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ABSTRACT

The widespread use of closed-circuit television (CCTV) systems has necessitated the implementation of policies and other regulations to limit their potential for abuse and privacy and civil rights violations. However, little information exists on whether such regulations influence CCTV use and outcomes. Therefore, this study investigated whether CCTV policies moderated the relationship between CCTV use and police operations outcomes in Nairobi City County, Kenya. The study was informed by Rational Choice Theory and Routine Activity Theory. It used both a cross-sectional design and a phenomenological design. The study participants comprised police officers attached to the CCTV command center and police stations in Nairobi County. They were sampled using cluster and purposive sampling. A questionnaire, a key informant interview guide, and a focus group guide were used to collect data. The findings revealed that CCTV policies greatly influenced CCTV use. They did, however, have a statistically insignificant moderated effect on the relationship between CCTV use and police operations outcomes (b =.001, 95% CI [-.410, .408], p =.996). The study concluded that CCTV policies influence CCTV use but do not moderate the relationship between CCTV use and police operations outcomes. It recommended that CCTV policies be published and regularly reviewed, and that police officers be sensitized about them.

Keywords: *CCTV, Policies, Police Operations Outcomes, Moderator*

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INTRODUCTION

The increased threat of crime in public spaces, particularly terrorism, has compelled governments to turn to CCTV to address security and safety concerns. As a result, many police services around the world are increasingly using CCTV to improve their operations (Rahman, 2017). The widespread use of CCTV has dramatically transformed how police operations such as patrols, criminal investigations and traffic enforcement are conducted (Goold, 2004). Police can now monitor highways, streets, traffic and other public spaces in real time from the confines of a command center and respond quickly to developing or ongoing crimes or emergencies (Socha & Kogut, 2020). They can also quickly investigate and solve cases, even when witnesses are unavailable (Ashby, 2017).

CCTV is a surveillance system that uses video cameras to capture images of a given location and transmit them to a specific set of monitors or recorders via wired or wireless communication links. The images are only viewable by people connected to the system. They can also be stored, retrieved, and shared for security and other purposes. CCTV systems first appeared in the 1940s and were initially used for military purposes (Kroener, 2016). Their use in police operations began in the United Kingdom (UK) in the 1960s and has since expanded globally (Piza, 2018). They have also evolved into cutting-edge technology with analytic functions like speed, face detection, and license plate readers (Skogan, 2019).

The most common desired outcome of using CCTV systems in police operations is crime reduction (Lum et al., 2018). Potential offenders are expected to avoid committing crimes in CCTV-covered areas because the chances of identification and arrest are high (Willis et al., 2017). Other desired outcomes of using CCTV in police operations, expected to arise from crime reductions, include increased safety and cost savings for police operations (Munyo & Rossi, 2019; Piza et al., 2019; Lum et al., 2018). However, empirical evidence on whether CCTV systems achieve their desired outcomes, particularly regarding crime reduction, is mixed and sometimes contradictory (Malmenbratt & Brooks, 2015; Taylor & Gill, 2014; Taylor, 2010).

As the use of CCTV in police operations has become widespread, several concerns have been raised. The most notable ones are that CCTV systems may be misused, used to target minorities and pose a threat to privacy and civil rights (Basimanyane & Gandhi, 2019; Zohair, 2018; Ntinyari & Nguyo, 2017). In response to such concerns, governments and entities with CCTV systems have attempted to document policies to regulate their use (Government of Kenya [GoK], 2019; Hartmus, 2014). The primary goal of policies is to ensure that CCTV systems are appropriately managed, effective and used legally and ethically (Shukla et al., 2020; La Vigne et al., 2011a). Among other things, their implementation aims to promote fair information practices principles such as transparency, integrity and security in using CCTV systems and data (Department of Homeland Security [DHS], 2007). Some studies also suggest that they significantly impact policing processes and outcomes (Lee, 2020) and are the foundations of police operations.

It is worth noting that many countries worldwide, including Kenya, do not have published CCTV-specific legal guidelines (Ntinyari & Nguyo, 2017). In the absence of such guidelines, some scholars have argued that policy, derived mainly from relevant laws and internal procedures, fills the void (Hartmus, 2014). In Kenya, for example, the legality of CCTV systems and data is mainly governed by the Evidence Act (EA), the Criminal Procedure Code (CPC), the Data Protection Act (DPA), the Kenya Information and Commission Act (KICA), and internal policies and procedures of entities with CCTV systems. Nonetheless, the 2019 draft national CCTV policy is expected to effectively regulate CCTV when it comes into force (GoK, 2019).

