

FOURTH ANNUAL INTERNATIONAL

# 2024 CASINO SURVEILLANCE SURVEY REPORT



**IACSP**

International Association of Certified Surveillance Professionals

**eConnect**

**Raving**

**TG&H**  
TRIBAL GAMING AND HOSPITALITY



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The International Casino Surveillance Survey is the first of its kind for surveillance professionals in the gaming industry. The 2021 survey was the inaugural survey and our 2024 fourth annual survey continues to build on the body of knowledge about surveillance operations and trends.

The survey is designed to find out about “the state of” surveillance departments in both Tribal and commercial casinos in the U.S., internationally and on cruise lines. The data and analysis from this survey are tools that can help benchmark surveillance operations, issues and trends.

**This report includes:**

- Comparisons in key areas between the 2021, 2022, 2023 and 2024 surveys for key topics such as wages, department and training budgets, and numbers of cases of employee collusion, cheating and advantage play;
- Additional analysis for some topics that show differences in findings based on the size of the casino, and whether it is Tribal or commercial;
- A special survey and report on cybersecurity; a growing threat to the gaming industry that was first covered in last year’s report. In 2024, a follow-up cybersecurity survey was conducted and the data from last year and this year’s reports is included.



The survey content was developed with extensive input from surveillance professionals. All survey participants remain anonymous, and no information is presented in the data or report that could be used to identify any participating casino.

The survey was conducted online with email invitations sent to a list of IACSP members and casino clients of eConnect and Raving Consulting Company. The survey was conducted by Debra Hilgeman, Ph.D., a senior research partner with Raving Consulting Company. Data was collected in June 2024. Analysis and reporting meet academic research standards for reliability and validity.

The survey is co-sponsored by the ***International Association of Certified Surveillance Professionals (IACSP)***. The survey is also co-sponsored and funded by ***eConnect***, a U.S.-based global company providing asset protection and business intelligence for the hospitality industry; and by ***Tribal Gaming & Hospitality Magazine***, a division of ***Raving Consulting Company*** of Reno, NV, that works with casino and hospitality companies worldwide.

***The sponsors of the 2024 Casino Surveillance Survey wish to thank all the casinos and Surveillance professionals who participated in this year's study. Their shared knowledge will help casinos be better equipped to succeed in this fast-changing business environment.***

***If you're a casino surveillance professional and would like to participate in next year's survey, please send an email to Derk Boss, IACSP President, at [djboss49@gmail.com](mailto:djboss49@gmail.com).***



### Responding Casino Characteristics:

- A total of 133 casino properties completed the survey. Respondents were from 25 states in the U.S., as well as international casinos.
- 46% of participating casinos are commercial; 54% are Tribal.
- 39% of properties have more than 100,000 square feet of gaming space; 41% have 50,000-100,000 sf; 20% have less than 50,000 sf.  
**(These three categories of casino size are used throughout the 2024 report for comparison analysis)**
- 49% of properties have more than 200 hotel rooms; 25% have none.
- **The sample of casino respondents in 2024 is similar to the 2021, 2022 and 2023 studies, so comparisons are reliable between the four survey reports.**

### Department Structure:

- Overall, 38% of casinos say access to top management is excellent; 10% say access is very limited or nonexistent.
- 38% of commercial casinos have “excellent access” to top management compared with 38% of Tribal casinos.
- The total number of agents/observers shows 59% overall having more than 15.
- The total number of supervisors shows 47% overall having more than three.
- The total number of technical personnel shows 45% overall having more than two.
- 9% of casinos under 50,000 sq ft have no technical personnel.

### Wages and Budget:

- For the past four years, there were annual increases in the hourly wage rate category of \$20 and more per hour for agents/observers – from 17% of all casinos in 2021 paying at this rate, to 41% in 2024. The average annual salary for a supervisor, in the category of \$50,000 and up, decreased from 47% of all casinos last year to 41% this year.
- For casinos under 50,000 sq ft, 36% have an hourly wage of less than \$15 for agents/observers and 33% pay more than \$20 per hour; for casinos with more than 100,000 sq ft, 2% have an hourly wage less than \$15 and 51% pay more than \$20 per hour.
- For casinos under 50,000 sq ft, 15% have an annual wage over \$50,000 for supervisors; for casinos with more than 100,000 sq ft, 64% have an annual wage in this range.
- In 2024, 50% of casinos under 50,000 sq ft had a department budget of \$500,000 or under; 16% of casinos with more than 100,000 sq ft were in this category.
- In 2024, there were no casinos under 50,000 sq ft with a training budget over \$5,000; 51% of casinos over 100,000 sq ft were in this category.

