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**STUDENTS' PERCEPTIONS ON CLOSED-CIRCUIT TELEVISION (CCTV)
SURVEILLANCE SYSTEMS AND SCHOOL SAFETY**

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Abstract

In the last decade, technology in education has brought CCTV technology to the Kenyan secondary school education space. This study focused on secondary school students' perception of CCTV surveillance in public boarding secondary schools, using Igembe area Schools in Meru County, Kenya. Using a descriptive survey research design, the study sought to examine: the perception of students towards CCTV surveillance technology used in their schools. Data was collected from 200 students through self-administered questionnaires. From the analysis, the study established Schools had embraced CCTV surveillance as a measure of ensuring that students had a safe environment. The study established that most students perceived CCTV surveillance cameras positively and the cameras were associated with keeping the school safe. CCTV was perceived positively by principals, while students were more guarded in their praise. Students expressed concerns over invasion of their privacy and bullying in the school. To make schools safe, and equally address student human rights there should be a policy on the use of CCTV surveillance cameras and prior sensitisation of all stakeholders.

Key words: CCTV, safe schools, technology adoption, human rights, surveillance.

Introduction

Because of the high number of individuals and concentration of public funds, schools are likely to be an easy target for those trying to sell gadgets, including CCTV (Taylor & Kearney, 2018). Notwithstanding, there are benefits to using CCTV surveillance in schools (Ratcliffe, 2006, Pizza, Caplan, & Kennedy, 2009; Suryavanshi et al., 2016); there are those who warn of negative consequences of unregulated surveillance (Taylor, 2011). Some studies report no benefit of using CCTV for safety (Ashby, 2017; Ditton, 2000). Thus, it is necessary to be cautious in praising CCTV surveillance technology (Ahmed, Haque, Guha, Rifat, & Dell (2017); Frauenberger et al., 2017). However, should an incident occur, CCTV cameras can capture evidence for follow-up but cannot respond to or interrupt the incident in progress (Carli, 2008). CCTV surveillance technology should help improve school safety and help create child-friendly schools, ensuring that every child schools in an environment that is physically safe, emotionally secure, and psychologically enabling (UNESCO, 2015).

Some schools in Kenya continue to install CCTV video surveillance systems with the hope that schools will be safer. Gill, Bryan, and Allen (2007) argued that people's perceptions of CCTV may remain the same even after the installation of CCTV and that such persons would hold their earlier views but avoid any repeated victimization. This Hope (2009) argued that CCTV represents a shift in cultural values, away from enculturation to self-regulation of students. It is argued that this technology, predominantly focused on students, is effective in facilitating direct observation but needs to do more to foster self-surveillance in the longer term. It is concluded that CCTV use in schools

represents an underlying shift in values, away from exercising social control through enculturation towards system integration.

Some studies have concluded that CCTV makes people feel safer (Sarno et al., 1999). The students' perceptions viewed safety, equity, and support as lower in schools that made "greater use of security cameras" inside the building (Lindstrom et al., 2018). They concluded that outside cameras and security might be perceived by students as safekeeping, whereas inside cameras may evoke feelings of being viewed as potential perpetrators who need surveillance. Research suggests that perceptions of safety provided by CCTV surveillance cameras play an essential role in their ability to succeed at school. A study by Taylor (2011) on CCTV amongst teachers and pupils in UK schools reported a rise in school surveillance, representing the normalization of technological surveillance through habituation. Hope (2009) argues that CCTV, always directed at students, may represent a negative shift from enculturation to system integration, where we take away students' responsibility to care for each other to being watched over by systems.

Technology can threaten human rights by facilitating surveillance, interception, and collection of personal data (Birnhack & Perry-Hazan, 2020). One of the most discussed and worried aspects of today's information age is the subject of privacy (Wado et al., 2007, Perry-Harzan & Birnhack, 2016; Birnhack & Perry-Harzan, 2020; Slade & Prinsloo, 2014). It is also the subject of international law, such as the Convention on the Rights of the Child (Article 16), the Universal Declaration of Human Rights (Article 12), and the International Covenant on Civil and Political Rights (Article 17).