Some research has identified factors that may moderate the connection between CCTV use and desired outcomes. These include setting, camera density and positioning, monitoring practices, and integration with other interventions such as

lighting, alarms, fencing and police responses (Piza et al., 2019; College of Policing, 2015). However, previous research has paid little attention to whether CCTV policies could function as moderators or influence the use of CCTV in police operations. Hence, the current study attempted to bridge this gap.

Statement of the Problem

Kenyan police, like others worldwide, are increasingly using CCTV to improve their operations, particularly in urban public spaces. In June 2015, the Kenyan government installed a CCTV system in Nairobi City County for police use (National Police Service [NPS], 2016). The goals of installing the system were to aid in crime detection and investigation, quicken police responses, reduce crime, and improve public safety (NPS, 2018). The system's use is governed by policies derived from relevant legislation and internal police procedures (NPS, 2017). However, little information exists on how police officers apply these policies and whether they impact the system's intended outcomes. Previous research has shown the importance of policies in using CCTV systems. However, it reveals little about how they may influence police operations and outcomes. Thus, this study sought to determine the moderating effect of CCTV policies on the relationship between CCTV use and the outcomes of police operations in Nairobi City County, Kenya.

Study Objectives

The study's objective was to determine the moderating effect of CCTV policies on the relationship between CCTV use and police operations outcomes in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Review

This study was informed by Rational Choice Theory (RCT) and Routine Activity Theory (RAT). RCT was developed by Cornish and Clarke (1986). It assumes that criminals act rationally, weighing the potential risks and rewards of committing a crime before deciding whether to commit it (Clarke & Cornish, 2017). Consistent with this assumption, research suggests that CCTV cameras influence the decision to offend. They reduce crimes in areas they cover because criminals fear the increased risk of detection and arrest (Willis et al., 2017). As such, RCT provides the rationale for using CCTV systems in police operations to reduce crimes. It also helps explain the critical role of policies in ensuring the responsible use and effectiveness of CCTV systems. Users with the intent of misusing CCTV systems will likely be discouraged by the strict accountability measures provided by policies because they can be easily detected and disciplined.

On the other hand, RAT, originated by Cohen and Felson (1979), proposes three essential elements for a crime to occur. These are a likely offender, a suitable target, and an absence of a capable guardian/controller (Miro, 2014). Studies indicate that CCTV cameras may serve as guardians against crime in two ways. First, their mere presence may instill fear in potential offenders that they are being watched and will be arrested if they commit a crime (Reynald, 2019; Clarke & Felson, 1993). Second, they improve the abilities of other guardians, such as police officers, to detect and respond to crime (Hollis-Peel et al., 2011).

Furthermore, research indicates that guardians/controllers' effectiveness is influenced by the actions of super controllers, those who regulate them (Sampson et al., 2010). According to Sampson et al., super controllers exert influence over controllers through various mechanisms, including policy development, persuading them to follow established policies, rewarding compliance, and punishing noncompliance. Hence, RAT was relevant to this study because CCTV policies ensure that police officers use CCTV properly. They can, however, only guarantee the desired police operations outcomes if they are comprehensive, appropriate, and followed.

Empirical Review

CCTV policies refer to guidelines for installing, using and managing CCTV systems (GoK, 2019). They are

principally developed by governments, but entities with CCTV systems often develop and implement them as well. They can be written or unwritten (Jennette, 2013). A comparative analysis of published CCTV policies from Australia, New Zealand, the UK, and the United States (USA) by Hartmus (2014) revealed that their scope varies little by jurisdiction. The similarities included detailing the purposes, uses, management and operations of CCTV systems and procedures for recording, retaining and sharing images. Others included specifying the responsibilities and competencies of users and methods for monitoring and evaluating the policy. The few differences in CCTV policies between jurisdictions, according to Hartmus, are due to differences in privacy and privacy protection conceptualizations. The similarities identified by Hartmus served as the basis for this study in assessing the adequacy of CCTV policies applied by police in Nairobi County and their impact on the use of CCTV in police operations.

