

Leveraging Evolving Technology: Networked Digital Video Surveillance

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LPRC: Surveillance Survey Report

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Introduction

This project was developed by the Loss Prevention Research Council (LPRC) obtain information about the use of video surveillance technology by retail companies including the use of video surveillance cameras; perceptions of the effects of video surveillance; and, the use of network/IP surveillance systems.

Loss prevention executives from national and regional retail companies completed an online survey that asked a series of questions (detailed below) about their companies' use of video surveillance technology; the number of years their companies have used video surveillance cameras; the types of cameras installed in their stores; if they have local or a central location to access video; their perceptions of the positive and negative effects of video surveillance in their stores; the reactions of staff and customers to video surveillance; the impact of video surveillance on loss and other aspects of loss prevention; and their awareness of other possible uses of video surveillance systems beyond loss prevention. Loss prevention executives from 49 companies completed surveys.

The survey instrument included a variety of questions about companies' current video surveillance systems and their perceptions of those systems. The specific categories of questions are as follows:

- Company Background
- Use of Video Surveillance
- Perceptions of the Effects of Video Surveillance
- Network/IP Surveillance Systems

The results of this survey provide a substantial amount of information about the use of video surveillance cameras, the effects of video surveillance on loss prevention, and general awareness of other possible uses of video surveillance cameras.

Survey Procedure and Methodology

The survey of loss prevention executives regarding their retail companies' use of video surveillance was conducted by the LPRC and members of the Loss Prevention Team (LPT) at the University of Florida between June 2, 2010, and June 11, 2010..

The survey instrument was carefully designed to illicit useful information about the use of video surveillance cameras and network/IP systems while also encouraging complete and thoughtful responses and full participation.

The LPRC-LPT completed surveys with 49 LP executives from retail companies. The survey was loaded on the LPRC-LPT online survey system. More than 250 retailers were sent an email that identified the project and provided them with a link and a password to access the survey. The LPRC-LPT online survey system enhances survey quality by asking respondents the correct questions based on built-in skip patterns and eliminates out-of-range responses. Data are automatically and instantaneously recorded into an ASCII database. The data are then analyzed using the comprehensive statistical analysis package, the Statistical Analysis System (SAS).

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Format of the Report

The report is divided into several sections that correspond to the key questions that were asked in the survey.

The report attempts to enhance the understanding of the survey results by first providing an executive summary. This summary permits a brief review of the results. More detailed information can be obtained from a close reading of the tables and figures in the sections that follow. Each section presents the results of the survey by retail segment and as an aggregated total.

Executive Summary

Company Background

Number of Retail Stores

More than two-thirds (42.9%, N=21) of the companies that participated in the survey operate more than 500 retail stores, and a similar number (40.8%, N=20) operate between 101 and 500 retail stores. About one-tenth (10.2%, N=5) of the participating companies operate between 26 and 100 stores.

Average Store Size

More than one-third (36.7%, N=18) of the respondents indicate that the average size of their most typical retail store is less than 10,000 square feet. About one-quarter (26.5%, N=13) of the respondents report that their most typical store is between 10,000 square feet and 25,000 square feet in size. About one-eighth of the respondents indicate that their most typical store is either between 25,001 square feet and 50,000 square feet (14.3%, N=7) or between 50,001 square feet and 100,000 square feet (12.2%, N=6).

Retail Category

About 30 percent of the participating companies (N=15) indicate “Specialty” as the retail category that best describes their stores, while a similar number (N=13) indicate that “Drug/Grocery” best describes their stores. Six of the participating companies classify their retail stores as “Discount/Off-Price” and five as “Apparel,” while two companies are classified as “Home Center/Hardware”; two are classified as “Department Store”; and, one is classified as “Office Supply.”

Use of Video Surveillance

Current Use of Surveillance Cameras

Almost all (98.0%, N=48) of the companies that participated in the survey indicate that they currently use video surveillance cameras in their retail stores.

Those respondents who indicated that they currently use video surveillance were next asked several series of questions about video surveillance in their stores, and their perceptions of video surveillance

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Length of Time with Surveillance

More than half (56.3%, N=27) of the respondents who currently have video surveillance in their retail stores have had surveillance for more than 10 years, and more than one-quarter (27.1%, N=13) have had surveillance for 6 to 10 years. About one-tenth (10.4%, N=5) of these respondents have had video surveillance for 3 to 5 years.

Types of Video Surveillance

Two-thirds (66.7%, N=32) of the respondents whose companies currently use video surveillance have analog cameras installed. One-quarter (25.0%, N=12) of these respondents have network/IP cameras installed.

Number of Analog Cameras Installed

About one-sixth (16.1%, N=5) of the respondents who currently have analog cameras installed have between 1 and 4 cameras installed in each store; between 5 and 8 cameras installed in each store; or, between 16 and 32 cameras per store. About one-quarter (25.8%, N=8) of these respondents have from 9 to 15 analog cameras installed per store, or more than 32 analog cameras installed per store.

Considered Network/IP Surveillance System

The vast majority (87.1%, N=27) of the respondents who indicated that they currently use analog cameras for video surveillance report that they have considered using a network/IP-based surveillance system instead.

Direct Access to Video

More than two-thirds (68.8%, N=33) of the respondents who currently have video surveillance in their retail stores indicate that their company has direct access to the recorded video material from the surveillance system both in the store and at a central or regional location.

Central Monitoring Station

About four-fifths (79.2%, N=38) of the respondents who have video surveillance in their stores indicate that their video surveillance systems are not connected to a central monitoring station.

Perceptions of the Effects of Video Surveillance

Top Positive Effects

Four-fifths (81.3%, N=39) of the respondents who currently have video surveillance in their stores say that “Increased safety and security for the staff” is one of the top four positive effects of having video surveillance in their stores, and a similar number (77.1%, N=37) say that “Better evidence material and supportive evidence in legal matters” is one of the top four positive effects. More than half (54.2%, N=26) of these respondents think that “Increased safety and security for the customers” is one of the top four positive effects of video surveillance. More than two-fifths (43.8%, N=21) of these participants believe that “Less theft and less burglary” are a top positive effect of video surveillance, and a similar number (39.6%, N=19) feel that “Less robbery” is a top positive effect.

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Top Negative Effects

Half (50.0%, N=24) of the participants who currently have video surveillance believe that “Maintenance costs for the system” are one of the top four negative effects of using video surveillance in their retail stores, and a similar number (45.8%, N=22) believe that “Technical issues with the system” are a top negative effect.

Reaction of Store Staff to Video Surveillance

Those respondents who currently have video surveillance (N=48) were next asked to rate the reaction of store staff to video surveillance in stores using a scale from 1 to 5, where 1 is “very negative,” 3 is “neutral,” and 5 is “very positive.”

Almost all (89.4%, N=42) of the survey participants who currently have video surveillance rate the reaction of the store staff to video surveillance on the positive side of the scale.

Reaction of Customers to Video Surveillance

Those respondents who currently have video surveillance (N=48) were next asked to rate the reaction of customers to video surveillance in stores using a scale from 1 to 5, where 1 is “very negative,” 3 is “neutral,” and 5 is “very positive.”

More than half (56.3%, N=27) of the survey participants who currently have video surveillance rate the reaction of store customers to video surveillance on the positive side of the scale.

Usefulness of Video Surveillance

Almost all (97.9%, N=47) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores reduces the number of incidents of internal loss.

Nearly three-quarters (72.9%, N=35) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores reduces the number of incidents of external loss.

Three-fifths (61.7%, N=29) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores increases the number of apprehensions that result in convictions

Network/IP Surveillance Systems

Biggest Obstacle in Adopting Network/IP Camera Systems

About two-fifths (41.7%, N=20) of the respondents who have video surveillance in their stores believe that “Cost” is the biggest obstacle in adopting network/IP camera systems when considering new video surveillance technology for their stores. One-fifth (20.8%, N=10) of these participants feel that “Information Technology Department collaboration” is the biggest obstacle to adopting network/IP systems.

Network/IP Systems: Additional Applications

Almost all of the participants (93.8%) who currently have video surveillance are aware of the “People counting” and “Video analytics” applications available with network/IP surveillance systems. More than

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four-fifths of these respondents are aware of “Hot/Cold zones” (80.4%); “Dwell time” (80.9%); and, “Queue counters” (81.3%).

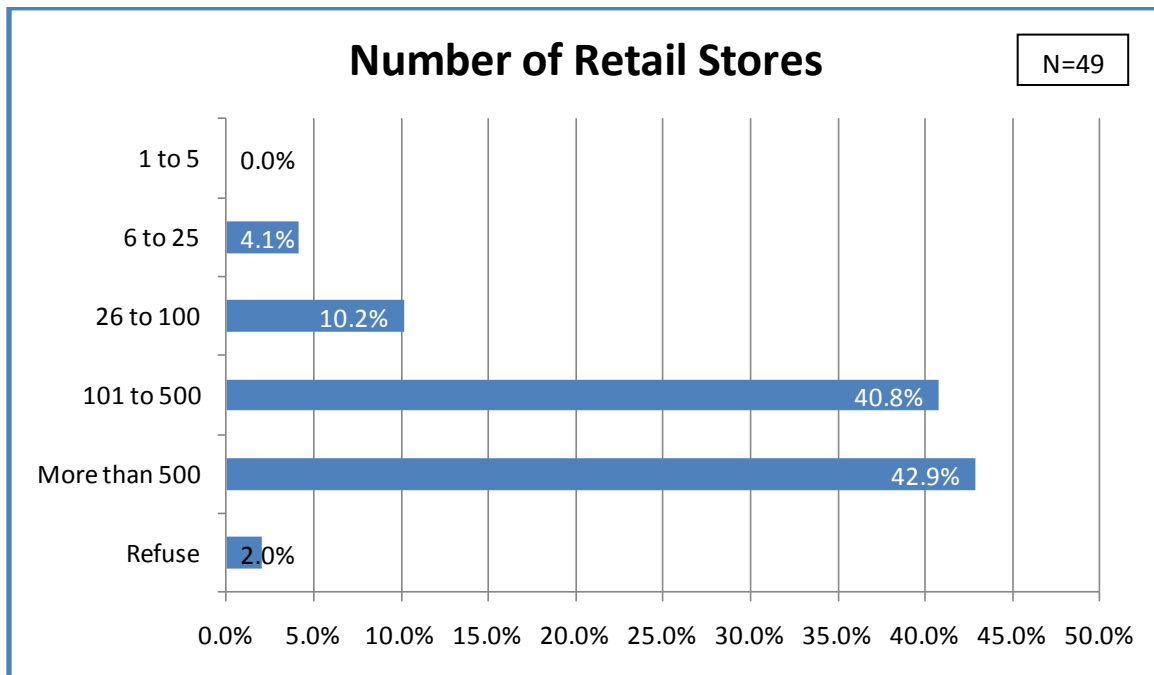
The most widely used application among current video surveillance users is “People counting.” More than one-quarter (27.1%, N=13) of these participants say that they “Already use” this application. In addition, more than one-half (52.1%, N=25) of the respondents indicate that they “May use” this application in the future.

Similar percentages of these respondents indicate that they already use “Hot/Cold zones” (12.5%, N=6) and “Dwell time” (12.5%, N=6) applications. Additionally, more than one-half (54.2%, N=26) of the respondents also say they may use each of these applications in the future.

Company Background

Number of Retail Stores

The first question asked respondents to indicate the total number of retail stores their companies operate.