In Kenya, CCTV technology is relatively new. A quick search of the words CCTV in Kenya schools returned 11 pages with 110 entries, out of which less than five entries discussed the topic directly, with most being CCTV promotional articles. This need for more local literature on student perceptions of adopting a new technology prompted this study. It used a Technology Acceptance

Model by Davis(1989), summarized in Figure 1. From this model, it is hypothesized that people decide to use a new technology because of their perceptions of how useful and easy it is to use. In the case of CCTV acceptance, stakeholders need to be clear about the technology's usefulness and ease of use. Conversely a possible adopter of technology may refuse to adopt it if

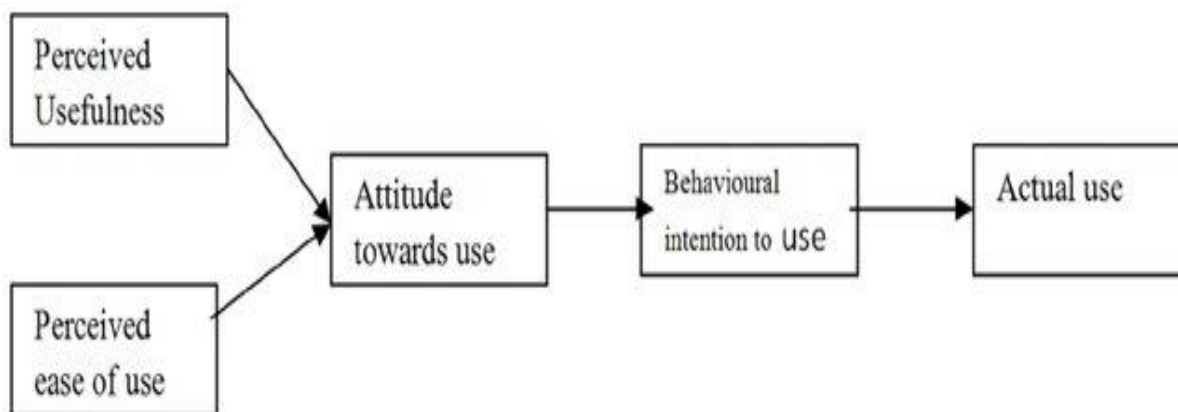


Figure 1: Technology Acceptance Model by Davis (1989).

it is deemed inconvenient, harmful or difficult to use. Although CCTV is now an older technology in developed countries (Mowen & Parker, 2017), it is relatively new in Kenya, and this study investigates how students react to the new technology.

The objective of the study

The specific objective of this study was to establish the perceptions of secondary school students on the contribution of CCTV surveillance technology to safety in their schools. The objective was investigated with respect to usefulness of CCTV to school safety, threats to students' safety, role of the CCTV surveillance system and, if the students felt safe in their school.

Methodology

A descriptive design was used for this study on a target population of eight public

boarding secondary schools in Igembe, Kenya, with 4800 students. There were eight public boarding secondary schools. The sample consisted of 240 students, 76 of them female, purposively sampled from the only three boarding schools that had CCTV installed. The fourth school which had CCTV was used for the pilot. Self-administered questionnaires were used to collect student data, and returned same day. A total of 200 students from the anticipated 240 agreed to and participated in the study representing a return rate of 83.3%.

Results and Discussion

Out of the 200 respondents to the questionnaires, 124 students were male, and 76 were female. The students were asked to rate how functional the new CCTV system was for school safety.

Table 1: Usefulness of CCTV cameras to school safety

Usefulness of CCTV	Frequency	Percent
A little	135	67.5
Much	16	8
Very Much	49	24.5
Total	200	100

Data captured in Table 1 show only about one third of the students agreed that the use of CCTV cameras helped much in keeping the school safe. Of the students, 67.5% of them indicated that the use of CCTV cameras helped only a little in keeping the school safe. These findings seem to support the findings of Lindstrom et al., (2018) that suggest that cameras outside the school and security may be perceived by students as safekeeping, whereas inside cameras may evoke feelings of being viewed as potential perpetrators who need surveillance. Kitsantas et al. (2004) also found that safety actions by the school did not appear to influence student perceptions of school safety. Gill, et al., (2007) wrote that CCTV

was not as good as they thought it would be, that the presence of CCTV does not change peoples perception on safety of their environment. This position taken by students could be attributed to the fact that safety technologies complement existing policies and procedures and assist staff in enforcing them, increases the chances of catching and identifying offenders and cannot be a means to an end but requires support and collaboration from other players.

To ascertain students' perception of safety at the school, students were requested to indicate the person they felt threatened their safety most in school. The following results yielded data illustrated in Figure 2.