Previous research has stressed the importance of policies in implementing CCTV systems. For example, Schlosberg and Ozer (2007) observe that their absence may lead to users using CCTV systems for unintended purposes. Similarly, Ntinyari and Nguyo (2017) claim that their absence would lead to the abuse and misuse of CCTV systems. Moreover, Shukla et al. (2020) argue that they are essential in guiding users when entering, storing and retrieving CCTV data and protecting surveilled people's privacy rights. Nonetheless, previous research has not revealed whether CCTV policies influence police operations and outcomes, which was the focus of the current study.

A study by Schlosberg and Ozer (2007) on the threat to civil liberties posed by public surveillance systems in California, USA, discovered that most police departments lacked meaningful CCTV regulations. Only a third of the police departments (11 of 37) surveyed by Schlosberg and Ozer had written CCTV policies. Also, some written policies specified the purpose of surveillance systems and prohibited their use for racial profiling, but were in some ways inadequate and not legally enforceable. Some, for example, did not bar "suspicionless" monitoring of speech activities or using race or gender to select subjects. Moreover, other policies mandated the retention of footage for a shorter period, seven days, limiting community members' ability to seek remedy for violations after it was erased. The strength of Schlosberg and Ozer's study is that it illustrates how a lack of adequate and comprehensive policies may lead to the abuse of CCTV systems and civil rights violations. However, it does not demonstrate how CCTV policies may influence the outcomes of police operations.

Jennette's (2013) study on college campus policies in Mid-Atlantic USA reveals how policies can ensure the ethical use of CCTV and the flaws of policies implemented by entities with CCTV. The study revealed that most policies limited live viewing to security or law enforcement officers and recorded footage viewing to emergencies. The policies also limited footage storage to seven to 120 days, with its copying and dissemination requiring a subpoena and permission from the officer in charge of security. However, nearly half of the colleges (48%) lacked written CCTV policies and provisions mandating personnel training and ensuring policy updates. Furthermore, most colleges lacked consistent and comprehensive CCTV policies and did not communicate them publicly or throughout their campus. Nonetheless, Jennette's findings are limited to colleges in the USA and do not show whether CCTV policies impact police operations.

Lee (2020) explored the impact of police organizational investigative policies on investigative outcomes in the USA, particularly crime clearance rates. The findings showed that police organizations that pursued crime control policies rather than due process policies were more effective at solving and clearing crimes. As a result, Lee concluded that police organizational policies significantly impact crime investigation processes and outcomes. A major limitation of Lee's study is that it only examined investigative policies and crime rates.

In Kenya, Ntinyari and Nguyo (2017) investigated the regulation of CCTV footage. They found that there was no specific legal framework for CCTV. They observed that this was unexpected given the increased use of CCTV in the country and provisions in the EA that allow CCTV evidence to be admissible in court. They concluded that the Data Protection Bill 2013 (now the DPA 2019) might effectively regulate CCTV when it becomes law. Hence, research was required to determine whether DPA and other relevant laws adequately and effectively regulate CCTV use.

METHODOLOGY

Research Design: The study employed a mixed-method approach. It combined a cross-sectional survey design and a phenomenological design. It used a cross-sectional survey design because it allows for faster and less costly data collection from a sample set at a single point in time (Wanjohi, 2014). A phenomenological design was also used because it allows respondents to express their experiences with a phenomenon under study, more so when it is little known (Cresswell & Clark, 2017). In line with Orodho et al.'s (2016) recommendations, combining the two designs enabled the study to overcome the limitations of using quantitative or qualitative methods alone and enhanced the validity of the study's findings.

Study Site, Sample and Instruments: Nairobi County was chosen for the study because it has a CCTV system that police actively monitor. The target population comprised 5550 police officers deployed to police stations in the county and those operating the CCTV system. Cluster and purposive sampling were used to select a sample of 402 police officers who participated in the study. The research instruments included a questionnaire, an interview guide, and a FGD schedule. The instruments were pretested before the main study, with Cronbach's alpha used to assess the internal reliability of the questionnaire items. The alpha coefficient of the nine items regarding CCTV policies was .905, which was considered satisfactory based on Taber's (2018) suggestion.

Data Collection and Analysis: Data collection occurred from February to April 2021. A total of 358 of the 374 distributed questionnaires were returned, yielding a response rate of 96 percent. Of the 358, 11 were unusable, so the final sample size used in data analysis and reporting was 347. Quantitative data was analyzed using descriptive (frequency and percentages) and inferential statistics (binary logistic regression). Thematic analysis was used to analyze qualitative data.