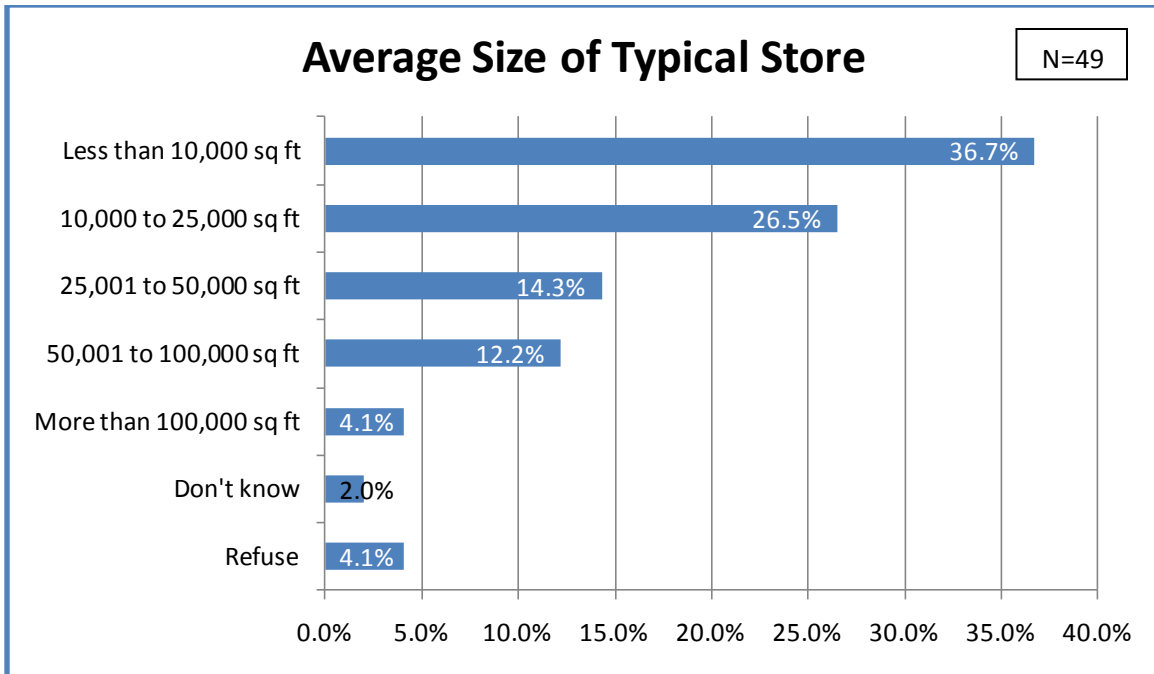


More than two-thirds (42.9%, N=21) of the companies that participated in the survey operate more than 500 retail stores, and a similar number (40.8%, N=20) operate between 101 and 500 retail stores. About one-tenth (10.2%, N=5) of the participating companies operate between 26 and 100 stores, and four percent (N=2) operate between 6 and 25 stores.

Average Store Size

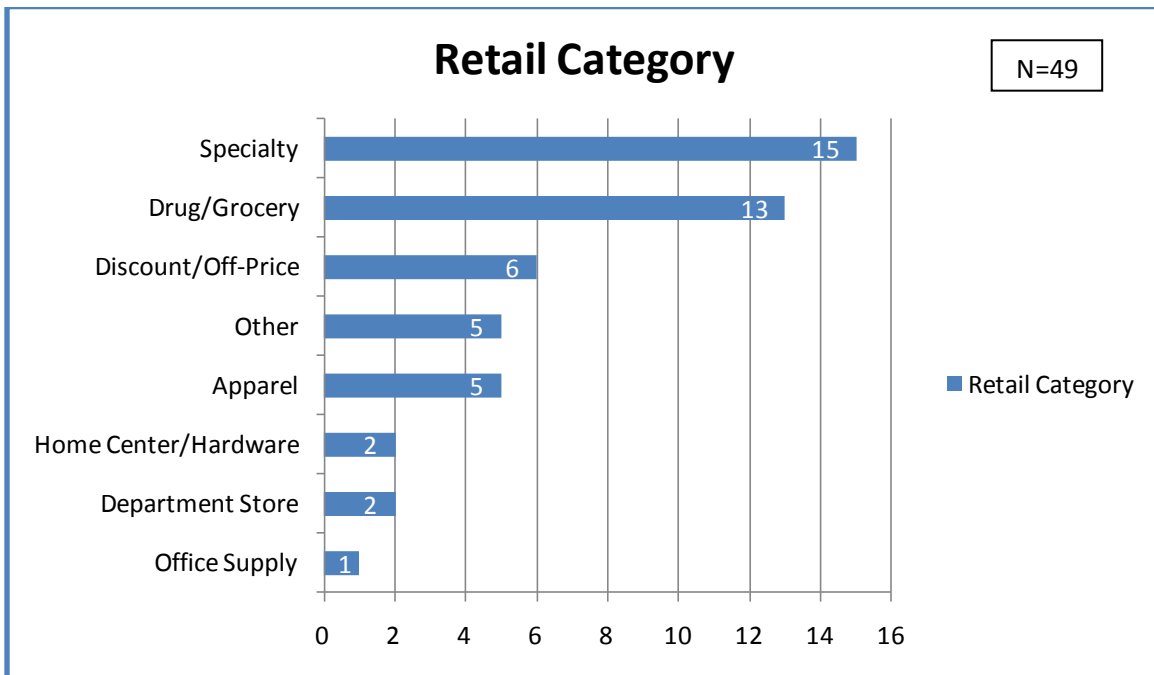
The next question asked respondents to indicate the average size of their most typical retail store in square feet.

More than one-third (36.7%, N=18) of the respondents indicate that the average size of their most typical retail store is less than 10,000 square feet. About one-quarter (26.5%, N=13) of the respondents report that their most typical store is between 10,000 square feet and 25,000 square feet in size. About one-eighth of the respondents indicate that their most typical store is either between 25,001 square feet and 50,000 square feet (14.3%, N=7) or between 50,001 square feet and 100,000 square feet (12.2%, N=6). Two of the survey participants (4.1%) report that their most typical store is larger than 100,000 square feet.



Retail Category

Next, respondents were asked to indicate what category of retail best represents their stores.



About 30 percent of the participating companies (N=15) indicate “Specialty” as the retail category that best describes their stores, while a similar number (N=13) indicate that “Drug/Grocery” best describes their stores. Six of the participating companies classify their retail stores as “Discount/Off-Price” and five as “Apparel,” while two companies are classified as “Home Center/Hardware”; two are classified as

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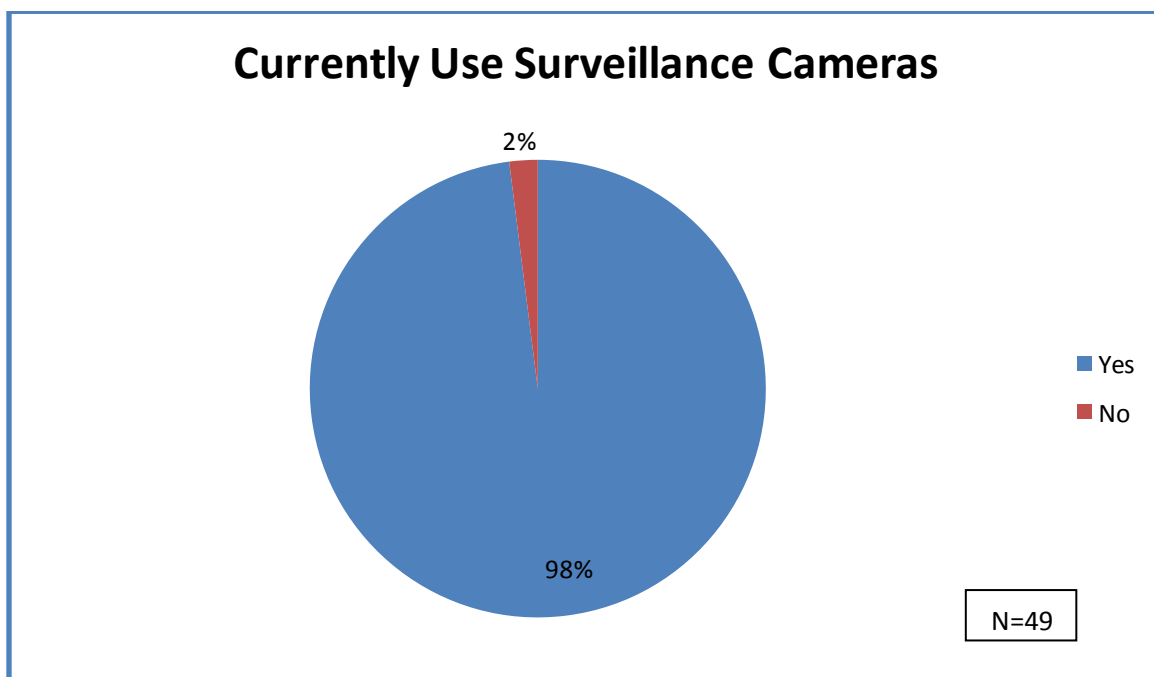
“Department Store”; and, one is classified as “Office Supply.” In addition, five stores gave “Other” classifications for their retail stores. These responses appear below.

“Other” Retail Classifications	Frequency
Closeout	1
C-Stores	1
Wine/Liquor/Beer	1
Wireless	1
<i>No response provided</i>	1

Use of Video Surveillance

Current Use of Surveillance Cameras

All respondents were first asked to indicate whether their companies currently have surveillance cameras installed inside in any of their stores. The results appear in the figure below.

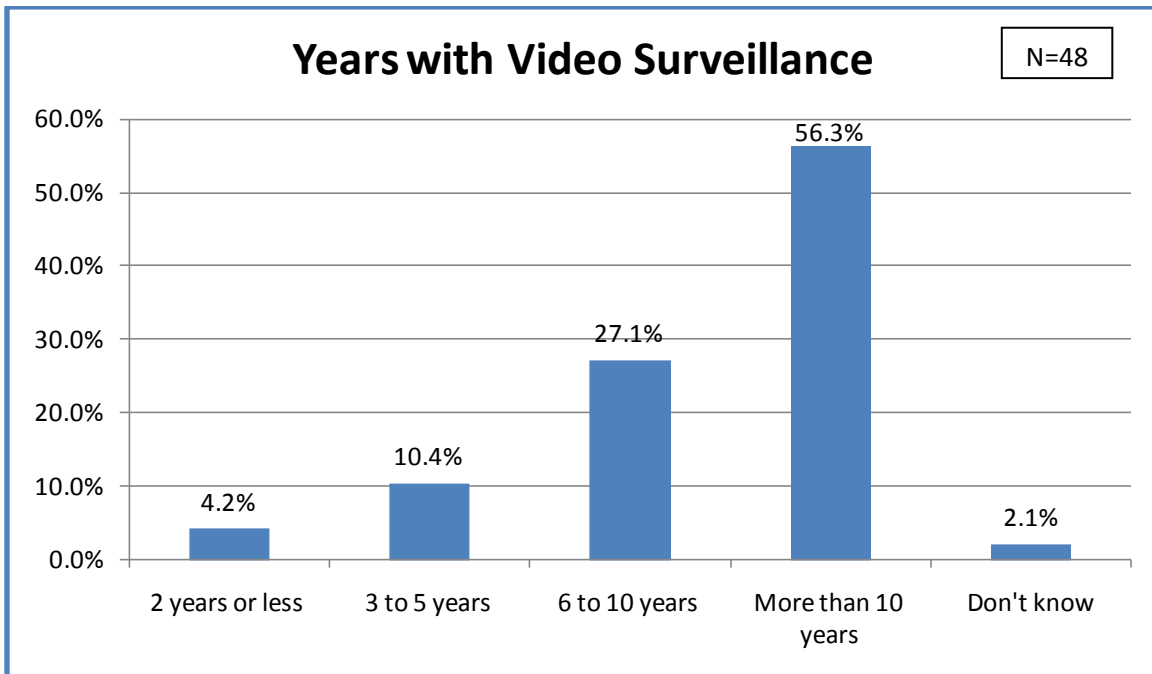


Almost all (98.0%, N=48) of the companies that participated in the survey indicate that they currently use video surveillance cameras in their retail stores.

Those respondents who indicated that they currently use video surveillance were next asked several series of questions about video surveillance in their stores, and their perceptions of video surveillance. The respondent who indicated that his or her company does not use video surveillance was asked a separate series of questions that appear later in this report.

Length of Time with Surveillance

Those respondents who indicated that their companies currently use video surveillance (N=48) were next asked how long they have used video surveillance in their retail stores. The results appear in the figure below.

