



USER EXPERIENCE AND SATISFACTION: A STUDY OF HOUSEHOLD CCTV SYSTEMS IN VIRUDHUNAGAR TOWN

¹Uthayakumar T, ²Muthulakshmi V and Jaisun M³
¹III-BBA, ²Ph.D.Research Scholar (Full-Time), ³Assistant Professor
^{1,2 & 3}Department of Business Administration,
V.H.N. Senthikumara Nadar College (Autonomous), Virudhunagar
Affiliated to Madurai Kamaraj University

Corresponding Author's mail ID: muthulakshmisms2019@gmail.com

ABSTRACT

In an increasingly security-conscious society, the adoption of Closed-Circuit Television (CCTV) systems has become prevalent among households worldwide. This study aims to explore the multifaceted role of CCTV systems in enhancing security measures from a household perspective. Through a comprehensive literature review and primary data collection, the research investigates the motivations behind household CCTV adoption, the perceived effectiveness of CCTV systems in deterring crime and enhancing safety, and the challenges and concerns associated with their use. Additionally, the study examines the impact of CCTV systems on residents' peace of mind and overall sense of security. The findings contribute to a deeper understanding of the significance of CCTV systems in modern-day security practices and provide valuable insights for policymakers, security professionals and homeowners alike.

Keywords: CCTV, Crime prevention, Security, Technology, Virudhunagar.

INTRODUCTION

In today's contemporary era, where security remains a constant concern, closed-circuit television (CCTV) systems have emerged as a popular option for households seeking to bolster their security measures. CCTV entails a television system where signals are confined to private monitoring predominantly for surveillance and security objectives. Safeguarding the communities, businesses and

homes from external dangers and threats has become the need of the hour.

The adoption of CCTV security system has become pivotal in protecting individuals and assets on a global scale. These systems are primarily employed to observe and record real-time activities in specific areas. With millions of cameras installed worldwide, they serve as a

potent deterrent against criminal behaviour and an invaluable tool for identifying wrongdoers. The utilization of CCTV camera surveillance systems has seen a significant rise worldwide over the past three decades. The continuous process of digitization and the rising implementation of IP-based surveillance systems are accelerating the expansion of this market and are projected to almost triple its current market size.

The public attitudes toward CCTV in residential areas have changed between 2008 and 2019. The difference in attitudes between non-metropolitan and metropolitan residents decreased significantly in 2019. A study conducted using telephone interview with 1000 members of the Swedish public in which 90 % of respondents thought positively about CCTV in the public space, while 16 % agreed that it was a privacy violation (Markus Lahtinen, 2017). The CCTV safety features influence the people most to install them in their residential area and the people have a positive perception towards CCTV security system (Riddhi Patel, 2021). The expansion of CCTV installation needs to be carefully considered according to the different socio-economic contexts of each region, including crime risks (Piza *et al.*, 2019; Kimihiro Hino, 2022). Matczak *et al.*, (2023) investigated whether the municipal CCTV surveillance system is cost-effective in the case study of Poznan, Poland. The analysis comprised the preventive effectiveness of CCTV, costs of CCTV surveillance system installation and operation and costs of crime. The result implies the cautious development of

CCTV surveillance, considering the target crime types of costs, including social costs and benefits.

The 2023 Home Security Trends Report, which surveyed 1000 U.S. residents aged 18 and above, revealed a complex relationship between respondents and security cameras. While acknowledging their significance, many expressed reservations. According to the findings, 86 percent recognize the importance of security cameras in home security systems, yet some harbor concerns about potential hacking of surveillance by security companies. Notably, comfort levels varied notably by age group, with younger generations showing more trust in security cameras. 54 percent of Millennials and 45 percent of Gen Z respondents reported that they are 'very comfortable' with security cameras in their homes, likely influenced by their upbringing in a technology-driven environment. These younger generations, accustomed to extensive online sharing and some even embracing influencer roles, appear unfazed by the prospect of additional cameras. Conversely, the two older generations surveyed displayed less enthusiasm towards security cameras. Merely 38 percent of Gen X and 18 percent of Baby Boomers expressed the feeling of 'very comfortable' with security cameras in their residences, indicating a distinct contrast in attitudes compared to the younger cohorts.