Sample Characteristics: The demographic characteristics of the survey respondents matched those of the target population. One-third (33.1%) were females, and two-thirds (66.9%) were males. Over a third (34.6%) were university graduates, 23.3 percent were diploma holders, 41.5 percent had secondary school qualifications, and the remaining 0.6 percent had primary education qualifications. Constables comprised 58 percent, while corporals, sergeants and senior sergeants were 26 percent. Those in inspectorate and gazetted ranks were 14 percent and 2 percent, respectively. Moreover, nearly two-thirds (61%) had served in the county for over three years, implying that many were aware of the impact of CCTV use on police operations outcomes.

Variables: The independent variable was CCTV use, which was a composite variable made up of three variables. These were CCTV use in monitoring public places, coordinating incident responses and investigating crime. Each variable had five measures, which were picked from prior research on CCTV uses in police operations. The measures were graded on a five-point Likert scale, with response anchors of 1 (very little extent [VLE]), 2 (little extent [LE]), 3 (moderate extent [ME]), 4 (great extent [GE]), and 5 (very great extent [GE]) (very great extent [VGE]). The composite indices of the three independent variables were entered separately into a regression model as predictors for regression analysis.

The moderating variable was CCTV policies, represented by two variables: legal policies and NPS policies. Legal policies had four items on the adequacy of CCTV-related legislation and their impact on police operations. On the other hand, NPS policies included five items, seeking responses on the clarity, specificity and comprehensiveness of NPS policies in guiding CCTV use. The nine moderating variable items were assessed on a 5-point Likert scale ranging from 1 = VLE to 5 = VGE. Their composite index was used in the regression analysis.

The dependent variable was police operations outcomes. It comprised five variables: crime reduction, quick response to incidents, reduced traffic violations, enhanced officer safety, and cost savings for police operations. The five variables were measured on a 5-point Likert scale ranging from 1 = VLE to 5 = VGE. For logistic regression analysis, the five responses were transformed into two dummy variables: 0 = *no significant beneficial impact on police operations*, and 1 = *significant beneficial impact on police operations*. The two dummy variables were created by collapsing responses VLE, LE, and ME to "0" and responses GE and VGE to "1." Their composite indices were used in the regression analysis.

FINDINGS AND DISCUSSIONS

The study first sought to determine the impact of policies on the use of CCTV in police operations before examining whether they moderated the relationship between CCTV use and police operation outcomes.

Influence of Policies on CCTV Use

Participants were asked to indicate how legal and NPS policies influenced the use of CCTV in police operations in Nairobi County. A five-point Likert scale, ranging from 1 = VLE to 5 = VGE, was used to obtain their ratings. The validity of the survey responses was checked using narrative responses from FGDs and key informant interviews (KIF). Table 1 summarizes the survey responses.

Table 1: Descriptive Results for the Effect of Policies on the use of CCTV in Police Operations

Policy Type	Statement	VLE %	LE %	ME %	GE %	VGE %
Legal	a) Existing laws effectively guide police officers when using CCTV	8.6	18.4	32.9	24.8	15.3
	b) Existing laws sufficiently guide police officers when seizing footage for use as evidence in court	4.3	16.7	32.0	30.5	16.4
	c) There are sufficient legal policies on CCTV in Kenya	8.1	26.2	31.1	22.5	12.1
	d) Legal policies have positively affected the use of CCTV in police operations	6.9	18.2	28.8	31.4	14.7
NPS	e) NPS policies ensure proper use of the police CCTV system	7.8	14.4	31.4	30.3	16.1
	f) NPS policies ensure skilled officers operate the police CCTV system	6.9	12.1	20.5	36.3	24.2
	g) NPS policies specify the areas to be monitored and the activities to be recorded when using CCTV	7.5	12.7	30.0	32.3	17.6
	h) NPS policies provide adequate time for storing CCTV data that may be required as evidence in court	8.9	9.5	28.2	30.3	23.1
	i) NPS policies specify how CCTV data should be disseminated	7.5	10.7	26.8	34.0	21.0

N=347; No. of items = 9; Cronbach's Alpha = .905

Source: Field Data (2021)

Effects of Legal Policies

From Table 1, it is evident that respondents differed on how legal policies influenced police operations. While nearly half (40%) said they greatly guide police officers in using CCTV, 33 percent and 26 percent said they moderately and less guide, respectively. Similarly, whereas over a third (35%) said legal policies on CCTV were greatly sufficient, 31 percent and 34 percent said they were moderately and little sufficient, respectively. Furthermore, nearly half (47%) said legal policies greatly guided police when seizing CCTV footage for evidential purposes. A similar proportion (46%) also said they positively affected the use of CCTV in police operations, respectively. These results suggest that legal policies moderately influenced the use of CCTV in police operations. The moderate influence could be attributed to an absence of CCTV-specific laws in the country, as indicated by GoK (2019) and Ntinyari and Nguyo (2017).