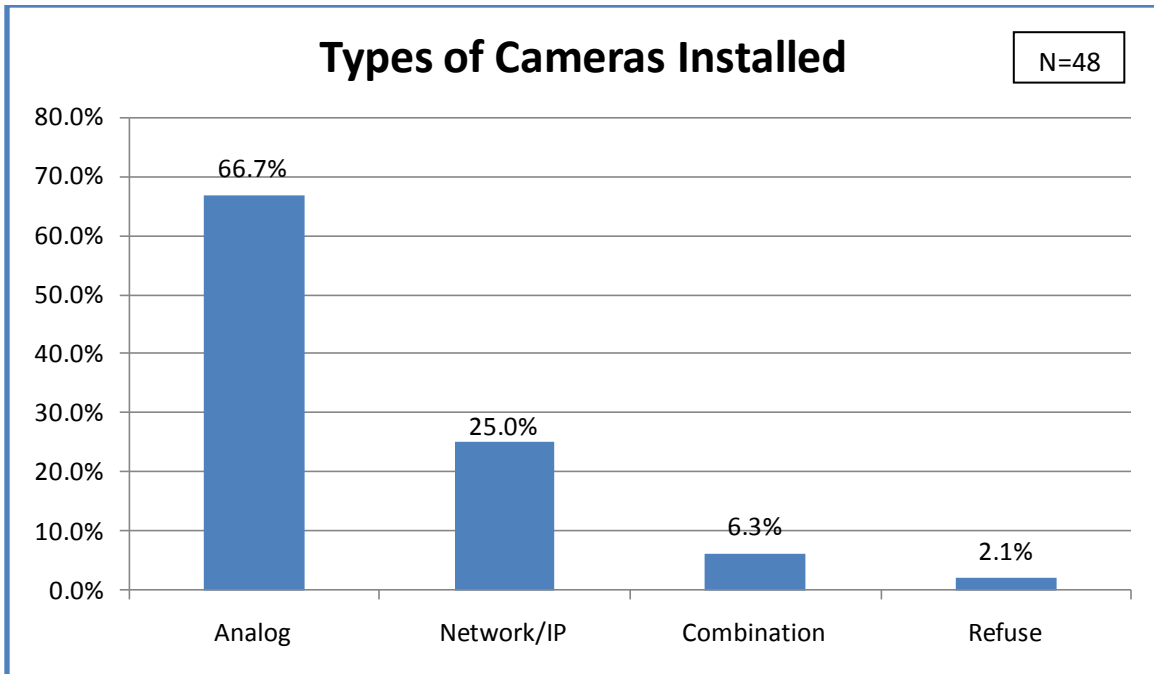


More than half (56.3%, N=27) of the respondents who currently have video surveillance in their retail stores have had surveillance for more than 10 years, and more than one-quarter (27.1%, N=13) have had surveillance for 6 to 10 years. About one-tenth (10.4%, N=5) of these respondents have had video surveillance for 3 to 5 years, and four percent (N=2) for 2 years or less.

Types of Video Surveillance

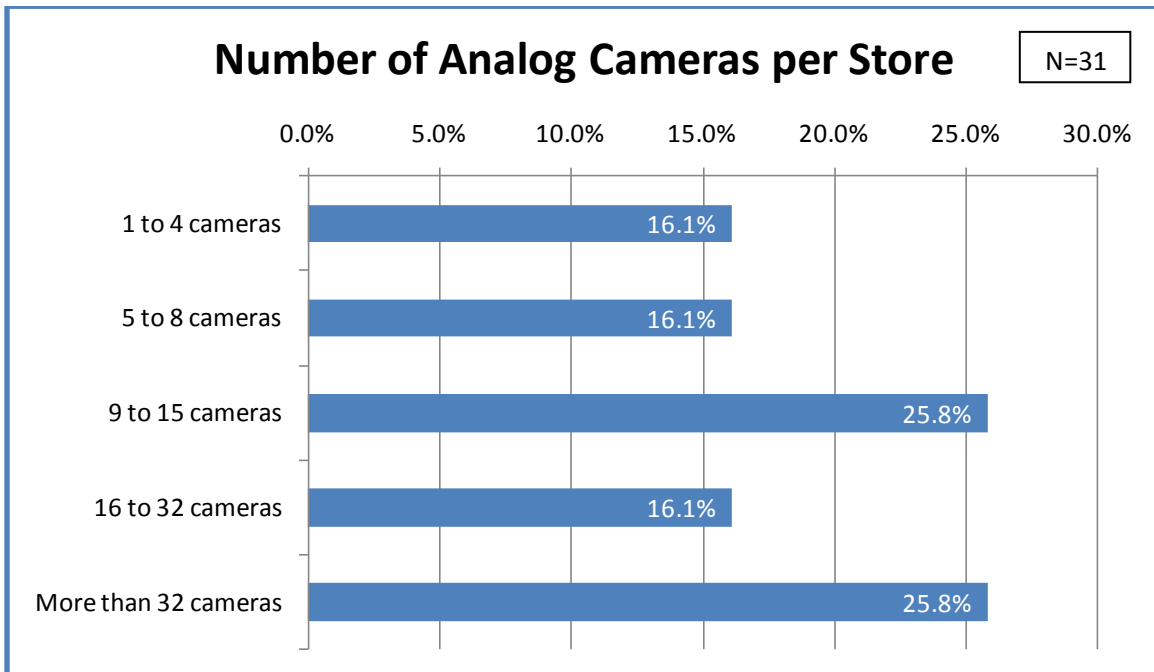
The respondents who indicated that their companies currently have video surveillance installed in their stores (N=48) were next asked what type(s) of surveillance cameras the company has installed. The responses appear in the figure below.

Two-thirds (66.7%, N=32) of the respondents whose companies currently use video surveillance have analog cameras installed. One-quarter (25.0%, N=12) of these respondents have network/IP cameras installed. Less than one-tenth (6.3%, N=3) of these respondents indicate that they have some combination of camera types installed (“Primarily analog and some network/IP cameras”; “Stand alone Digital Video Recorders using a combination of analog and digital cameras”; “We use both analog and IP”).



Number of Analog Cameras Installed

Those respondents who currently have video surveillance that includes analog cameras (N=32) were next asked how many analog cameras, on average, they have installed per store. The responses appear in the figure below.

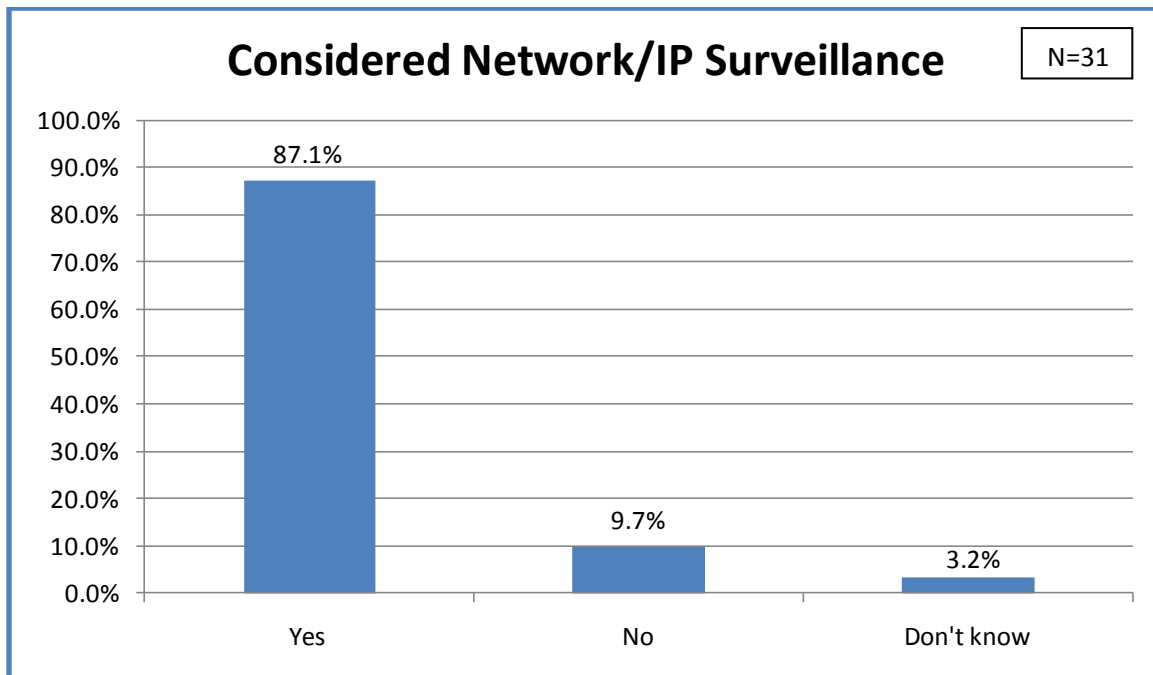


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About one-sixth (16.1%, N=5) of the respondents who currently have analog cameras installed have between 1 and 4 cameras installed in each store; between 5 and 8 cameras installed in each store; or, between 16 and 32 cameras per store. About one-quarter (25.8%, N=8) of these respondents have from 9 to 15 analog cameras installed per store, or more than 32 analog cameras installed per store.

Considered Network/IP Surveillance System

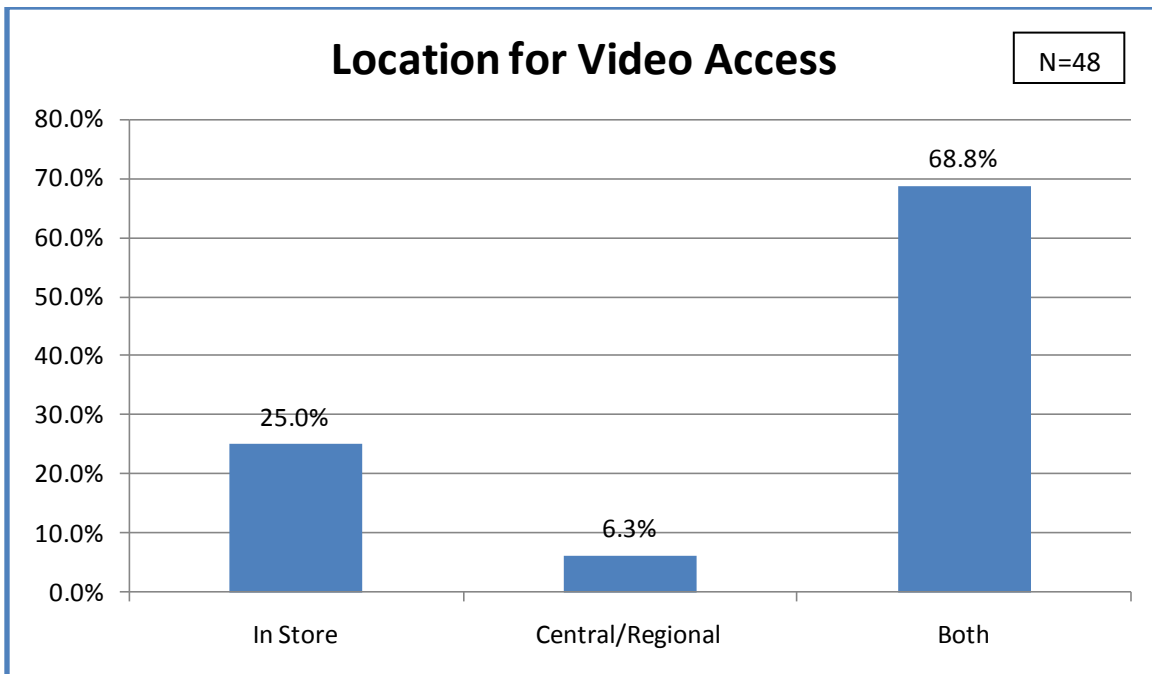
Those respondents who currently have video surveillance that includes analog cameras (N=32) were next asked whether they have considered using a network / IP camera-based surveillance system instead of analog. The responses appear in the figure below.



The vast majority (87.1%, N=27) of the respondents who indicated that they currently use analog cameras for video surveillance report that they have considered using a network/IP-based surveillance system instead. Only about one-tenth (9.7%, N=3) of these participants indicate that they have not considered network/IP surveillance systems.

Direct Access to Video

Those respondents who currently have video surveillance (N=48) were next asked whether the company has direct access to the recorded video material from the surveillance system in the store, at a central or regional location, or both. The results appear in the figure below.

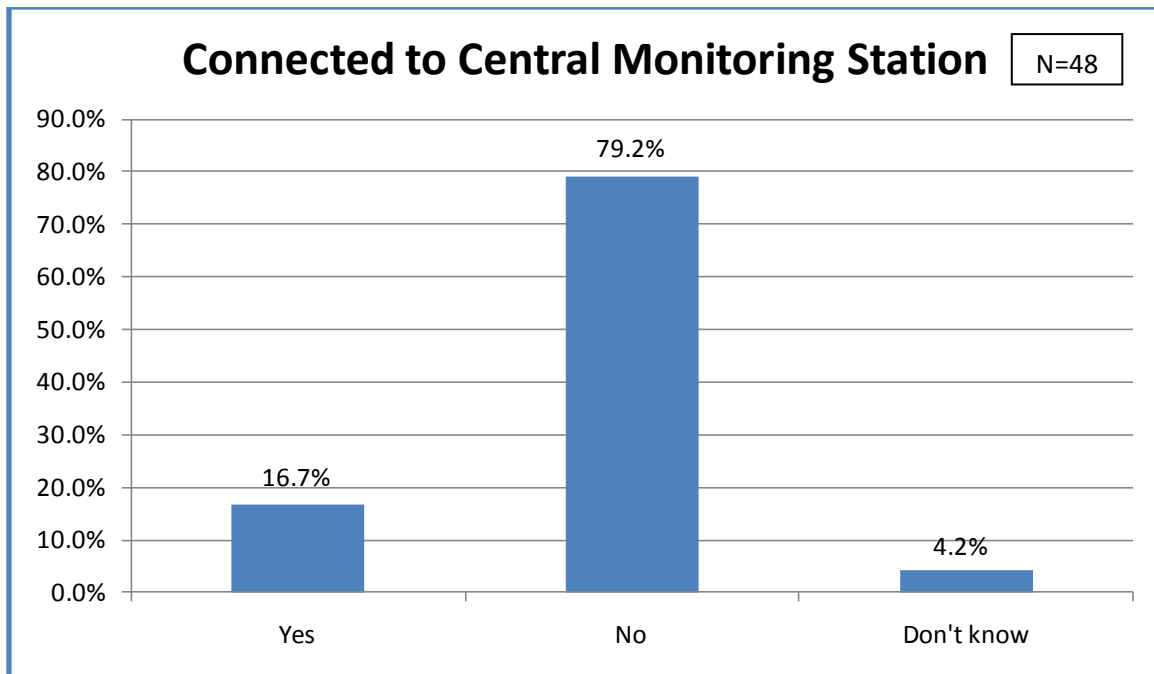


More than two-thirds (68.8%, N=33) of the respondents who currently have video surveillance in their retail stores indicate that their company has direct access to the recorded video material from the surveillance system both in the store and at a central or regional location. One-quarter (25.0%, N=12) of these participants report that they only have direct access to recorded video material in the store, while about 6 percent (N=3) report only having access at a central or regional location.