### Cheating Overview:

- In 2024 aggregate data, 25% of casinos had more than 15 cheating events annually, about the same as in 2023 (27%).
- In 2024 aggregate data, 41% of casinos had five or fewer cheating incidents annually, about the same as 2023 (38%).
- 87% of respondents reported cheating events in table games, followed by 37% in slots, comparable to the previous year.
- Highest percentage of cheating incidents (28%) was from locals.
- Highest percentages for duration of a cheating incident are less than six months (49%) and one time only (35%); the lowest percentage is more than one year (1%).
- Highest percentage of response to a cheating detection is trespassing/ejection/barring (83%); the lowest is no response (5%).
- Highest percentage of average amount of loss per incident (48%) is less than \$1,000 by all size casinos in 2024 data.
- 80% of all casinos said 10% or less of cheating incidents involved employee collusion.

### Advantage Play:

- Cases of 20 or more advantage play incidents **increased in 2024 to 37%; a steady increase from 20% in 2021.**
- 3% of casinos under 50,000 sq ft had 20 or more incidents of advantage play, while 54% of casinos with 100,000 sq ft and over were in this category.
- 5% of respondents did not know how many cases of advantage play they had annually.
- Category for highest percentage of average amount of loss per incident is \$1,000 to \$5,000 at 43% of all casinos, and 29% reported losses of under \$1,000.



### Internal Theft/Fraud:

- In aggregate 2024 data, 9% of casinos reported no cases of employee theft/fraud, which is the same as 2023.
- Overall, the highest category of internal theft/fraud is one to five incidents annually (55%).
- **In 2024, 24% of casinos with less than 50,000 sq ft of gaming space reported zero cases of internal theft/fraud, compared to 13% in 2023.** 4% of casinos with more than 100,000 sq ft reported no cases.
- Food & Beverage continues to be the area where most cases of internal theft/fraud are detected: 80% in 2024 data compared to 73% in 2023.
- Primary means of detecting employee theft/fraud is Surveillance investigation/audit 80% in 2024 compared to 74% in 2023.
- Highest category percentage for average amount of loss is less than \$1,000 at 51% compared to 71% in 2023.
- 84% of detected internal theft/fraud result in termination.

### Operations Trends:

- The most important focus of Surveillance personnel and resources is table games, followed by guests.
- Highest category of available time spent on live patrol is 51-75% (24% of properties).
- Highest category of available time spent on reviews is 21-30% (26% of properties).
- Highest category of available time spent on video audits is 11-20% (32% of properties).
- Highest category of available time spent on information analysis is 0-10% (38% of properties).

### Technology:

- **39% of properties overall use facial recognition technology, which is a steady increase from 25% in 2021.**
- The percent of properties that use facial recognition technology and report a “fairly large” or “huge” impact has increased from 14% in 2021, to 28% in 2024.
- 64% of properties that do not have facial recognition technology plan on adding it, up from 50% in 2023 and 36% in 2022. Of properties that don’t have facial technology and do not plan on adding it, 21% are commercial and 11% are Tribal.
- 50% of properties use an ID scan solution, a 10% increase from 2022. This includes 59% of commercial casinos, and 39% of Tribal casinos.
- Veridocs is the most widely-used ID scan solution by survey respondents.

### Top Threats:

- In 2024, the top threat was internal theft/fraud (92%), followed by cheating (65%) and cyberthreats (54%). Advantage play was ranked fourth at 49%.

# SECTION ONE

## RESPONDENT CHARACTERISTICS

### 2024 SURVEY RESPONDENTS

“As the researcher on this project since its inception four years ago, it becomes more interesting every year. Now that we have four years of reliable data from casino properties worldwide, we can see trends evolving. We also saw an increase in 2024 to 133 properties in the U.S. and abroad. What continues to make the data reliable is that the professionals who complete the survey are representative of all casinos worldwide. There is geographic diversity, and commercial and tribal properties in every size category. For key questions, we conducted crosstab analysis by the three categories of gaming space. This provides gaming professionals with data that fits their unique property.”