During the focus groups and key informant interviews, a recurring theme was that various laws governed CCTV use. For instance, FGD participant PTP B3 said, "we use CCTV per the laws governing photographic evidence like the DPA, EA, and KICA. These laws have made our job easier and allowed us to win big in court against offenders, which is a huge accomplishment." PTP B3's sentiments demonstrate that existing laws adequately guided CCTV use and enhanced investigative outcomes. These findings support Hartmus's (2014) claim that various laws regulate CCTV use in many countries. The findings also affirm Shukla et al.'s (2020) observation that policies ensure the effective use of CCTV systems.

Although relevant laws governed CCTV use, many police officers were less conversant with them, particularly those concerning the admissibility of CCTV footage as evidence in court. This finding was well articulated by FGD participant PTP A3, who stated: "I don't know much about the policies. Please ask the officers at the command center about them." Similarly, key informant KIF IV stated: "Many officers on the ground are unfamiliar with CCTV policies and the admissibility of CCTV footage in court." These sentiments imply that many police officers could not use CCTV appropriately and effectively due to a lack of familiarity with the laws that govern its use. The findings are similar to those of Ngwenya (2012), who discovered that many South African police detectives were unaware of the legal requirements for CCTV footage's admissibility as evidence in court.

It also emerged from the qualitative data that officers' unawareness of the law governing CCTV use varied according to their age and place of deployment. Young officers, CCTV operators and officers from the Directorate of Criminal Investigations (DCI) tended to be well conversant with CCTV-relevant legislation. Their awareness was partly due to three main reasons. First, the training curriculum for young officers included some aspects of CCTV. The second reason was that the officers operating CCTV and several DCI officers had undergone CCTV-related courses. The other reason was that officers operating CCTV interacted with CCTV data regularly.

Additionally, the qualitative data revealed that many officers aware of CCTV legal policies viewed them as complicated and impeding their work. As a result, some avoided using CCTV footage in their investigations or as evidence in court. FGD participant PTP C4 said, "the laws are stringent and make it difficult to follow when using CCTV data as evidence in court." These findings corroborate past studies indicating that police officers are less likely to use new technologies if they believe the policies governing their use are restrictive (Schuck, 2015; Donald, 2010).

Regarding NPS policies, Table 1 shows that almost half of the respondents (46%) said they greatly ensured the appropriate use of CCTV. Nearly two-thirds (61%) said they greatly ensured skilled officers operated the police CCTV system. Half (50%) said they greatly specified the areas to be monitored and the activities to be recorded when using CCTV. More than half (53%) said they provide an adequate retention time for CCTV data needed

as evidence in court. Likewise, over half (55%) said they greatly specify how to disseminate CCTV data. These findings imply that NPS policies greatly impacted the use of CCTV. They also suggest that the influence of NPS policies was more significant than that of legal policies. This could be attributed partly to officers understanding their internal policies better because they apply them routinely.

The FGDs and in-depth interviews with the key informants were incredibly insightful in probing the nature and adequacy of NPS policies. They revealed that the NPS lacked a written CCTV-specific policy, including standard operating procedures (SOPs). In their absence, relevant internal policies, procedures, and regular briefings from supervisors guided officers when using CCTV. Key informant KIF I said, "the development of a CCTV policy is ongoing, but that doesn't mean officers are not well-guided in CCTV use. They refer to sections of service standing orders dealing with electronic evidence, and commanders brief them daily on their roles." These sentiments imply that NPS had an unwritten CCTV policy, which may have changed frequently and provided insufficient guidelines for the use of CCTV. The findings are consistent with those of Schlosberg and Ozer (2007), who found that many police agencies in California, USA, operated their CCTV systems without written and meaningful policies.

Despite the lack of CCTV-specific policy, qualitative data agreed with survey results that NPS policies significantly guided police use of CCTV. For example, in criminal investigations, FGD participants said they clearly outlined the procedures for obtaining, retrieving, storing and sharing CCTV data and using it as evidence in court. This finding was articulated well by FGD participant PTP A2 who stated: "NPS policies and procedures are okay and comply with electronic evidence regulations. They outline the steps for using CCTV images in criminal investigations and obtaining and presenting them as evidence in court." These findings support Shukla et al.'s (2020) observation that policies are critical in guiding users to manage CCTV data responsibly.