Central Monitoring Station

Those respondents who currently have video surveillance (N=48) were next asked whether their store-based video surveillance systems are connected to a central monitoring station. The results appear in the figure below.

About four-fifths (79.2%, N=38) of the respondents who have video surveillance in their stores indicate that their video surveillance systems are not connected to a central monitoring station. One-sixth (16.7%, N=8) of these participants report that their video surveillance systems are connected to a central monitoring station.



Perceptions of the Effects of Video Surveillance

Those respondents who currently have video surveillance (N=48) were next asked a series of questions about their perceptions of the effects of video surveillance in their retail stores.

Top Positive Effects

The first question in this section asked those respondents who currently have video surveillance (N=48) to indicate the top four positive effects of using video surveillance in their retail stores. The results appear in the table below.

Response	Freq	% (N=48)
Increased safety & security for the staff	39	81.3%
Better evidence material; Supportive evidence in legal matters	37	77.1%
Less internal theft	36	75.0%
Increased safety & security for the customers	26	54.2%
Less theft; Less burglary	21	43.8%
Less robbery	19	39.6%
Less damage; Less credit card fraud	4	8.3%
Other (please describe)	1	2.1%
Don't know	1	2.1%
Refused	0	0.0%

**Percentages will add up to more than 100% as respondents could choose up to 4 responses.*

Other Response	Freq
Meets other needs of the business, i.e. Merchandising, Operations, etc.	1

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Four-fifths (81.3%, N=39) of the respondents who currently have video surveillance in their stores say that “Increased safety and security for the staff” is one of the top four positive effects of having video surveillance in their stores, and a similar number (77.1%, N=37) say that “Better evidence material and supportive evidence in legal matters” is one of the top four positive effects. More than half (54.2%, N=26) of these respondents think that “Increased safety and security for the customers” is one of the top four positive effects of video surveillance. More than two-fifths (43.8%, N=21) of these participants believe that “Less theft and less burglary” are a top positive effect of video surveillance, and a similar number (39.6%, N=19) feel that “Less robbery” is a top positive effect.

Top Negative Effects

The next question in this section asked those respondents who currently have video surveillance (N=48) to indicate the top four negative effects of using video surveillance in their retail stores. The results appear in the table below.

Response	Freq	% (N=48)
Maintenance costs for the system	24	50.0%
Technical issues with the system	22	45.8%
No negative effects	18	37.5%
Image quality is poor	12	25.0%
Low ROI for system	11	22.9%
Have not been able to use recorded material as evidence	3	6.3%
Other (please describe)	2	4.2%
It interferes with the privacy of the staff	1	2.1%
It interferes with the privacy of the customers	1	2.1%
Don't know	1	2.1%
Refuse	0	0.0%

**Percentages will add up to more than 100% as respondents could choose up to 4 responses.*

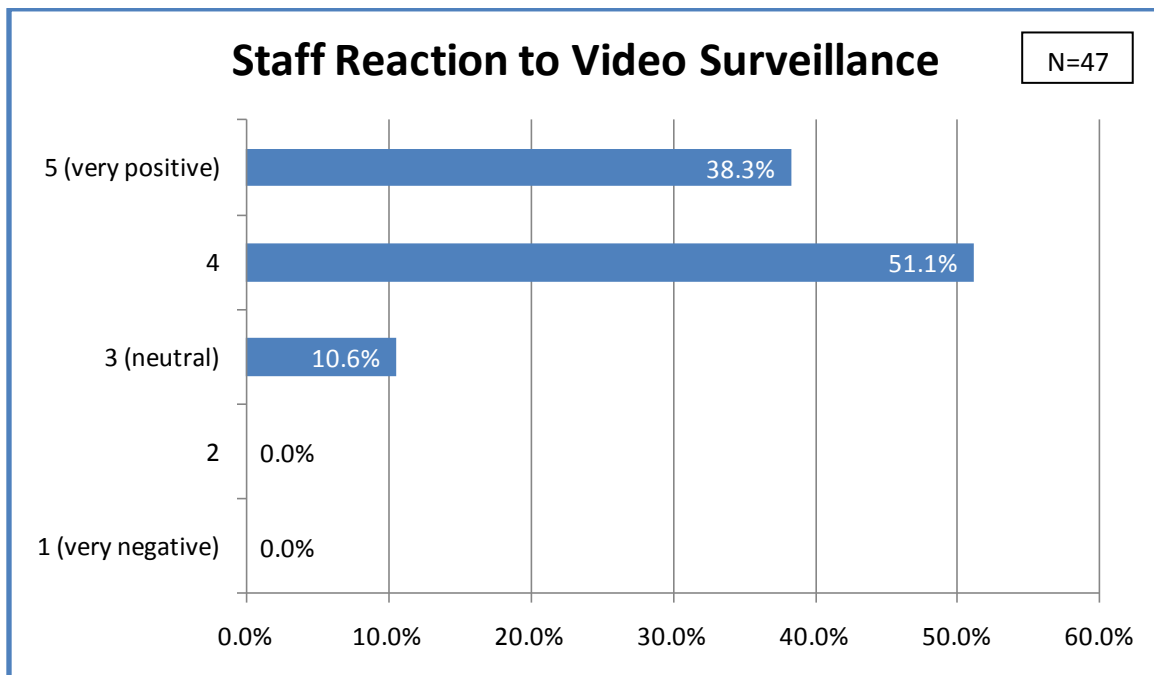
Other Responses	Freq
Aesthetics of systems and consistent changes in technology	1
Inter-operability with POS for sales/loss analytics	1

Half (50.0%, N=24) of the participants who currently have video surveillance believe that “Maintenance costs for the system” are one of the top four negative effects of using video surveillance in their retail stores, and a similar number (45.8%, N=22) believe that “Technical issues with the system” are a top negative effect. Nearly two-fifths (37.5%, N=18) of these respondents think that there are “no negative effects” to using video surveillance in their retail stores.

One-quarter (25.0%, N=12) of these participants feel that “Image quality is poor” is a top negative effect of video surveillance, and a similar number (22.9%, N=11) feel that “Low ROI for the system” is a top negative effect.

Reaction of Store Staff to Video Surveillance

Those respondents who currently have video surveillance (N=48) were next asked to rate the reaction of store staff to video surveillance in stores using a scale from 1 to 5, where 1 is “very negative,” 3 is “neutral,” and 5 is “very positive.” The results appear in the figure below.

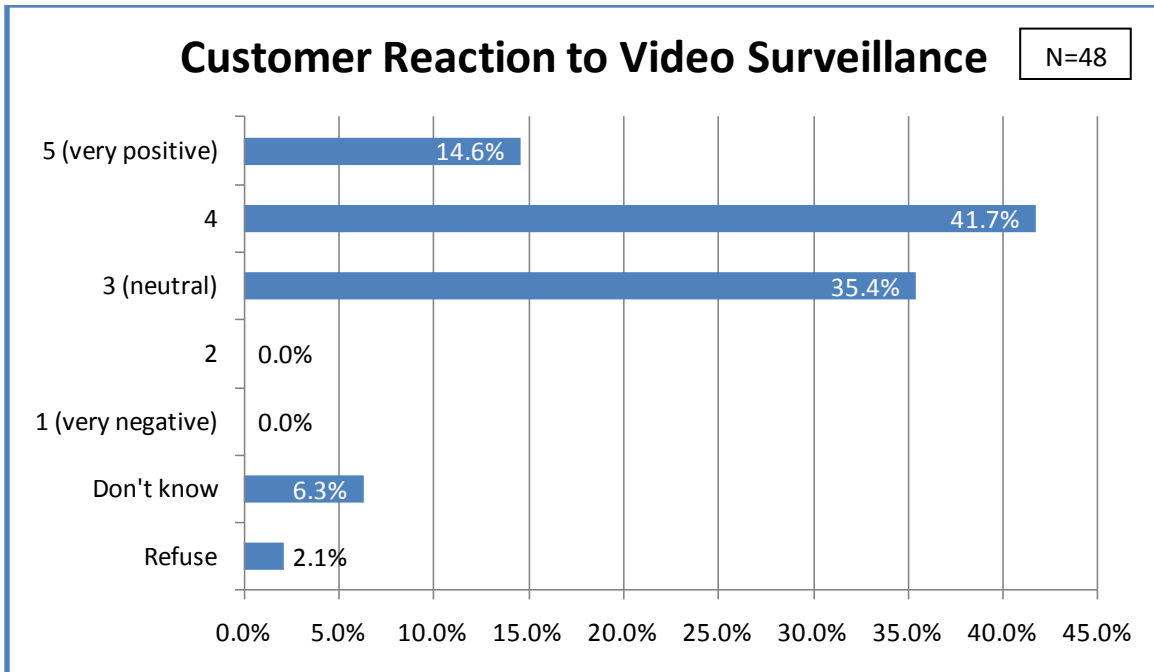


Almost all (89.4%, N=42) of the survey participants who currently have video surveillance rate the reaction of the store staff to video surveillance on the positive side of the scale. Nearly two-fifths (38.3%, N=18) of the respondents rate store staff reaction as a “5,” very positive, and about half (51.1%, N=24) rate it as a “4.” About one-tenth (10.6%, N=5) of the respondents rate staff reaction in the middle of the scale, as a “3.”

Reaction of Customers to Video Surveillance

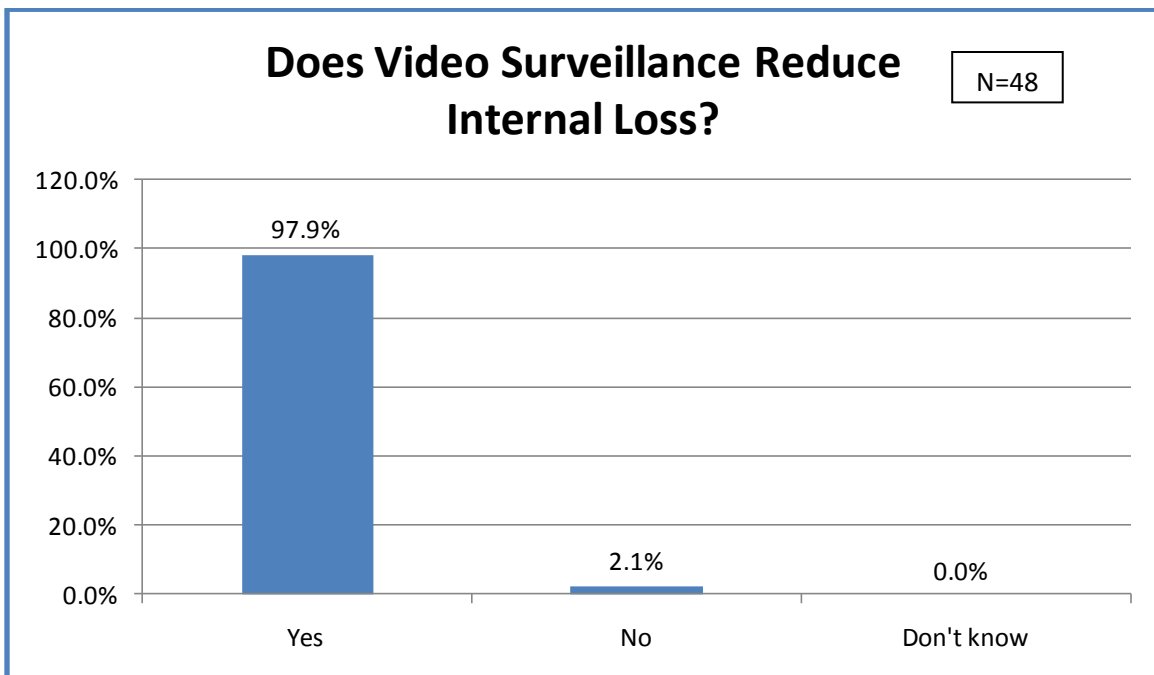
Those respondents who currently have video surveillance (N=48) were next asked to rate the reaction of customers to video surveillance in stores using a scale from 1 to 5, where 1 is “very negative,” 3 is “neutral,” and 5 is “very positive.” The results appear in the figure below.