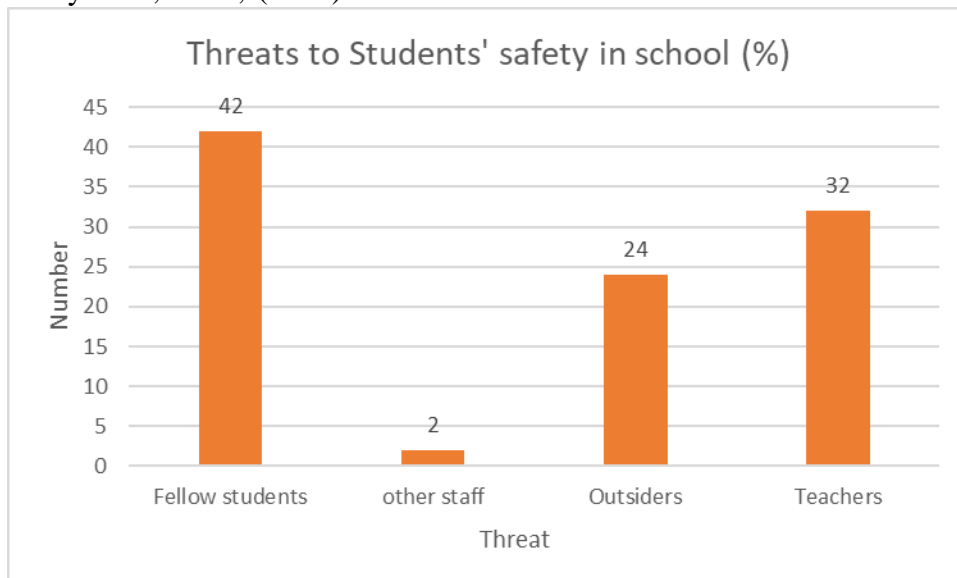


Figure 2: Perceived Threats to students' safety in school

As seen in Figure 2, 42% of students felt that fellow students threatened their safety in school, followed closely by teachers (32%) and outsiders (24%). From these revelations, it was instructive that students were threatened more by factors within their school than outside the school. The number of students who reported feeling threatened by fellow students included freshers, indicating that bullying of freshers is still common. Surprisingly, teachers, who should take up a student caretaker role, were also mentioned as a threat to pupil safety by 32% (a third) of students. More students viewed the teacher as a threat to safety than outsiders. Put another way, the results of this study suggest that about three-quarters of perceived threats to a student's safety arise from the school community itself. This threat could refer to physical violence by teachers through the use of corporal punishment which have shortlived results in terms of compliance (Lopes & Oliveira, 2017), but also illegal in Kenya. The following statement is apt in the discussion:

Mitchell et al. (2016), like Warnick (2007), found that student trust in teachers

and school safety accounted for 98% of the 22% of the variance among schools in students' identification with their school. Therefore, all the educational stakeholders must take up the responsibility of ensuring that the safety measures truly address stated safety needs. Threats from fellow students could be due to incidences of bullying, and the mention of teachers could result from corporal punishment in school in spaces that were not covered by CCTV cameras. Kupchnik (2018) and Cowan et al. (2013) advocate the need to build safe, inclusive school communities. La Vigne (2011) pointed out that CCTV cameras alone may not deter crime, requiring more patrols by human agents, say, by prefects, teachers on duty, and administration. This may raise questions about the time school administrators may want to interact physically with the school community.

When asked about what the CCTV surveillance in their school is used for, students mentioned four reasons, captured in Figure 2.

