displacement to Another Area After the Installation of CC Cameras (n=200 and n=40))

Respondents' (common people) perception about the displacement of offenders to another area due to the installation of CC Cameras in one place was revealed in the study. Most of the respondents (52%) consider that displacement of the offenders happens whereas 48% of the respondents disagreed on that (Table 10). It is a general concept that crime displacement happens when any intervention is taken in any area to prevent crime. That is why it is important to address such interventions and their subsequent impact on the people. Otherwise, the reduction of crimes in one place may be supplemented by the increase of crime in another place.

The perception of the police personnel about the displacement of the offenders to another area after the installation of CC Cameras is almost similar. Most of them (65%) mentioned positively that displacement of the offenders occur whereas 10% of the respondents mentioned negatively about displacement. Moderately the same findings were s found from general and ordinary people (Table 11).

**Table 10.** The Displacement of the Offenders to another Area after the Installation of CC Cameras (n=200).

| Offender Displacement Occurred | Frequency | Percent |
|---|---|---|
| Yes | 104 | 52.0 |
| No | 96 | 48.0 |
| Total | 200 | 100.0 |

**Table 11.** Displacement of the Offenders after the Installation of CC Cameras (n=40).

| displacement of the offenders | Frequency | Percent |
|---|---|---|
| Yes | 26 | 65.0 |
| No change | 4 | 10.0 |
| Little change | 10 | 25.0 |
| Total | 40 | 100.0 |

### 5.4.2. Which Offences are Generally Influenced Because of CCTV Installation (n=40)?

This study also identified some offenses which are generally influenced by CCTV installation from the police personnel. According to this study, the rate of reduction of crime due to the CCTV installation is higher for serious crimes and petty offenses. For other crimes like hijacking and theft, the reduction is minimal based on the police personnel's opinion. It is to be noted that the police personnel's comment for this question was not location-based. Rather, this was a generalized observation of them which is not supported by empirical data analysis (Table 12).

**Table 12.** Offences that are Generally Influenced by CCTV Installation.

| Crime | Frequency | Percent |
|---|---|---|
| All Crimes | 4 | 10.0 |
| Theft | 4 | 10.0 |
| Petty Offence | 10 | 25.0 |
| Serious Crimes | 16 | 40.0 |
| Hijacking | 6 | 15.0 |
| Total | 40 | 100.0 |

## 5.5. Impacts of CCTV on Criminal Investigation (Perception of Police Personnel)

### 5.5.1. Usual Way of Responding (n=40)

The police personnel was asked about their usual way of responding in terms of CCTV recordings of everyday incidents. Most of them replied that they have a regular monitoring process where they keep careful observation of every location and try to use proactive policing for problem-solving. Many of them replied that they are mostly associated with taking steps based on the recordings if they get any complaints from any other person (Table 13).

**Table 13.** Usual Way of Respondents.

| Way of responding | Frequency | Percent |
|---|---|---|
| After receiving a complaint | 16 | 40.0 |
| Monitoring | 24 | 60.0 |
| Total | 40 | 100.0 |

### 5.5.2. Frequency of Taking Action Based on the Recordings of CCTV (n=40)

Another question was asked how often they take action using their CCTV footage and recordings. Responses indicate the frequency of taking action based on the recordings of CCTV.

Most of the respondents (50%) mentioned that they often prefer to take action, 20% mentioned that they always prefer to take action and 30 percent of them mentioned that less frequently they prefer to take action based on CCTV footage (Table 14).

**Table 14.** The frequency of Taking Action based on the Recordings of CCTV.

| Frequency of taking action | Frequency | Percent |
|---|---|---|
| Always | 8 | 20.0 |
| Often | 20 | 50.0 |
| Sometime | 12 | 30.0 |
| Total | 40 | 100.0 |

## 5.6. People's Overall Attitude Towards the Installation of CCTV

### 5.6.1. Feeling of Safeness in the Presence of CCTV in any Location (n=200)

The feeling of safeness of the people may be influenced by the presence of CCTV in any location. Most of the respondents (63%) mentioned that they feel safe whereas 1.5% of respondents feel unsafe due to the privacy issue in the presence of CCTV (Table 15). Moreover, 23% think that it has no impact on their feeling of safeness. So it is clear that the presence of CCTV in any location creates the safety feelings among most of the people thinking that they are in the presence of at least a capable guardian.