More than half (56.3%, N=27) of the survey participants who currently have video surveillance rate the reaction of store customers to video surveillance on the positive side of the scale. About 14 percent (N=7) of the respondents rate customer reaction as a “5,” very positive, and about two-fifths (41.7%, N=20) rate it as a “4.” About one-third (35.4%, N=17) of the respondents customer reaction in the middle of the scale, as a “3.”



Usefulness of Video Surveillance: Internal Loss

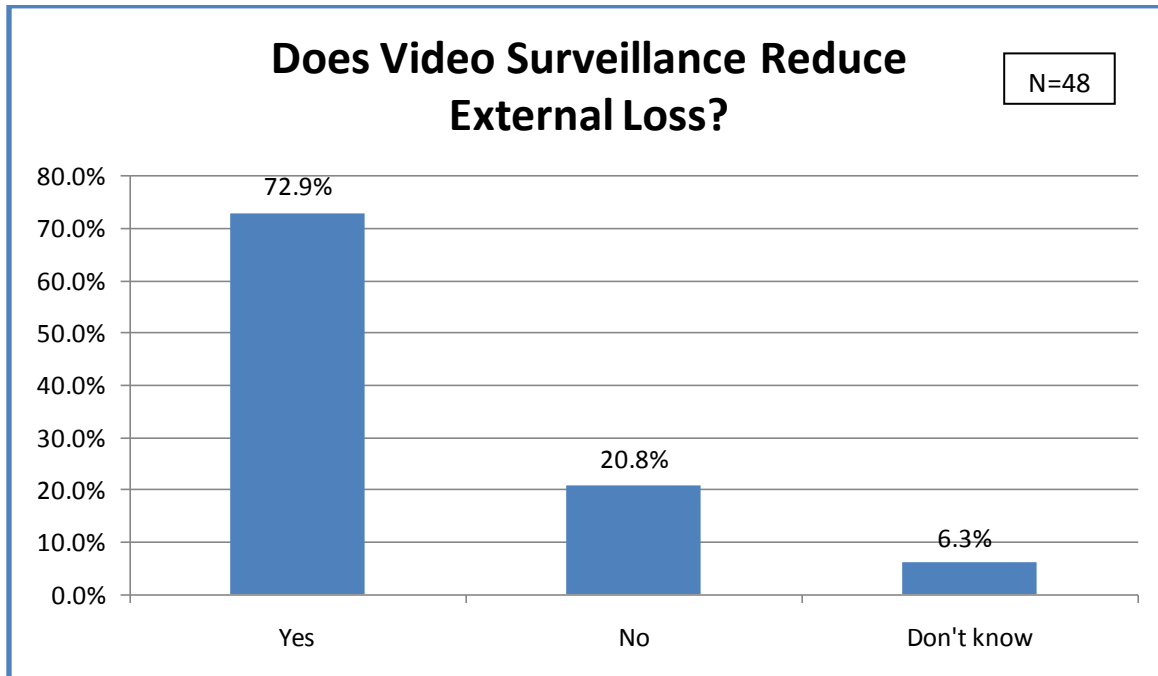
Those respondents who currently have video surveillance (N=48) were next asked whether they believe that the video surveillance in their stores reduces the number of incidents of internal loss (employee theft, etc.). The results appear in the figure below.



Almost all (97.9%, N=47) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores reduces the number of incidents of internal loss.

Usefulness of Video Surveillance: External Loss

Those respondents who currently have video surveillance (N=48) were next asked whether they believe that the video surveillance in their stores reduces the number of incidents of external loss (shoplifting, return fraud, etc.). The results appear in the figure below.

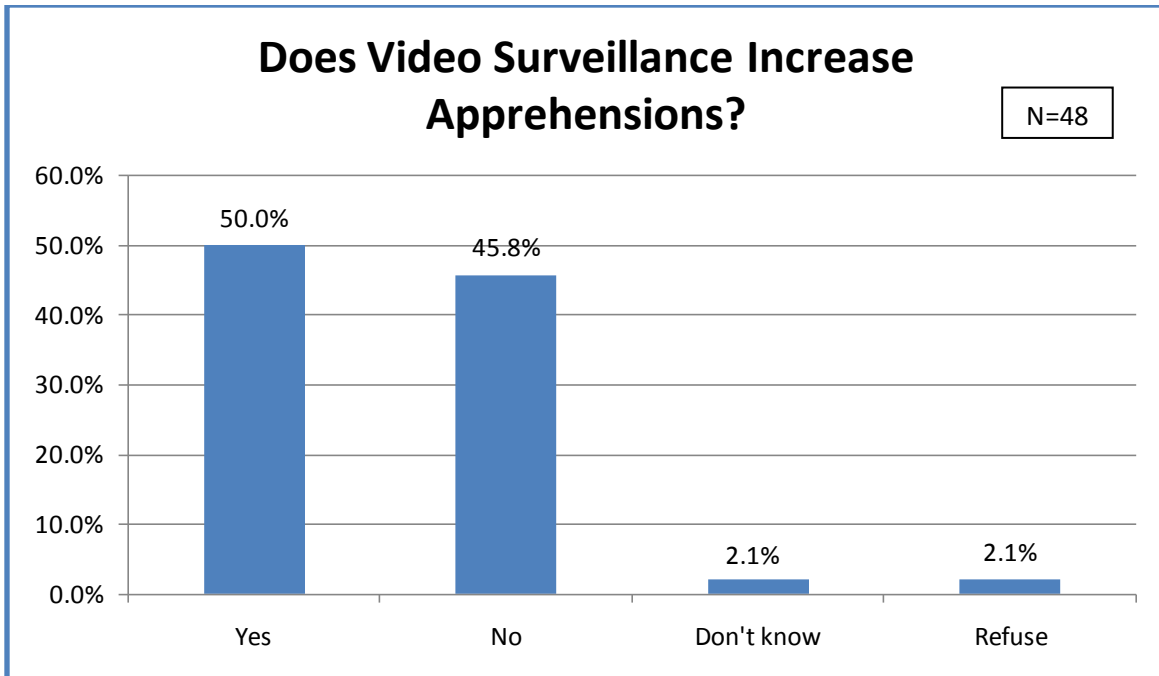


Nearly three-quarters (72.9%, N=35) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores reduces the number of incidents of external loss.

Usefulness of Video Surveillance: Apprehensions

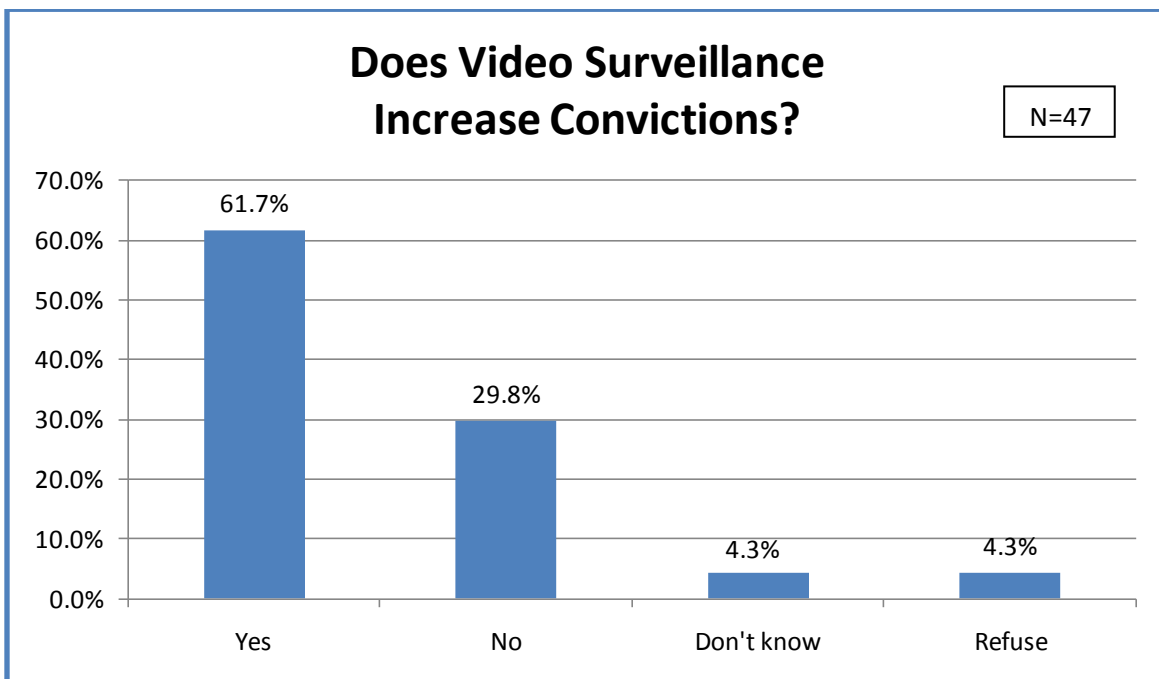
Those respondents who currently have video surveillance (N=48) were next asked whether they believe that the video surveillance in their stores increases the number of theft apprehensions. The results appear in the figure below.

One-half (50.0%, N=24) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores increases the number of theft apprehensions.



Usefulness of Video Surveillance: Convictions

Those respondents who currently have video surveillance (N=48) were next asked whether they believe that the video surveillance in their stores increases the number of apprehensions that result in convictions. The results appear in the figure below.



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Three-fifths (61.7%, N=29) of the respondents who currently have video surveillance in their stores believe that video surveillance in their stores increases the number of apprehensions that result in convictions.

Network/IP Surveillance Systems

The next series of questions in the survey were specific to network/IP surveillance systems.

Biggest Obstacle in Adopting Network/IP Camera Systems

Those respondents who currently have video surveillance (N=48) were next asked what the biggest obstacle in adopting network / IP camera systems is when considering new video surveillance technology for their stores. The response appears in the table below.

Response	Freq	% (N=48)
Cost	20	41.7%
Information Technology Department collaboration	10	20.8%
Other priorities within the organization	7	14.6%
Not enough information to support – no ROI model or Total Cost of Ownership presented	6	12.5%
Other (please describe)	4	8.3%
Don't know	1	2.1%
Integrator recommendations	0	0.0%
Don't understand the technology	0	0.0%

Response	Freq
Bandwidth issues, The pipeline is too small today	1
Network bandwidth availability, the network requires more capacity to move digital video through it	1
No significant obstacles	1
None, using without issue	1

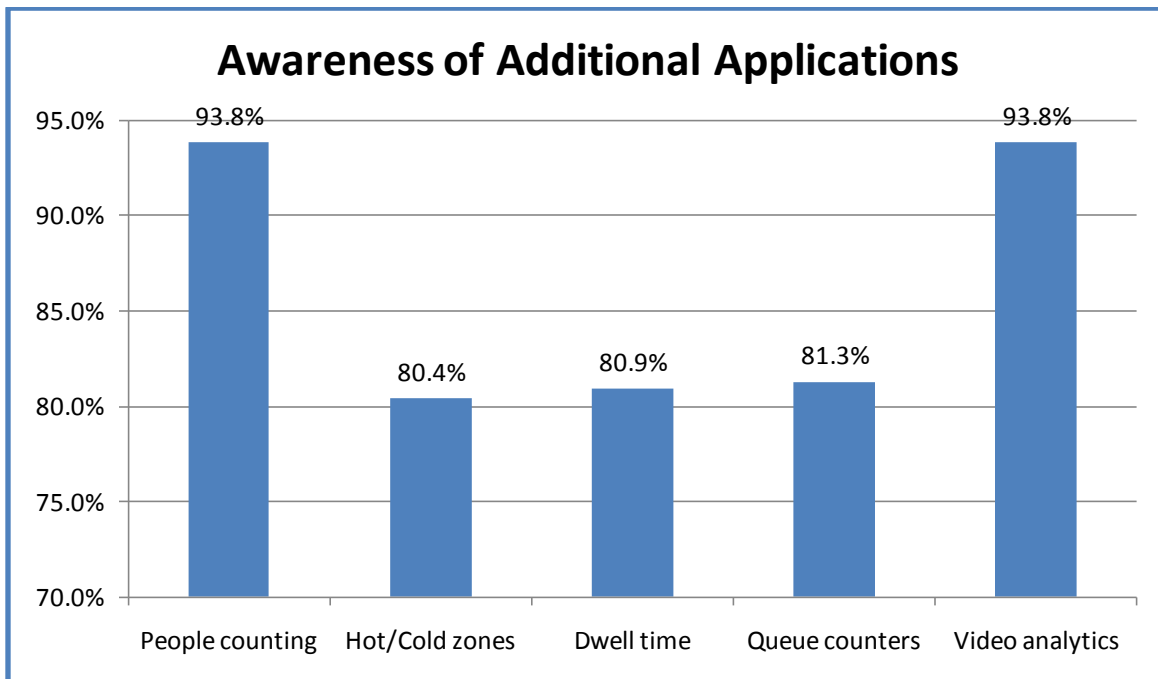
About two-fifths (41.7%, N=20) of the respondents who have video surveillance in their stores believe that “Cost” is the biggest obstacle in adopting network/IP camera systems when considering new video surveillance technology for their stores. One-fifth (20.8%, N=10) of these participants feel that “Information Technology Department collaboration” is the biggest obstacle to adopting network/IP systems. Approximately 15 percent (N=7) of participants believe that “Other priorities in the organization” are the biggest obstacle to adopting network/IP systems, and a similar number (12.5%, N=6) believe that there is “Not enough information to support” adopting these systems, such as a ROI model or Total Cost of Ownership.