As per Persistence Market Research, the CCTV camera market size in India achieved a valuation of US\$ 510.6 million in 2018. Demand for CCTV cameras in the country

experienced a growth of 16.4% in 2022, with the market size reaching US\$ 1.04 billion in 2023. Projections indicate a robust growth trajectory, with CCTV camera sales expected to grow at a compound annual growth rate (CAGR) of 17.8% from 2023 to 2033, reaching US\$ 5.35 billion by 2033.

In 2023, the India CCTV camera market held a 2.5% share of the global video surveillance market. The significant impact of technological expansion, urban growth and digital advancements in CCTV camera market prospects is anticipated to be substantial. The necessity to conduct a study on user satisfaction towards CCTV cameras in Virudhunagar town arises due to the growing importance of security in urban areas. With rising concerns about safety and surveillance, understanding the satisfaction levels of users regarding CCTV systems can provide valuable insights into their effectiveness and areas for improvement. This study aims to address the specific needs and preferences of residents in Virudhunagar town regarding CCTV cameras, thereby contributing to enhance security measures and ensuring the well-being of the community. Given these statistics and the growing importance of CCTV security systems, the present study aims to find out the reasons for installing CCTV cameras in the households in Virudhunagar town, to study the users’ experience and satisfaction level regarding various aspects of CCTV cameras and to identify the issues faced with CCTV cameras.

METHODOLOGY

Descriptive research design was employed in the present study. The data

required for the study have been collected from both primary and secondary sources. The primary data was collected from 100 samples through questionnaire. The samples include only those who have installed CCTV security systems at their homes in Virudhunagar town. The secondary data sources include data collection from different articles, magazines, websites related to the topic. Convenience sampling method of Non-probability sampling technique has been used to select the samples for the study. The demographic profile of the respondents is represented in Table 1.

Table 1 – Demographic Profile of Respondents from Virudhunagar Town.

Variables	Particulars	Frequency	Percentage (%)
Gender	Male	60	60
	Female	40	40
Level of Education	High School	11	11
	Diploma	17	17
	UG	46	46
	PG	26	26
Occupation	Private employee	47	47
	Government employee	12	12
	Business	29	29
	Unemployed	9	9
	Retired person	3	3
Age	18 – 25 years	16	16
	26 – 35 years	34	34
	36 – 45 years	29	29
	Above 45 years	21	21
Marital Status	Single	34	34
	Married	66	66
Monthly Family Income	Below Rs.20,000	7	7
	Rs.20,001 – Rs.30,000	38	38
	Rs.30,001 – Rs.40,000	31	31
	Above Rs.40,000	24	24
Family Structure	Joint Family	57	57
	Nuclear Family	43	43

Source: Primary data, 2024

RESULT AND DISCUSSION

A majority of the respondents are male (60%), while female respondents constitute 40%. In terms of education level, 46% of the respondents are holding a Bachelor degree. Also, majority of respondents (70.5%) are employed in different private organizations and 34% of the respondents are in the age group of 36-45 years. Respondents’ characteristics is represented in Table 1. Nearly 66% of the respondents are married and 38% of the respondents’ monthly family income falls between Rs.20,001-Rs.30,000. It is interesting to note that, almost 43% of the respondents belong to the nuclear family system. This shows that CCTV is gaining popularity more among the nuclear family structure.

Table 2 – Source of awareness about CCTV cameras

S.No.	Particulars	Frequency	Percentage (%)
1.	Newspaper	16	16
2.	Social media	46	46
3.	TV advertisement	9	9
4.	Friends and Relatives	29	29
Total		100	100

Source: Primary data, 2024

It is inferred from the above table that 46% of the respondents are aware about CCTV cameras and its significance through different social media networks, 29% of them have gained awareness about CCTV through their friends and relatives, 16% of them have come to known about CCTV through newspaper ads and 9% of the respondents become aware about CCTV through TV ads. The result of the present study showed that the social media contributing more in creating awareness on the use of CCTV among the public.