Qualitative data also aligned with the survey findings that NPS policies ensured that only competent officers operated CCTV. They revealed that to be deployed as a CCTV operator, an officer needed to have good observation skills, an understanding of the law, information technology skills, and at least five years of police service. The deployed officers had to also undergo induction training before operating CCTV. Key informant KIF I remarked:

> *There is a well-defined criterion for selecting officers to work as CCTV operators. For example, one must be computer literate, have at least five years of service, have good observation skills and have passed police law exams. The selected officers are also appropriately trained in surveillance skills and evaluated continuously, and underperforming ones are deployed elsewhere.*

The above quote demonstrates that the NPS policies provided effective selection criteria for choosing skilled officers to operate CCTV and improve their effectiveness, primarily through training and performance evaluation. These findings imply that CCTV operators were competent in performing their duties. The findings accord with Lee's (2020) observation that police organizations often improve their operations' effectiveness by employing various policies, including officers' effective selection and training. The findings, however, contradict Shukla et al.'s (2020) observation that police organizations sometimes deploy incompetent officers to operate CCTV systems.

In addition to ensuring competent officers operated CCTV, NPS policies ensured that only authorized officers operated it and handled its data. Qualitative data revealed that officers stationed at the command center could only operate the CCTV system. Also, those requesting CCTV video for investigative purposes needed written permission.

Furthermore, the time and date of retrieving and sharing the video were recorded. FGD participant PTP A6 said:

> *The cameras can only be operated by officers stationed at the command center, and only a few can access CCTV footage and other records. In addition, only investigating officers can request and receive footage. The request must be for an incident with an Occurrence Book (OB) number and be made on a prescribed memo form duly filled and signed by the respective station commander. In my view, these policies have streamlined how CCTV is used and reduced incidents of misconduct.*

The remarks of PTP A6 demonstrate that NPS policies provided a variable way of establishing the chain of custody of CCTV data, which is crucial in proving its authenticity in court. They also show that NPS policies adhered to the fair information practices principles, particularly security. The security principle requires CCTV policies to provide adequate safeguards against CCTV data loss, unauthorized access or use, destruction, alteration, or unintended or inappropriate disclosure (DHS, 2007). These findings agree with those of La Vigne et al. (2011b), who found that police in Washington, USA, had elaborate documented policies governing the acquisition, dissemination and retention of CCTV data. The findings also corroborate prior research showing that policies ensure police officers follow the rules of evidence when seizing CCTV footage for legal purposes (Donald, 2010; Levesley & Martin, 2005).

The preceding quote also shows that NPS policies minimized malpractice in using CCTV. This was partly due to its accountability measures for safeguarding the integrity and confidentiality of CCTV data and systems. Based on RCT, such measures could have discouraged errant users from abusing and misusing CCTV systems and data because they could be easily detected and sanctioned. Similarly, in line with RAT logic, the findings indicate that NPS policies were an effective guardian against improper CCTV use.

While survey results showed that NPS policies specified areas to be monitored and activities to be recorded when using CCTV, qualitative data indicated that they did not. Focus groups revealed that CCTV operators had much leeway over what they could view and capture on camera. FGD participant PTP A5 remarked, “the policies are not clearly spelled out… the operators have complete control over what and where they observe or record on camera during their shift.” This quote demonstrates that the NPS policies do not adequately guide some critical aspects of CCTV use. If left unchecked, such deficiencies may lead to the abuse of the police CCTV system, particularly for tracking individuals arbitrarily or voyeuristically. Furthermore, these findings suggest that the NPS policies violated the fair information practices principle of use limitation. This principle requires that CCTV systems and data be only used for a specified purpose.

The above findings are similar to those of Goold (2003), who found that many police-operated CCTV systems in the UK lacked effective policies governing CCTV use. However, the findings differ from those of La Vigne et al. (2011b) in Washington, DC, who discovered that CCTV policies restricted police officers to viewing only public areas. They also found that policies obligated officers to sign a statement acknowledging that they respected people’s privacy rights while performing monitoring duties. The divergent findings suggest that the scope of CCTV policies implemented by police organizations around the globe varies.