In addition, two respondents note issues related to network bandwidth availability for a network/IP surveillance system, and two indicate that they do not believe there are any significant obstacles to these systems.

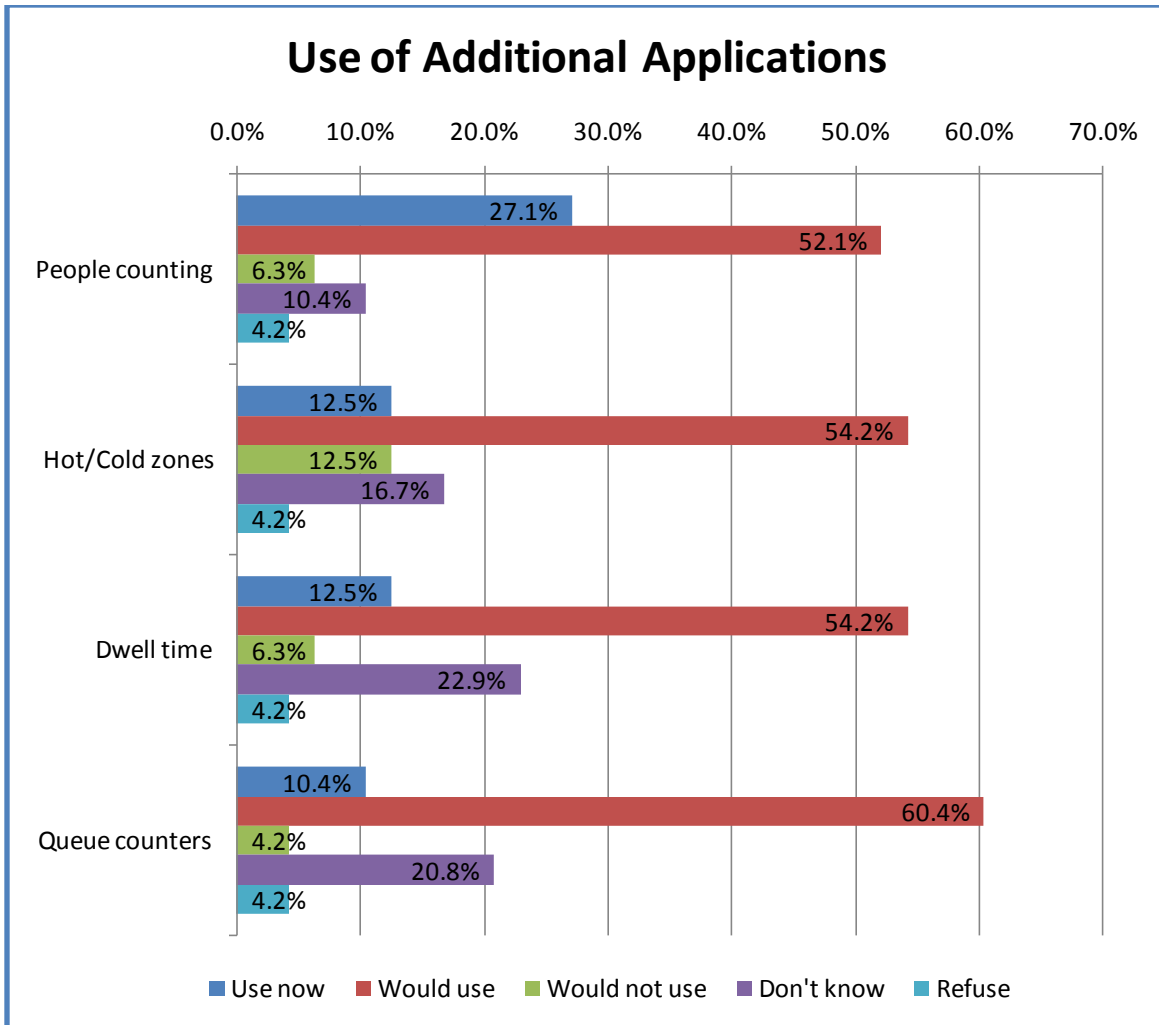
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Network/IP Systems: Additional Applications

Next, those respondents who currently have video surveillance (N=48) were asked a series of questions about network/IP systems applications beyond security and loss prevention. First, the respondents were asked to indicate if they are aware of each of the applications. Then, they were asked to indicate whether any of their stores already use the application, if the company may use them in the future, or if they think the company would not use them. The applications assessed are: People counting; Hot / cold zones; Dwell time; Queue counters; and, Video analytics.



Almost all of the participants (93.8%) who currently have video surveillance are aware of the “People counting” and “Video analytics” applications available with network/IP surveillance systems. More than four-fifths of these respondents are aware of “Hot/Cold zones” (80.4%); “Dwell time” (80.9%); and, “Queue counters” (81.3%).



The most widely used application among current video surveillance users is “People counting.” More than one-quarter (27.1%, N=13) of these participants say that they “Already use” this application. In addition, more than one-half (52.1%, N=25) of the respondents indicate that they “May use” this application in the future.

Similar percentages of these respondents indicate that they already use “Hot/Cold zones” (12.5%, N=6) and “Dwell time” (12.5%, N=6) applications. Additionally, more than one-half (54.2%, N=26) of the respondents also say they may use each of these applications in the future.

Only about one-tenth (10.4%, N=5) of these participants say they already use “Queue counters.” Three-fifths (60.4%, N=29) of these respondents say they may use this application in the future.

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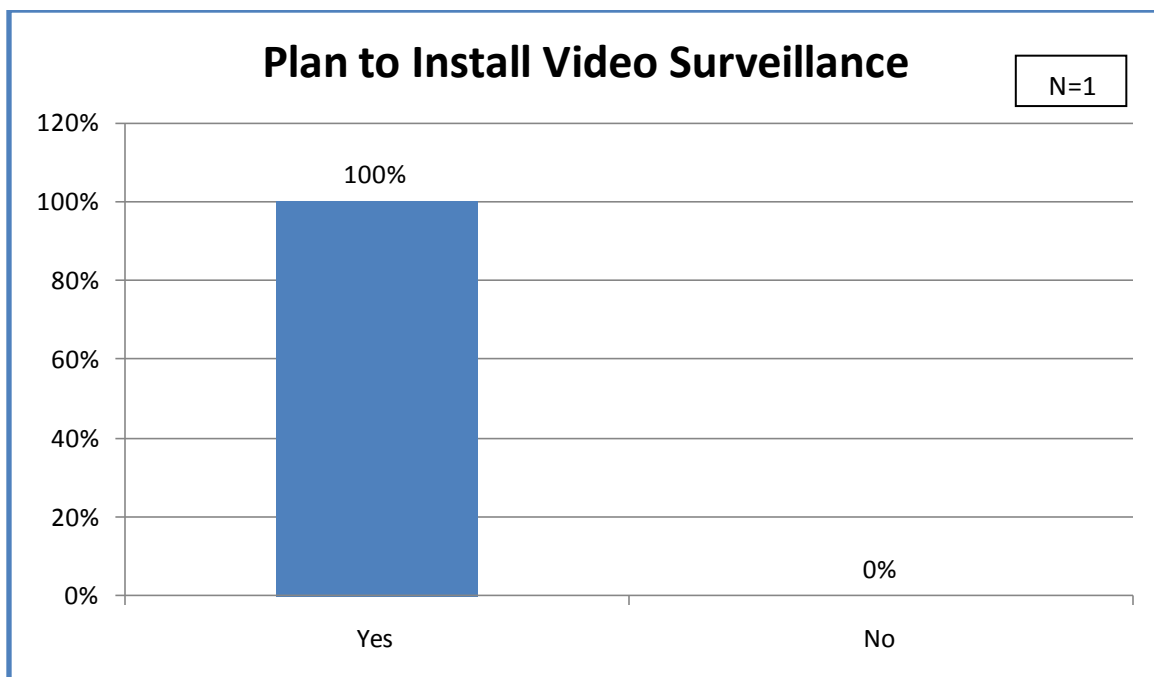
Reasons for Not Currently Using Video Surveillance

The respondent who indicated that his or her stores do not currently use video surveillance was next asked why the company does not use video surveillance. The responses appear in the table below; please note that multiple responses were permitted.

Response	Freq	%(N=1)
Don't see a need for video surveillance	0	0.0%
Too expensive / Costs too much	1	100.0%
Not a sufficient ROI to justify use	0	0.0%
Negative perceptions of customers (privacy issues, etc.)	1	100.0%
Negative perceptions of staff (privacy issues, etc.)	0	0.0%
Legislation / laws limit the use of video surveillance	0	0.0%
Do not have the expertise or staff to maintain or use properly	0	0.0%
Other (please describe)	0	0.0%
Don't know	0	0.0%
Refuse	0	0.0%

Plan to Install Video Surveillance

The respondent who indicated that his or her stores do not currently use surveillance was next asked whether the company plans to install video surveillance in any of their stores in the next three years.



The one respondent whose company does not currently use surveillance does plan to install video surveillance in the next three years.

Reasons for Installing Video Surveillance

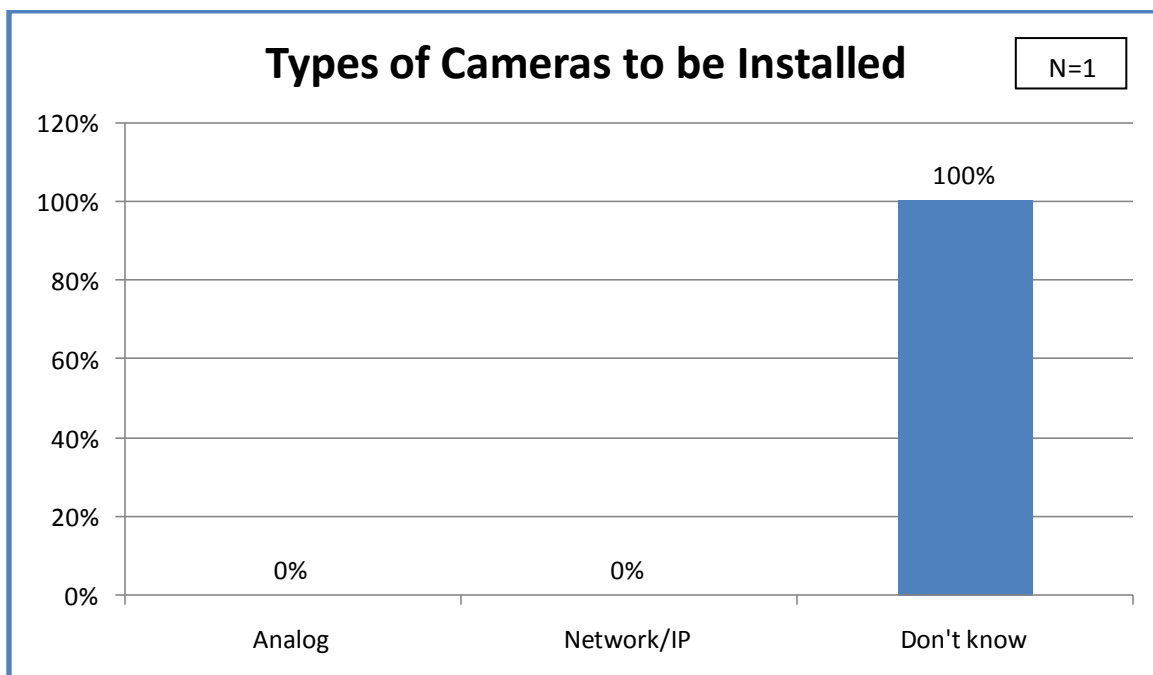
The respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was next asked to indicate the four primary reasons the company is planning to install video surveillance in their stores. The responses appear in the table below.