**Table 15.** Safety Feelings in the Presence of CCTV.

| Safety Feelings | Frequency | Percent |
|---|---|---|
| Very Safe | 25 | 12.5 |
| Safe | 126 | 63.0 |
| No impact | 46 | 23.0 |
| Unsafe | 3 | 1.5 |
| Total | 200 | 100.0 |

### 5.6.2. Whether CCTV Hampers Privacy (n=200)

It is a matter of consideration whether CCTV cameras hampers the privacy of people or whether they consider that they hamper such privacy. Most of the respondents (86%) in this study mentioned that CCTV cameras did not hamper their privacy whereas 14% of respondents mentioned that it doses (Table 16). Many people think that if any incident occurs in any public in their presence, the police may be called by the criminal justice professionals if any incident happens by any chance there. In this way, they are afraid of their probable involvement in any unwanted incident and the adjudication process.

**Table 16.** Whether CCTV camera Hampers Privacy.

| Whether CCTV camera hampers privacy | Frequency | Percent |
|---|---|---|
| Yes | 28 | 14.0 |
| No | 172 | 86.0 |
| Total | 200 | 100.0 |

### 5.6.3. Satisfaction with the Installation of CCTV (n=200)

The study investigated the feelings of happiness of the respondents in the course of the installation of CCTV in these locations. Most of the respondents (62%) mentioned that they are satisfied whereas 2% of the respondents that feel dissatisfied with the frequent CCTV installation. Additionally, 36% mentioned that they don't have any idea about the utility of these cameras and that is why they remained neutral. So it is clear that the installation of CCTV in these locations create feelings of satisfaction and safeness among most of the people irrespective of their actual usage (Table 17).

**Table 17.** Satisfaction with the Installation of CCTV (n=200).

| Whether Satisfied with the Installation | Frequency | Percent |
|---|---|---|
| Yes | 124 | 62.0 |
| No | 4 | 2.0 |
| Neutral | 72 | 36.0 |
| Total | 200 | 100.0 |

### 5.6.4. Whether the Number of CCTV Camera Should Be Increased (n=200)

The perception of the respondents on whether the number of CCTV cameras should computer-mediated yielded interesting answers. Most of the respondents (76%) mentioned positively that CCTV camera needs to be increased although many of them are not happy with the present installation process, whereas 5.5% respondents gave negative answer on that. Moreover, still, 19% of the respondents were not sure about their opinion about it (Table 18).

**Table 18.** Whether the Number of CCTV Camera should be Increased.

| the number of CCTV camera should be increased | Frequency | Percent |
|---|---|---|
| Yes | 152 | 76.0 |
| No | 11 | 5.5 |
| Not Sure | 38 | 19.0 |
| Total | 200 | 100.0 |

## 5.7. Efficiency Measures by Police Personnel

### 5.7.1. Common People's Perception of the Positions of Close-Circuit Cameras

Many of the respondents (common people) think that all the CCTV cameras that were placed in different locations are not in the right place. Most of the respondents think that some of the cameras are in the right place and some are in the wrong place. It is also true that a good number of people think that most of the cameras are in the right places. It is, therefore, important to conduct a security survey prior to the installation of CC cameras so that these can serve all the purposes that they are supposed to do (Table 19).

**Table 19.** Whether the Positions of CCTV are Right.

| Perceptions | Frequency | Percent |
|---|---|---|
| Yes | 69 | 34.5 |
| No | 26 | 13.0 |
| Some are right and some are not | 105 | 52.5 |
| Total | 200 | 100.0 |

### 5.7.2. Attitudes of Field-level Officers About the Frequent Installation of CCTV in Different Locations (n=40)

The police officers answered the question about their attitudes as field-level officers on the frequent installation of CCTV in different locations. A significant number of them mentioned that the attitudes of field-level officers are good whereas only a negligible portion of them are not very much satisfied with it. Sometimes police officers need to work in a flexible manner. If the police officers are always under security surveillance, their feeling of being filmed may cause efficiency challenges. For this reason, some of the police officers are not very satisfied with the frequent installation of CCTV although, they are benefited from these devices (Table 20).

**Table 20.** Attitudes of Field-level Officers about the Frequent Installation of CCTV in Different Locations.

| The attitudes of field-level officers | Frequency | Percent |
|---|---|---|
| Moderate | 28 | 70.0 |
| Not very satisfied | 2 | 5.0 |
| Satisfied | 10 | 25.0 |
| Total | 40 | 100.0 |

### 5.7.3. Maintenance of CCTV Cameras (n=40)

A large number of police officers (45%) mentioned positively whereas 30% mentioned negatively about the functionality of CCTV cameras. Moreover, 25% mentioned that many cameras have lost their functionality (Table 21). It seems that a continuous maintenance plan should be chalked out for maintaining the cameras and the system well.