Debra Hilgeman, Ph.D. – Raving Senior Partner – Research



## SECTION ONE: RESPONDENT CHARACTERISTICS



**46%** of participating casinos are commercial and  
**54%** are Tribal casinos.

A total of **133 surveys were completed**. There is one survey respondent per property.

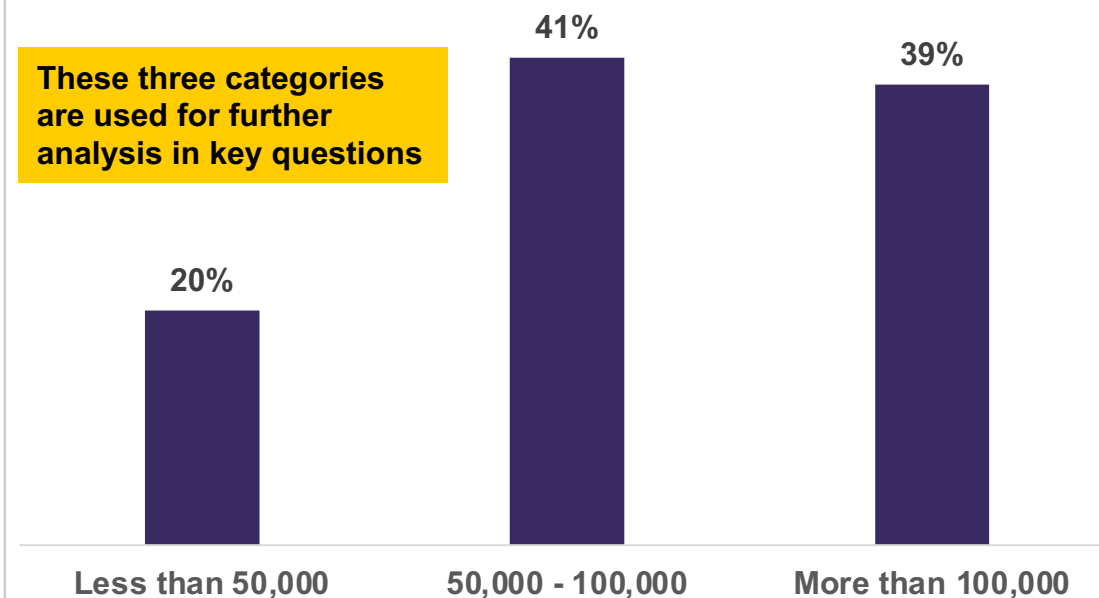
Responses came in from **25 U.S. states, the Virgin Islands and Puerto Rico**. The top five states are:

- **Washington**
- **Nevada**
- **California**
- **Oklahoma**
- **Illinois**

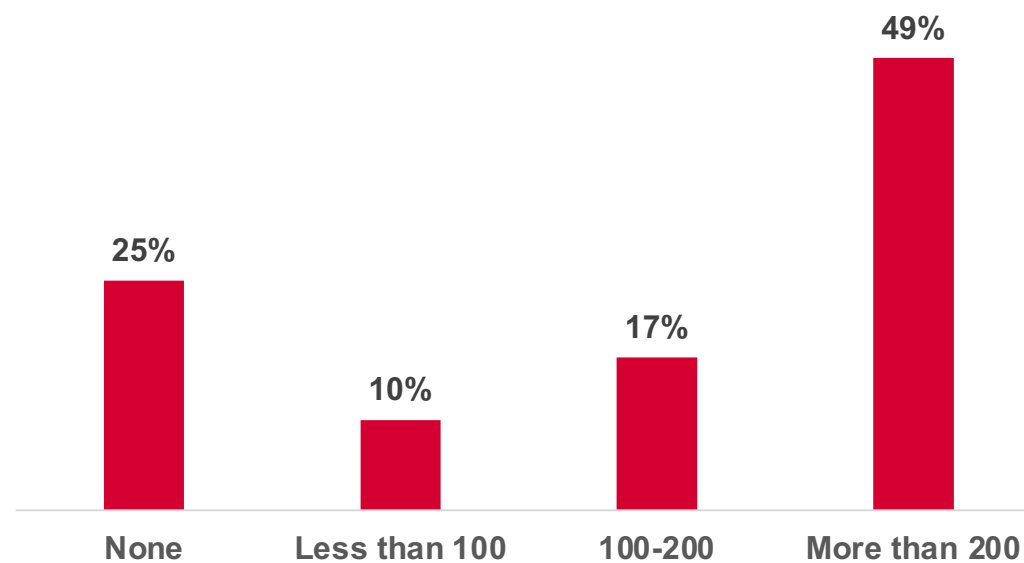
International respondents more than doubled in 2024 from 2023, with participation from Albania, Bulgaria, Canada, Dominican Republic, Georgia, India, Macau, Malaysia, Slovak Republic, South Korea, Sweden, The Bahamas, Uganda, and Viet Nam.