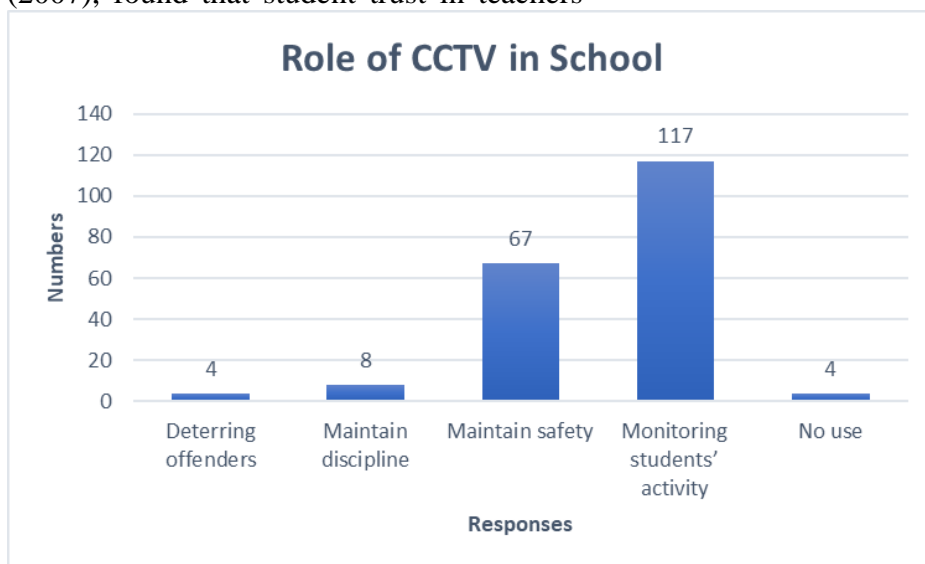


Figure 2: Roles of CCTV in the School (%)

From Figure 2, close to three students in five (58.5%) felt that CCTV's primary purpose was to monitor student activity in the school, while 33.5% thought that it was to maintain school safety and security. Only 2% thought that CCTV surveillance technology in the school could have been of more help. This concurs with other research findings that students believe their schools to be safe (Bracy, 2011). From these explanations, it was clear that some students viewed the CCTV cameras negatively, which correlated with the findings that Bracy (2011). 8% of the students thought that CCTVs help reduces indiscipline. Only a few students (2%) felt that CCTV cameras should be used better to enhance safety. Four percent (4%) felt their privacy was being invaded, especially by cameras installed inside the buildings. One percent (1%) of the students indicated that teachers do not trust students, and 10% thought that the system was not very helpful. These figures could, alternatively, mean that the students are oblivious to the technical capabilities or their privacy rights. These findings agree with Taylor (2011), who established that learners might perceive security cameras negatively as they could instill fear in interacting, speaking, and moving freely. Students may feel that everything is being watched. Only three percent agreed they need more cameras in their school, showing their privacy concern. On safety, almost half of the students (48%) agreed that CCTV cameras made the school safe. 25% indicated that the school was a little safe, while 23% revealed that the school was very safe. McGuire (2017) states that a safe school is where teachers and students are free to do their tasks without fear from other students, staff, or internal threats within the school environment.

New students learned of the CCTV camera's location when they saw the cameras on the

walls (82.5%), 13.5% of the new students learned about the camera's locations in students' meetings, and 4% of the students learned of the same through warning notices. It was apparent that new students learned about the location of the CCTV cameras in school by locating the cameras on the wall graphic that the cameras installed in the school were not hidden from their view. The intention of the CCTV surveillance cameras was noble; the presence of the cameras was for their safety, as reiterated by Sarno et al. (1999) and fully supported by the students. For schools that choose to use security cameras, there is a need for schools to institute guidelines for doing so to minimize potential adverse effects. School administration should also sensitize students on the presence of cameras concerning their privacy.

Students were requested to indicate the value of CCTV in the safety of their school. Six structured statements were incorporated with a scale ranging from Agree to Disagree. A five-point Likert-type scale was employed with Strongly Disagree, Neutral, and Strongly Agree. The respondents' mean scores with the various statements were worked out as shown in Fig 3. Figure 3 shows the means of the responses to statements on CCTV and school safety, all measured on a scale of 1 to 5. A mean below 2.5 shows that most respondents rated the statements low. The statements that had the lowest ratings were 'students steal each other's property (1.18), school is 'very safe' (1.26), and 'schools safer because of CCTV' (1.53). On the other hand, statements on bullying (3.27) and CCTV invading student privacy (2.55) received higher means. This means that theft from other students is less uncommon than bullying, an offense that can be very subtle away from the watch of CCTV cameras. Students generally thought CCTV cameras invaded their privacy.