**Table 21.** The Functionality of the Cameras.

| Functionality of cameras | Frequency | Percent |
|---|---|---|
| No | 12 | 30.0 |
| Some work, some does not | 10 | 25.0 |
| Yes | 18 | 45.0 |
| Total | 40 | 100.0 |

### 5.7.4. Initiatives Taken by Police Officers When CC Cameras Loses Their Functionality (n=40)

About the initiative the police officers take in case of dysfunctionality of CCTV cameras, they replied that most of them (70%) inform it to the higher authority, 25% inform it to the unit responsible for the maintenance of CCTV, whereas 5% mentioned the take no action directly in this regard (Table 22).

**Table 22.** Initiatives Taken by the Police Officers in case of Dysfunctionality.

| Initiatives taken | Frequency | Percent |
|---|---|---|
| Inform higher authority | 28 | 70.0 |
| Inform CCTV unit | 10 | 25.0 |
| No action is taken | 2 | 5.0 |
| Total | 40 | 100.0 |

## 6. Discussion and Analysis

A good security survey is quite essential to cover any specific location by close circuit television. However, in the studied area, from the responses of the police officers, it becomes obvious that there is a lack of security survey by the expert or professionals. In terms of location-selection, only some arbitrary generic strategy was adopted which may not be very much cost-effective and efficient. The number of CCTV cameras and the areas covered by those (which are maintained by police) are very limited in Dhaka city. However, the impact of CCTV cameras is not negligible. It further needs a combined approach to cover all the major intersections and key points of the city under a complex CCTV networking. Like many other countries, this system may be incorporated by artificial intelligence or face recognition techniques.

A good number of the respondents (from the common people) do not know about the installation of CC cameras in the jurisdiction of their concerned police station. It is obvious that they are not very much cautious about their activities in the area under surveillance. If the camera is not placed in visible places, it may not have any deterrent impact. So, it may be effective only in the cases of investigation, not in creating any deterrent impact on the probable offenders. In a similar way, the number of CCTV cameras should be sufficient so that people can feel safe from the fear of crime.

However, many of the general people are still not aware of the privacy issue. It is, therefore, necessary for the police to inform the people about their surveillance points so that any privacy issue does not appear later on. In case of such surveillance, they can be filmed without their consent, which is a questionable issue and contrary to the common ideal legal assumption of the country.

Placement of CCTV in a sequential way and as a part of a great network may change the picture of the whole city. The locational presence of the police stations based on necessity is another important issue behind this. CCTV should be placed on the highway also for preventing and detecting vehicle-related crimes and property crimes. This is very essential to apprehend that prevention is the better solution than arresting the offenders and supporting the victims

Police need to focus on the displacement of offenses as crimes generally displace to those places where the criminals

are less likely to be identified. Any reduction of crimes in any area necessarily needs to understand whether the offenders are arrested, rectified or displaced. Otherwise, the overall crime rate would be the same.

CCTV has been proved to be less effective in different countries because of many reasons. In spite of this reality, technological advancement has made the device more powerful. It may help people to give a relief that they are under the surveillance of the police. If the privacy issue is minimized by proper notification to the public, it can be an important instrument for the detection and prevention of crimes.

In Bangladesh, still, there is no good experimental research on the impact of CCTV on crime prevention. Rigorous research on such issues can provide important insights regarding the best way of installing CCTV in different locations. However, no such information is kept systematically in the police stations so that it would be possible to compare the crime statistics of pre and post-installation of CCTV. There should be some specific protocols for the operation of CCTV and the legal system should encounter necessary changes for using those as evidence.

## 7. Conclusion and Recommendations

CCTV is a good instrument for starting an investigation and a great tool for making deterrent effects on probable offenders. Though its starting is not very new in this country, still a lack of well-organized set-up of this system is visible. A planned installation of a high-quality CCTV system with the capacity building of police personnel for taking the full utility of the system is thereby utmost necessary. Lack of a well-documented approach in understanding the comparative advantage of CCTV is very difficult in the existing policing system of Dhaka city and the whole of Bangladesh as well. Therefore, a research-intensive strategic adaptation may help police to adopt this system within the organizational formality. Other than having a great orientation and the attachment of the field level officers with this technology, the success of this system will be a far reach. All the prime locations and the hot spots should undergo a proper survey for understanding the required numbers and probable positions of CCTV cameras for the best coverage. A wide approach combining comprehensive networking through police headquarters and police stations may allow the police department of Dhaka city to get the greater benefit of the system.

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