Table 3 – Place of installation of CCTV at home

S. No.	Particulars	Frequency	Percentage (%)
1.	Entrance and backyard	39	39
2.	Living room	43	43
3.	Entrance	18	18
Total		100	100

Source: Primary data, 2024

It is understood from table 3 that 43% of the respondents have installed CCTV in the living room of their homes, 39% of them have installed at the entrance and backyard and 18% of the respondents have installed CCTV only at the entrance area of their homes. The results of the finding revealed that CCTV Camera installation at home enhancing security and safety to the children and elders and to deter crime.

Table 4 – Reasons for CCTV camera installation at home

S.No.	Particulars	Frequency	Percentage (%)
1.	To enhance safety and security	36	36
2.	For remote monitoring of children/Property/ elders when at work/ outside	19	19
3.	For deterring crime	32	32
4.	To provide evidence in case of incidents or emergencies	13	13
Total		100	100

Source: Primary data, 2024

Among these, 36% of the respondents have installed CCTV cameras at home to enhance safety and security, while 32% of them have installed for deterring crime, 19% of the respondents have installed CCTV for remote monitoring of their children or property or elders when they are at work or outside and 13% of them have installed CCTV in order to provide evidence in case of any incidents or emergencies (table 4).

Table 5 – Duration of using CCTV cameras

S. No.	Particulars	Frequency	Percentage (%)
1.	Less than a year	26	26
2.	1 to 3 years	47	47
3.	3 to 5 years	18	18
4.	More than 5 years	9	9
Total		100	100

Source: Primary data, 2024

Table 5 clearly exhibits that nearly 47% of the respondents are using CCTV security systems for 1 to 3 years, 26% of them are using for less than a year, 18% of them are using for 3 to 5 years and 9% of the respondents are using CCTV security systems for more than 5 years.

Table 6 – Frequency of reviewing CCTV footage

S. No.	Particulars	Frequency	Percentage (%)
1.	Daily	51	51
2.	Weekly	18	18
3.	As and when needed	23	23
4.	Periodic or Occasional checks	8	8
Total		100	100

Source: Primary data, 2024

From the above table 6, it is explored that 51% of the respondents have the habit of reviewing the CCTV footage daily, 23% of them are reviewing as and when needed, 18% of them are reviewing on a weekly basis and 8% of the respondents are reviewing CCTV footage periodically or occasionally.

Table 7 – Cost of CCTV camera installation at home

S. No.	Particulars	Frequency	Percentage (%)
1.	Rs.15,000 – Rs.20,000	57	57
2.	Rs.20,000 – Rs.30,000	33	33
3.	Above Rs.30,000	10	10
Total		100	100

Source: Primary data, 2024

Table 7 shows that 57% of the respondents have spent Rs.15,000-Rs.20,000 for CCTV camera installation at home, 33% of them have spent around Rs.20,000-Rs.30,000 for CCTV installation and 10% of them have spent above Rs.30,000 for the CCTV camera installation at home.

Table 8 – Belief towards the effectiveness of CCTV camera

Particulars	N	Mean	S.D.
CCTV deters crime and help reducing violations	100	1.54	.501
CCTV minimizes theft or robbery incident	100	1.09	.288
CCTV reduces the risk of violations	100	2.85	.657
CCTV cameras is a perfect alternative to physical security	100	2.18	.609
CCTV camera installation gives a peace of mind	100	2.06	.278

Source: Primary data, 2024

From the above table 8, it can be seen that the mean value of 1st capability is 1.54 which is near to 2. Therefore, it is interpreted that respondents agree that CCTV deters crime and help reducing violations. The mean value of the second factor is 1.09 which is near to 1 and therefore it is interpreted that the respondents strongly agree that CCTV records the scenes that can help in solving the reported theft or robbery incident. The mean value of the third factor is 2.85 which is near to 3 and therefore it can be interpreted that the respondents neither agree nor disagree with the fact that CCTV eliminates the opportunity of violators to do violations. The mean value of 4th capability is 2.18 which depicts the respondents agree that CCTV cameras is a perfect alternative to physical security and the mean value of 5th

capability is 2.06 which is near to 2 and therefore it can be interpreted that the respondents agree that CCTV camera installation gives a peace of mind to them.