## SECTION ONE: RESPONDENT CHARACTERISTICS

**Square feet of gaming space**



**Number of hotel rooms**



## SECTION TWO

# DEPARTMENT STRUCTURE

### EXPERT OPINION:

“Surveillance access to top management is decreasing both for commercial and tribal casinos. This may be due to the increased pace of operations for both surveillance departments and top executives. Staffing remains about the same overall. However, smaller departments are having challenges filling their open positions both for agents and supervisors. Technical staffing remains about the same. As noted in previous surveys, opportunities to increase staffing levels exist with increasing areas of responsibility of surveillance to include risk management investigations, anti money laundering (AML), and data analysis.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP



## SECTION TWO

# BEST PRACTICES

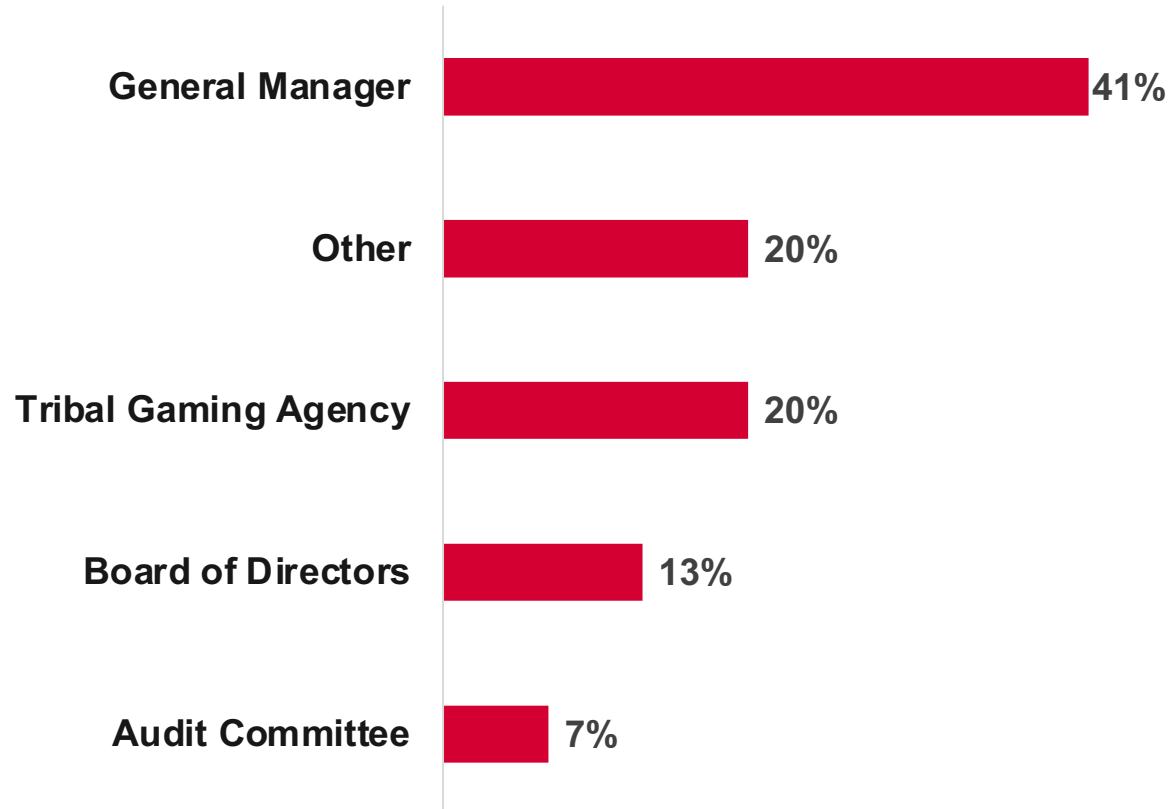