Response	Freq	% (N=1)
Prevent/investigate robberies	0	0.0%
Prevent/investigate theft	1	100.0%
Prevent/investigate burglaries	0	0.0%
Prevent/investigate damages	0	0.0%
Prevent/investigate credit card fraud	0	0.0%
Prevent/investigate internal theft	0	0.0%
Increase safety & security for staff	0	0.0%
Increase safety & security for customers	0	0.0%
Meet legal requirements such as those for risk management	0	0.0%
Other	0	0.0%

The respondent indicates that his or her company is planning to install video surveillance in order to “Prevent/investigate theft.”

Planned Types of Surveillance to Install

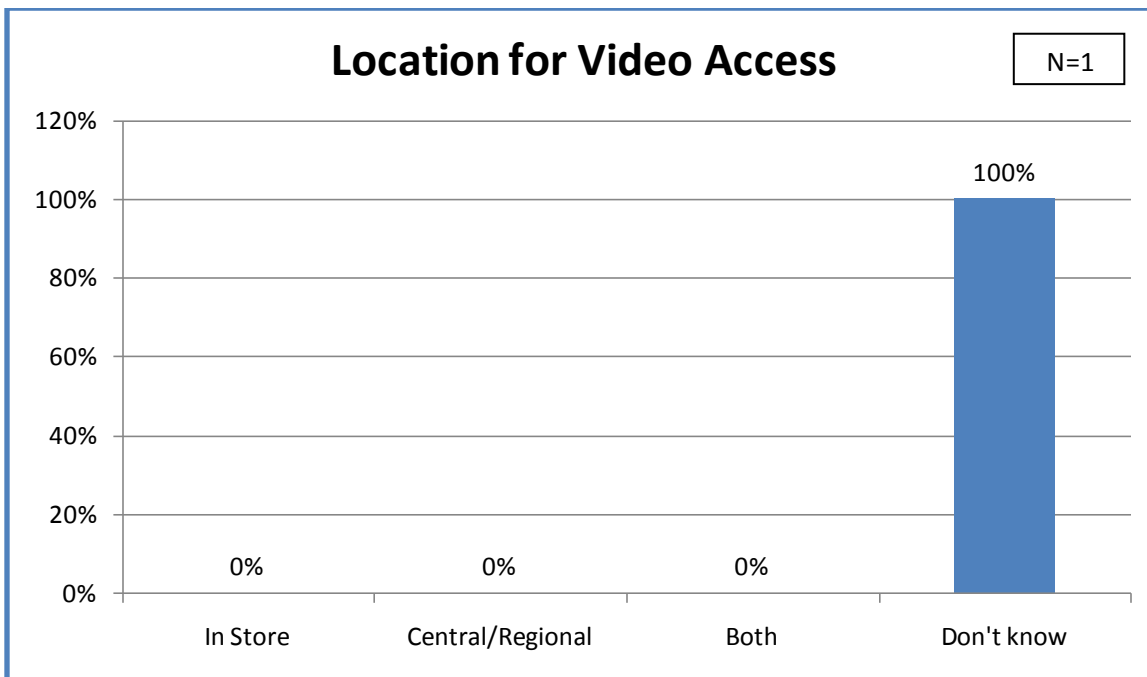
The respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was next asked what type of surveillance cameras the company plans to install. The responses appear in the figure below.



The respondent does not know what type of cameras his or her company plans to install.

Direct Access to Video

The respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was next asked whether the company plans to have direct access to the recorded video material from the surveillance system in the store, at a central or regional location, or both. The results appear in the figure below.

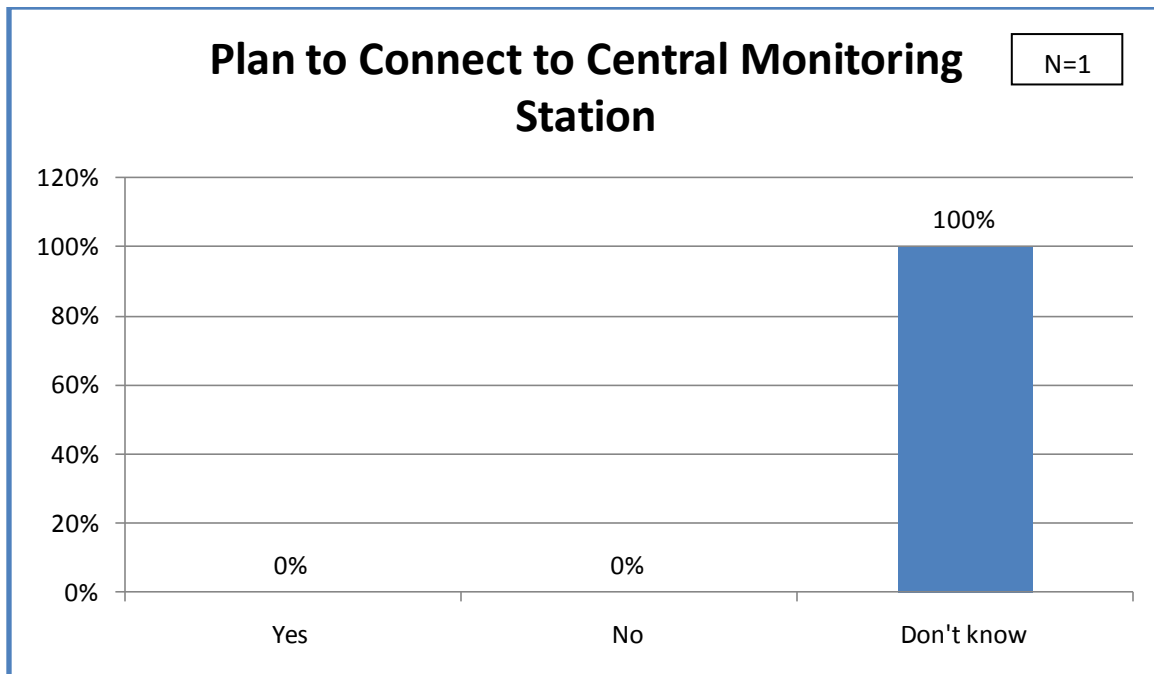


The respondent does not know whether his or her company plans to have direct access to the recorded video material from the surveillance system in the store, at a central or regional location, or both.

Central Monitoring Station

The respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was next asked whether they plan to connect their video surveillance system to a central monitoring station. The results appear in the figure below.

The respondent does not know if his or her company plans to connect their video surveillance system to a central monitoring station.



Network/IP Surveillance Systems

The next series of questions in the survey were specific to network/IP surveillance systems.

Biggest Obstacle in Adopting Network/IP Camera Systems

The respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was asked what the biggest obstacle in adopting network / IP camera systems is when considering new video surveillance technology for his or her stores. The response appears in the table below.

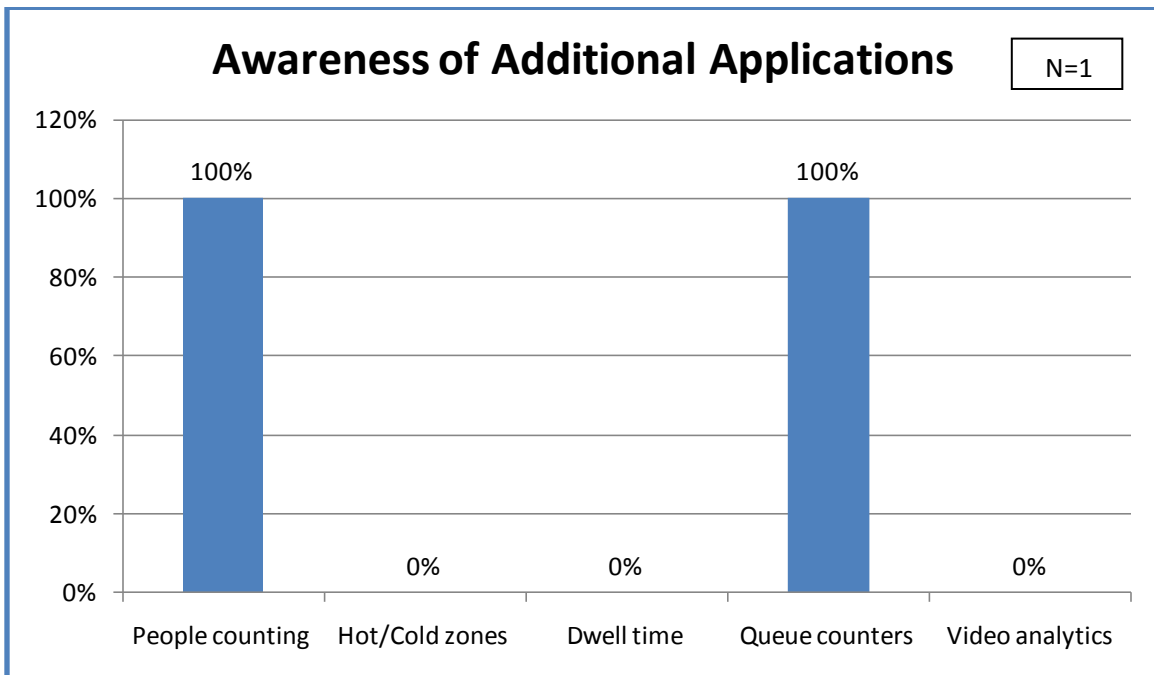
Response	Freq	% (N=1)
Other priorities within the organization	1	100.0%
Integrator recommendations	0	0.0%
Information Technology Department collaboration	0	0.0%
Don't understand the technology	0	0.0%
Cost	0	0.0%
Not enough information to support – no ROI model or Total Cost of Ownership presented	0	0.0%
Other (please describe)	0	0.0%
Don't know	0	0.0%

The respondent believes that the biggest obstacle in adopting network/IP camera systems when considering new video surveillance technology is “Other priorities within the organization.”

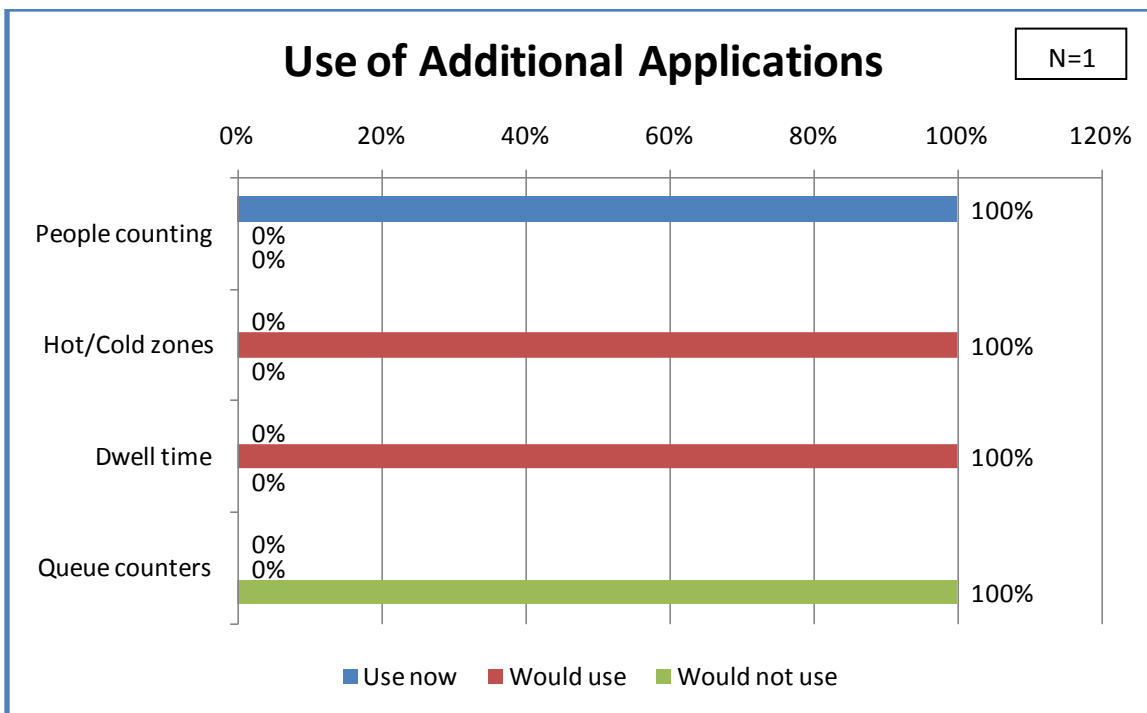
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Network/IP Systems: Additional Applications

Next, the respondent who indicated that his or her company plans to install video surveillance in their stores in the next three years was asked a series of questions about network/IP systems applications beyond security and loss prevention. First, the respondent was asked to indicate if he or she is aware of each of the applications. Then, he or she was asked to indicate whether any of his or her stores already use the application, if the company may use them in the future, or if he or she thinks the company would not use them. The applications assessed are: People counting; Hot / cold zones; Dwell time; Queue counters; and, Video analytics.