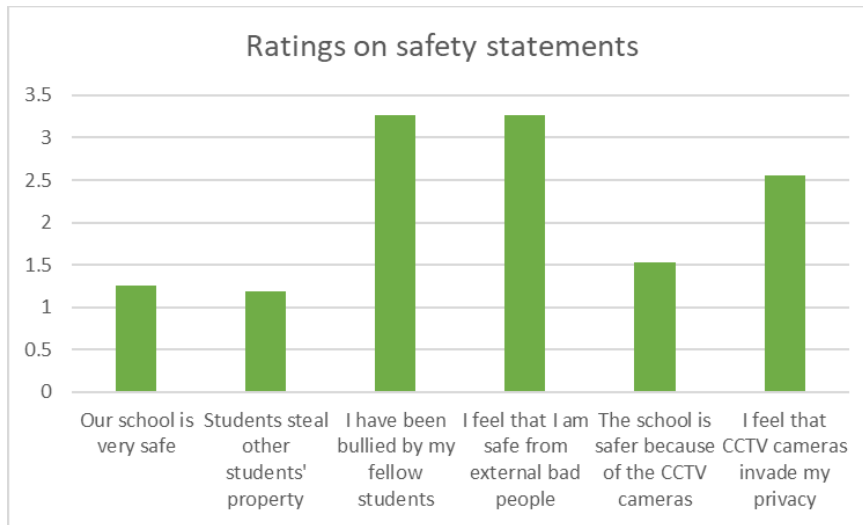


Figure 3: Students' Ratings on Safety Statements

This could be attributed to installing CCTV cameras around the dormitories or other boarding facilities, such as the toilets where students felt their privacy was being invaded; a finding supported bythat suggested that schools equipped with indoor security cameras made students feel less secure.

A large percentage of students perceived CCTV surveillance cameras positively, a confirmation of Monahan (2011) that continuous use of technology makes it more normative in a culture. The CCTV surveillance cameras were associated with keeping the school safe, a finding corroborated by..... Among comments received, a few students noted that CCTV cameras should be used better to avoid invading their privacy; it showed that students feel that teachers do not trust them and that the system was not very helpful. These findings align with Taylor (2011), who established that learners might perceive security cameras negatively, for they could instill fear in interacting, speaking, and moving freely. They feel everything is watched, and they had better try lying low and conform.

On school safety, the study established that all the schools were in a safe area from both internal and external threats. Students reported that their dormitories, toilets, and fences were the school's most unsafe areas. Schools have embraced CCTV surveillance to ensure that every student enjoys an environment that is physically safe, emotionally secure, and psychologically enabling. On the roles of CCTV surveillance cameras, the study established that the primary role of CCTV surveillance technology was in deterring offenders and monitoring students' activities. Other minor roles included: maintaining discipline and maintaining general safety. CCTV cameras help complement the work of the security guards; they provide crucial information about the events around the school, and they help security guards beef up security in specific areas where they realize some safety threats for the safety of the students. Despite installing CCTV surveillance cameras in schools, students continued to steal other students' property. On the students' perception of CCTV surveillance technology on school safety in public boarding secondary schools, the study established that

CCTV surveillance cameras were perceived positively by many students and were linked with keeping the school safe.

Conclusions and Recommendations

This study set out students' perceptions of CCTV surveillance and safety in boarding schools. It was found that a third of the students believed their school to be safe and that safety was not attributed to the CCTV cameras. One-third of the pupils believed CCTV was useful, many thinking it is adopted to watch students rather than for school safety. Although students may find the new CCTV surveillance helpful system, the actual of the technology in adoption was decided by other parts of the school system. This has implications for involving students in managing new technologies such as CCTV surveillance. Savings may prove the usefulness of the CCTV system by students, for example, in terms of their peace of mind in school and the number of headaches solved by the technology.

The ease of use anticipated in the TAM model involved more school management than students. Decisions on what CCTV system to buy and what functionality and consideration lay in management rather than with students. Such decisions include the ease of using the new CCTV technology. Only a little was required for students to use the CCTV, perhaps showing power differentials not investigated in the study. More communication is needed on the purpose of the CCTV system and what students can do to protect or supplement the system for school safety beyond being aware of camera presence.

The school administration should ensure adequate information to stakeholders during the needs analysis, implementation, monitoring, and evaluation of the CCTV system. Staff and students need to be explained how the system works to ward off

claims that the CCTV system is installed to monitor students and not school safety. All stakeholders need training on safety and heed it first, regardless of the CCTV camera presence. CCTV cameras should be used in a way that avoids invading students' or members of staff's privacy. Students need to be sensitized on the role of CCTV surveillance in enhancing school safety to address the negative perceptions towards the system. The cameras could instill fear of interacting, speaking, and moving freely.

Although the Technology Acceptance model anticipates that adopters of technology find such a technology easy to use, and find it helpful, the decision to adopt CCTV was made by the school management. This study was limited to whether students saw the CCTV system to help keep the school safe. Another study may be necessary to determine what variables moderate acceptance of technology imposed from a component higher up in a system hierarchy.

This study was done in a rural county, whose students may have different characteristics from urban schools. More research is needed on CCTV school surveillance in urban areas to raise the generalizability of findings in this article.

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