**Recommended Best Practices** to improve access to top leadership and increase staffing levels:

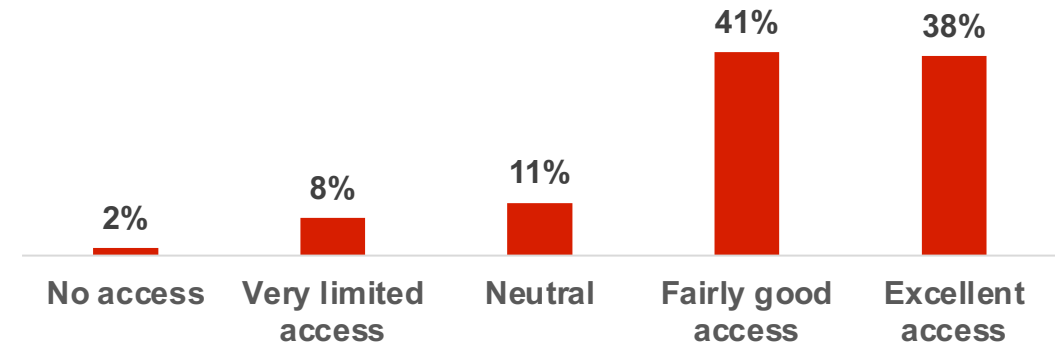
1. Meet with each department head or manager on a regular basis to identify where surveillance can best assist and support them. Make sure that all goals align as much as possible.
2. Provide the senior leader(s) with a daily report of surveillance operations and detections. Prove “value for money,” show evidence of ongoing successes.
3. Assign specific surveillance personnel to key areas of concern such as risk investigation, compliance support, and data analysis. Success in these areas may allow additional staff to be budgeted for.

## SECTION TWO: DEPARTMENT STRUCTURE

### Reporting Structure



### Level of access to top management



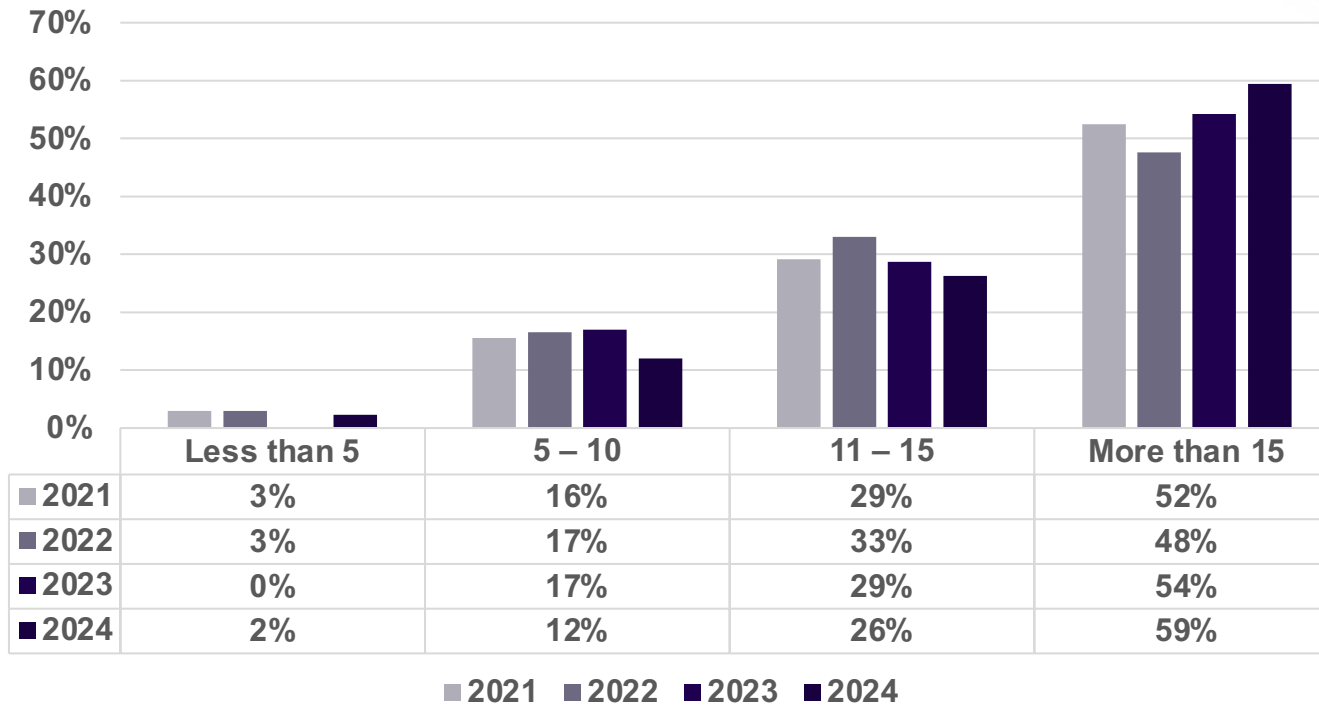
**2024:** **38%** of commercial casinos have “excellent access” to top management compared with **38%** of Tribal casinos.