Table 9 – Problems/Issues encountered with CCTV usage

S. No.	Particulars	Frequency	Percentage (%)
1.	Difficulty in maintenance	9	9
2.	Limited coverage	39	39
3.	Technical issues (camera failure/ recording errors/ connectivity issues/ poor quality footage)	38	38
4.	No issues	14	14
Total		100	100

Source: Primary data, 2024

It is obvious from the above table 9 that 39% of the respondents feels that there is limited coverage in their CCTV camera, 38% of them have faced some technical issues like camera failure/recording errors/connectivity issues/poor quality footage, 14% of them have not faced any issues with their CCTV camera system and 9% of the respondents have faced difficulty in maintenance of CCTV cameras.

Table 10 – Overall satisfaction with CCTV cameras

S. No.	Particulars	Frequency	Percentage (%)
1.	Very Satisfied	23	23
2.	Satisfied	64	64
3.	Neither Satisfied nor Dissatisfied	13	13
Total		100	100

Source: Primary data, 2024

Despite several issues faced with CCTV camera usage, a majority of 64% of the respondents are satisfied with CCTV camera security system in enhancing their safety and security, 23% of them are very satisfied and 13% of the respondents hold a neutral feeling about the installation of CCTV security system

at their homes (table 10). The findings of the present study reveal that CCTV cameras play a crucial role in enhancing the security, safety and peace of mind in nuclear family systems more by providing continuous surveillance and monitoring of the children, property and the entire home environment. Therefore, improvements in CCTV product design, installation processes, customer support services and pricing strategies shall be made. Also, a notable percentage of respondents have faced technical issues of CCTV cameras. To resolve this, the following suggestions such as establishing a dedicated technical support helpline could be provided where respondents can report issues with their CCTV cameras and seek assistance from trained technicians. Moreover, online troubleshooting guides shall be developed which address common technical issues faced by CCTV camera users.

Besides, firmware updates for CCTV cameras shall be regularly released to address software bugs, security vulnerabilities and compatibility issues and a feedback mechanism shall be established to continually improve support services and address recurring technical issues proactively.

The future outlook for the Indian security market appears promising, driven by various factors such as technological advancements, increasing awareness about security concerns, and the growing need for surveillance solutions across different sectors. With rapid urbanization, rising crime rates and the expanding commercial and residential infrastructure, there is a growing demand for

security solutions to protect assets, properties and individuals. Furthermore, the emergence of new technologies such as artificial intelligence (AI), Internet of Things (IoT) and Cloud Computing is reshaping the security landscape, offering more advanced and efficient surveillance capabilities. These technologies enable features like real-time monitoring, predictive analysis and remote access, enhancing the effectiveness and convenience of security systems.

Additionally, government initiatives aimed at improving safety and security, along with regulations mandating the use of surveillance systems in certain sectors, are expected to drive market growth. For instance, initiatives like Smart Cities Mission and Digital India promote the deployment of advanced security technologies to create safer and more efficient urban environments. Moreover, the increasing adoption of integrated security solutions, combining features like video surveillance, access control and alarm systems is expected to fuel market expansion. These integrated solutions offer comprehensive security coverage and seamless management, appealing to both residential and commercial users. Overall, with ongoing technological advancements, supportive government policies and growing awareness about security needs, the future of the Indian security market indeed appears promising, offering significant opportunities for growth and innovation.

Thus, the present study strives to achieve the customers' perception and satisfaction towards CCTV Security System. The study

reveals that majority of the respondents are getting influenced through CCTVs functioning and security. Though the respondents in Virudhunagar town agree that though CCTV cameras are costly, they have installed them as it provides security to them and their family in their absence. Mostly all the respondents agree that people do feel safe under CCTV surveillance as it may prevent them from being victim of any kind of crime. The study highlights the importance of user experience and satisfaction in the context of household CCTV systems. By understanding the factors that contribute to user satisfaction, security companies, homeowners, and policymakers can work towards enhancing the design and implementation of CCTV systems to ensure maximum effectiveness. As we continue to prioritize safety and security in our homes, improving the user experience of CCTV systems is paramount. It can be concluded that customers' satisfaction towards CCTV security system is found positive with the functioning and capabilities of CCTV security system.

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