The qualitative data also contradicted the survey results, which showed that NPS policies allowed for adequate CCTV data retention. The NPS policies allowed footage retention for a maximum of 30 days unless it was still required for investigative purposes. According to FGD participants, this period was too short because it limited the availability of footage for investigating incidents that came to the attention of police after being erased. This finding supports Ashby’s (2017) observation that storing CCTV data for a shorter period reduces its

availability for investigative purposes. FGD participant PTP B8 stated: "because there is no primary storage, the footage is kept for up to 30 days before being automatically deleted. This time frame is too short and makes it difficult to review what happened after the footage has been overwritten." This quote reveals that the NPS could not retain footage for more than 30 days due to a lack of adequate storage, which significantly hampered police operations.

Despite the limitations of the 30 days footage retention time, the study discovered that the period complied with the law, particularly sections 34 of the DPA and 83H of the KICA. These sections allow for electronic records retention for any length of time as long as the storage, processing, and erasure conditions are met. Additionally, the NPS 30 days retention time complied with the fair information practices principles of minimization and integrity. According to the minimization principle, CCTV data should only be kept for as long as it is needed to fulfill a specified purpose (DHS, 2007). On the other hand, the integrity principle requires that CCTV data with no evidentiary value be routinely destroyed after a set time (DHS, 2007). Even so, the NPS footage retention period of 30 days requires an urgent review to ensure that footage is available for investigating late-discovered incidents.

Moderating Effect

In order to test whether policies moderate the relationship between CCTV use and police operation outcomes, a logistic regression analysis was performed using Hayes's (2018) PROCESS macro for SPSS. The predictors/independent variables for the analysis were CCTV use in monitoring public spaces, coordinating incident responses, and investigating crime. The dependent variable in the analysis was police operations outcomes, and the moderating variable was CCTV policies. Table 2 presents the regression results.

Table 2: Regressions Results on the Moderating Effect of CCTV Policies

Variables	B	SE	Z	P	LLCI	ULCI
Constant	-8.137	2.821	-2.884	.004	-13.667	-2.608
CCTV_MON	.879	.743	1.184	.237	-.577	2.335
CCTV_RES	.534	.212	2.516	.012	.118	.951
CCTV_INV	.203	.226	.896	.370	-.241	.646
CCTV_POL	.692	.824	.840	.401	-.922	2.306
Int_1	-.001	.209	-.005	.996	-.410	.408
Sample Size: 347			Level of Confidence: 95.000			
Model Summary: Log-Likelihood = 118.344, df = 5, p = .000, Nagelkerke R^2 = .387						

Source: Field Data, 2021

As shown in Table 2, the interaction (Int_1) between CCTV use (CCTV_MON, CCTV_RES & CCTV_INV) and CCTV policies (CCTV_POL) is statistically insignificant (b = -.001, 95% C.I [-.410, .408], p = .996). This implies that CCTV policies do not significantly moderate the relationship between CCTV use and the outcomes of police operations.

Table 2 also shows that the regression coefficients for the three independent variables are positive. These are .879, .534 and .203 for the use of CCTV to monitor public spaces, coordinate responses to incidents and investigate crime, respectively. This means that using CCTV alone (without incorporating CCTV policies) is more likely to improve police operations outcomes than including CCTV policies. These findings contradict Lee's (2020) claim that policies significantly impact policing outcomes.

CONCLUSION AND RECOMMENDATIONS

Policies are generally expected to regulate CCTV use and yield the desired outcomes. However, the findings of this study suggest that various factors influence such expectations. These include the scope and nature of policies (legal or internal), the extent to which users are conversant and apply the

policies, and how policies comply with fair information practices principles. The study found that legal policies have not influenced police operations much as NPS policies, mainly because many officers were unaware of and least applied them. The study also shows that while CCTV policies may influence CCTV use, they do not significantly moderate the relationship between CCTV use and police operation outcomes. This implies that implementation barriers must be addressed for CCTV policies to be effective. As such, the study recommends that CCTV policies be published, regularly reviewed, and police officers sensitized about them.

While this study contributes to understanding how policies impact CCTV use and outcomes, it has some limitations that further research can address. The study concentrated on the police-operated CCTV system in Nairobi County and relied solely on police officers' views. Thus, future research may need to look at non-police-operated CCTV systems and incorporate the perspectives of both police officers and members of the public in contexts other than Nairobi County. Future research may also explore whether policies can function as a mediator.

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