**2023:** **52%** of commercial casinos have “excellent access” to top management compared with **42%** of Tribal casinos.

**2022:** **68%** of commercial casinos have “excellent access” to top management compared with **38%** of Tribal casinos.

**2021:** **52%** of commercial casinos have “excellent access” to top management compared with **49%** of Tribal casinos.

### Total agents/observers per property



## SECTION TWO: DEPARTMENT STRUCTURE

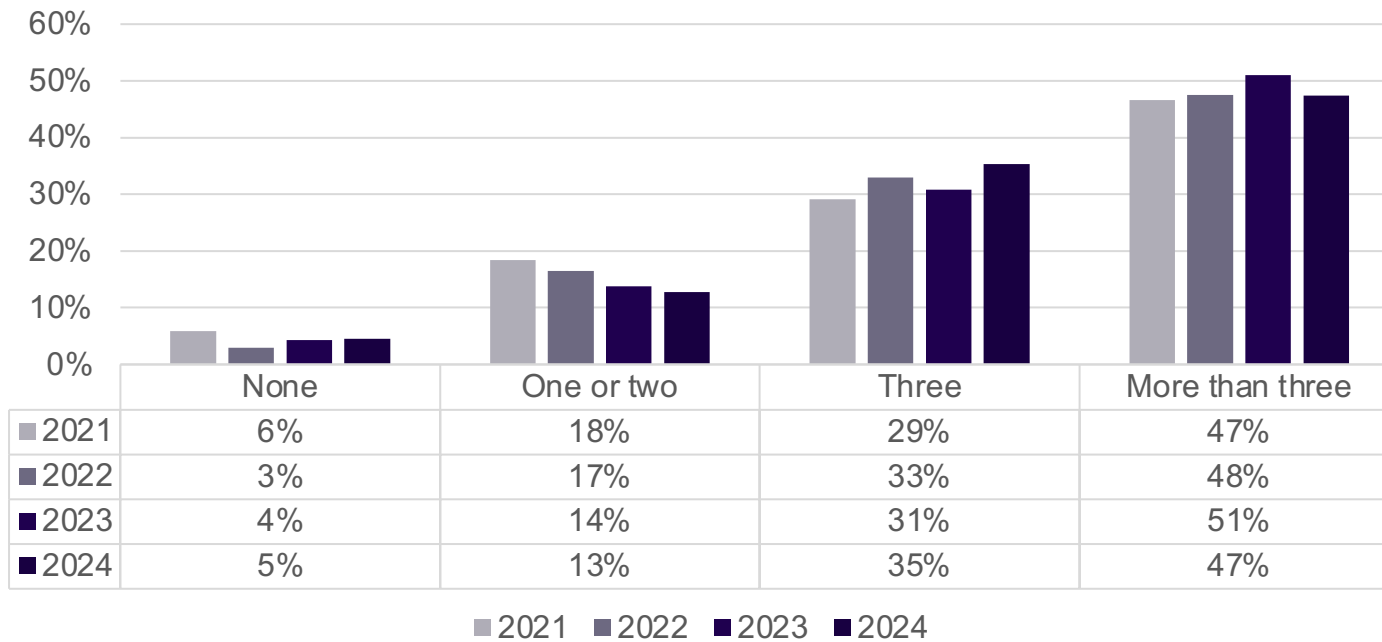
### 2024: Total number of agents/observers per property