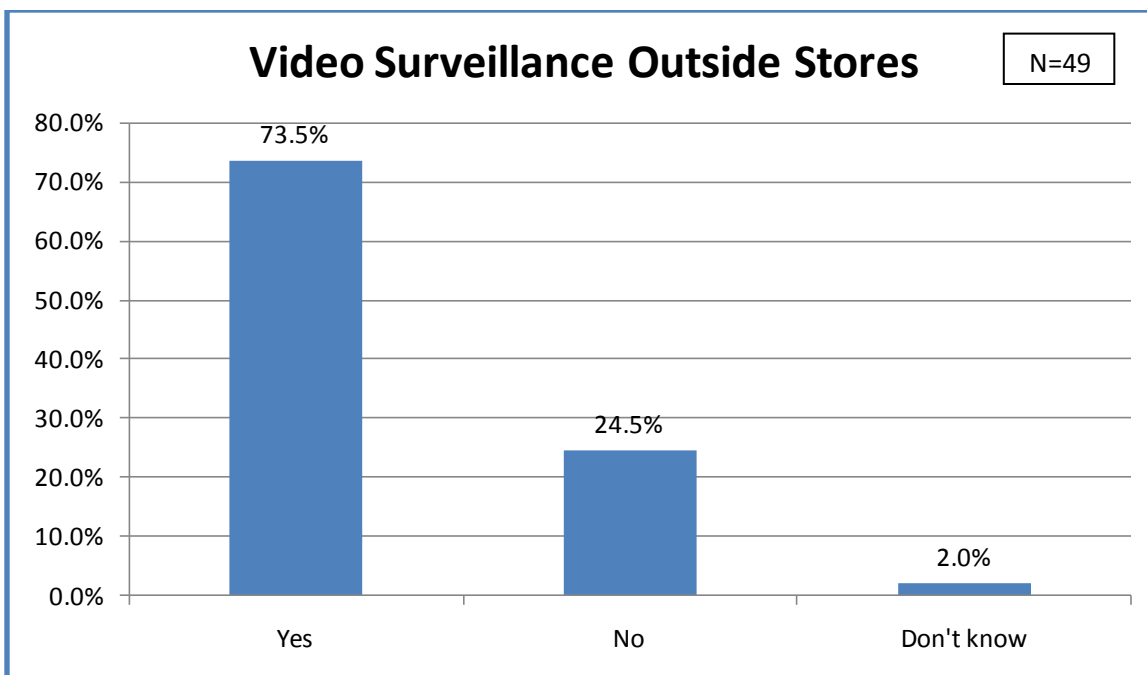
The respondent is aware of the “People counting” and “Queue counters” applications, but is not aware of “Hot/cold zones”; “Dwell time”; or, “Video analytics.”



The respondent indicates that his or her company is currently using “People counting” applications, and that they may use “Hot/cold zones” and “Dwell time” applications in the future. He or she does not believe the company would use “Queue counters.”

Video Surveillance Outside of Stores

All respondents were next asked whether any of their stores have video surveillance cameras outside of the store (in parking lots, near exits or entrances, etc.). The responses appear below.



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Nearly three-quarters (73.5%, N=36) of the survey participants indicate that their stores have video surveillance cameras outside of the store (in parking lots, near exits or entrances, etc.).

Additional Comments

Finally, all respondents were asked if they would like to share any additional comments about video surveillance. Eight of the participants provided comments which appear below.

- Cameras outside cause litigation issues.
- For me with a small LP staff, technology is huge and our Executive team understands the need for video in all locations including CEO, CFO, and Store Planning. It has been a big win for us to cover 99% of the store with CCTV
- Last year I networked 168 stores to the Corporate office. Access to this information via my personal laptop when traveling or on request by law enforcement has been invaluable.
- Testing is an issue to obtain the necessary band width necessary from IT (Re: Q19). No safety concerns were listed here, and they have proven to be an important factor (Re: Q22).
- The more other areas of the business are able to utilize systems for their needs, the greater the ROI and less resistance to the spend.
- Too many choices. Because of that, there is no easy way to integrate all LP systems together into one dashboard or UI. Some systems do everything but butter your bread and in the end, some LP folks have the aptitude to use that, others not.
- Video surveillance is contained within the store, however we provide coverage of the external receiving area and some external gates but is not consistent with current operating standards.
- We are getting into the advanced analytics such as facial recognition and other things that are not even mentioned in the survey.

Additional Analyses

The following section presents the results of a series of bivariate analyses.

Image Quality Cited as a Negative Effect by Type of Cameras Installed

The first analysis examines the relationship between the type of cameras that respondents have installed in their stores and whether they cited poor image quality as one of the top negative effects of using video surveillance.

Indicate “Image Quality is Poor” as one of the Top 4 Negative Effects of Using Video Surveillance	Analog (N=32)	Network/IP (N=12)	Combination (N=3)
Yes	31.3%	0.0%	66.7%
No	68.7%	100.0%	33.3%

Type of Cameras Installed	Indicate “Image Quality is Poor” as one of the Top 4 Negative Effects of Using Video Surveillance (N=12)
Analog	83.3%
Network/IP	0.0%
Combination of Analog & Network/IP	16.7%

Of the 12 respondents who indicate that “Image Quality is Poor” is one of the top four negative effects of using video surveillance, more than four-fifths (83.3%) have analog cameras installed in their stores, and an additional one-sixth (16.7%) have some combination of analog and network/IP cameras. None of these 12 respondents have only network/IP cameras installed.

Store & System Characteristics by Retail Type

The next analyses examine survey responses by store type. The categories of retailers used in these analyses are “Apparel/Shoes,” “Department Stores,” “Discount/Off-price,” “Drug/Grocery,” “Home Center/Hardware,” “Office Supply,” “Specialty,” and “Other.”

Average Size of Store by Retail Type

Store Size (sq. ft.)	Apparel Shoes (N=5)	Dept. Store (N=2)	Discount Off-price (N=6)	Drug Grocery (N=13)	Home Hardware (N=2)	Office Supply (N=1)	Specialty (N=15)	Other (N=5)
Less than 10,000	60.0%	0.0%	50.0%	15.4%	50.0%	0.0%	46.7%	40.0%
10,000 to 25,000	40.0%	0.0%	16.7%	23.1%	0.0%	100.0%	26.7%	40.0%
25,001 to 50,000	0.0%	0.0%	33.3%	38.5%	0.0%	0.0%	0.0%	0.0%
50,001 to 100,000	0.0%	50.0%	0.0%	23.1%	0.0%	0.0%	13.3%	0.0%
More than 100,000	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Don’t know	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%
Refuse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	20.0%

Most of the retailers in this study have stores with an average size of 50,000 square feet or less. The two “Department Store” retailers that responded to the survey have larger stores, as does one of the “Home Center/Hardware” respondents.

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Type of Cameras Installed by Retail Type

Types of Cameras	Apparel Shoes (N=5)	Dept. Store (N=2)	Discount Off-price (N=6)	Drug Grocery (N=13)	Home Hardware (N=2)	Office Supply (N=1)	Specialty (N=14)	Other (N=4)
Analog	60.0%	100.0%	66.7%	61.5%	100.0%	0.0%	85.7%	25.0%
Network/IP	40.0%	0.0%	33.3%	30.8%	0.0%	0.0%	7.1%	75.0%
Combination	0.0%	0.0%	0.0%	7.7%	0.0%	100.0%	7.1%	0.0%

The retailers in this study are more likely to have “Analog” than “Network/IP” cameras. All of the “Department Stores” and “Home Center/Hardware” stores use analog cameras. More than four-fifths (85.7%) of the “Specialty” retailers use analog cameras while two-thirds (66.7%) of the “Discount/Off-price” retailers and three-fifths of the “Apparel/Shoes” (60.0%) retailers and “Drug/Grocery” store (61.5%) retailers use analog cameras.

Two-fifths (40.0%) of “Apparel/Shoe” retailers report using “Network/IP” cameras. About one-third of “Discount/Off-price” (33.3%) retailer respondents and “Drug/Grocery” store (30.8%) respondents indicate use of “Network/IP” cameras. Three-quarters (75.0%) of respondents who classified their retail type as “Other” also report use of “Network/IP” cameras.

Number of Analog Cameras Installed by Retail Type

Number of Analog Cameras per Store	Apparel Shoes (N=2)	Dept. Store (N=2)	Discount Off-price (N=4)	Drug Grocery (N=8)	Home Hardware (N=2)	Specialty (N=12)	Other (N=1)
1 to 4 cameras	0.0%	0.0%	25.0%	0.0%	0.0%	33.3%	0.0%
5 to 8 cameras	50.0%	0.0%	25.0%	0.0%	0.0%	25.0%	0.0%
9 to 15 cameras	50.0%	0.0%	50.0%	25.0%	0.0%	16.7%	100.0%
16 to 32 cameras	0.0%	50.0%	0.0%	25.0%	50.0%	8.3%	0.0%
More than 32 cameras	0.0%	50.05	0.0%	50.0%	50.0%	16.7%	0.0%

The retailers that indicated that they have analog cameras installed were asked to indicate the average number of cameras installed in each store. “Department Stores” and “Home Center/Hardware” retailers have more analog cameras installed per store than other types of retailers. Each of these types of retailers (that also have the largest size stores on average) has 16 or more cameras installed in each of their stores. Three-quarters (75.0%) of the “Drug/Grocery” retailers with an analog system have 16 or more analog cameras installed in their stores. “Apparel/Shoes,” “Discount/Off-price,” and “Specialty” retailers with analog systems have the fewest average number of cameras installed per store. At least half of the retailers in each of these three retail categories have eight or fewer cameras per store.

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Considered Network/IP Surveillance System by Retail Type

Considered Network/IP	Apparel Shoes (N=2)	Dept. Store (N=2)	Discount Off-price (N=4)	Drug Grocery (N=8)	Home Hardware (N=2)	Specialty (N=12)	Other (N=1)
Yes	100.0%	100.0%	100.0%	100.0%	100.0%	66.7%	100.0%
No	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%
Don't know	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%

The next analysis examines whether the retailers with analog cameras in each retail category have considered installing a “Network/IP” surveillance system. Almost all of the retailers with analog camera systems have considered installing a “Network/IP” surveillance system in their stores. However, one-quarter (25.0%) of the retailers in the “Specialty” retail category indicate that they have not considered a “Network/IP” system.

Connected to Central Monitoring by Retail Type

Connected to Central Monitoring	Apparel Shoes (N=5)	Dept. Store (N=2)	Discount Off-price (N=6)	Drug Grocery (N=13)	Home Hardware (N=2)	Office Supply (N=1)	Specialty (N=14)	Other (N=5)
Yes	20.0%	0.0%	0.0%	30.8%	0.0%	0.0%	14.3%	20.0%
No	80.0%	100.0%	100.0%	69.2%	100.0%	100.0%	78.6%	60.0%
Don't know	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.1%	20.0%

Very few of the respondents’ store-based video surveillance systems are connected to a central monitoring station. The retail category with the highest percentage of respondents whose store-based systems are connected to a central monitoring station is “Drug/Grocery” (30.8%).

Video Surveillance Outside Stores by Retail Type

Video Outside Stores	Apparel Shoes (N=5)	Dept. Store (N=2)	Discount Off-price (N=6)	Drug Grocery (N=13)	Home Hardware (N=2)	Office Supply (N=1)	Specialty (N=15)	Other (N=5)
Yes	40.0%	50.0%	66.7%	100.0%	50.0%	100.0%	66.7%	80.0%
No	60.0%	50.0%	33.3%	0.0%	50.0%	0.0%	26.7%	20.0%
Refused	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%

The final analysis examines the use of video surveillance cameras outside of stores (in parking lots, near exits or entrances, etc.) by category of retailer. More than one-half of the retailers, with the exception of “Apparel/Shoes,” use video surveillance cameras outside of their stores.