*Analysis by square feet of gaming space*

Agents/ Observers	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
Less than 5	15%	0%	0%
5 – 10	29%	11%	5%
11 – 15	21%	38%	18%
More than 15	35%	51%	77%



### Total number of supervisors (other than director/manager) per property



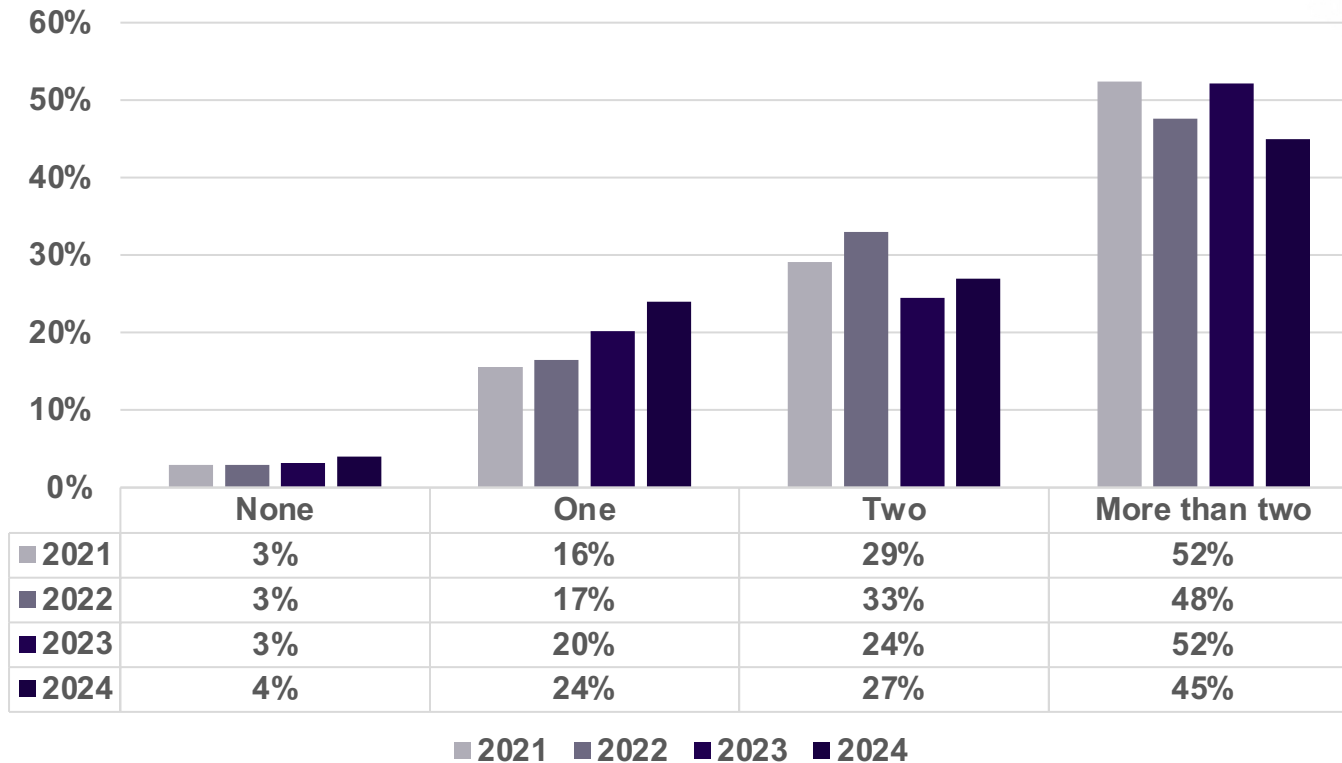
## SECTION TWO: DEPARTMENT STRUCTURE

### 2024: Total number of supervisors (other than director/manager) at your property:

*Analysis by square feet of gaming space*

# of Supervisors	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
None	12%	2%	3%
One or two	35%	10%	8%
Three	21%	43%	36%
More than three	32%	46%	52%

## Total technical personnel per property



## SECTION TWO: DEPARTMENT STRUCTURE

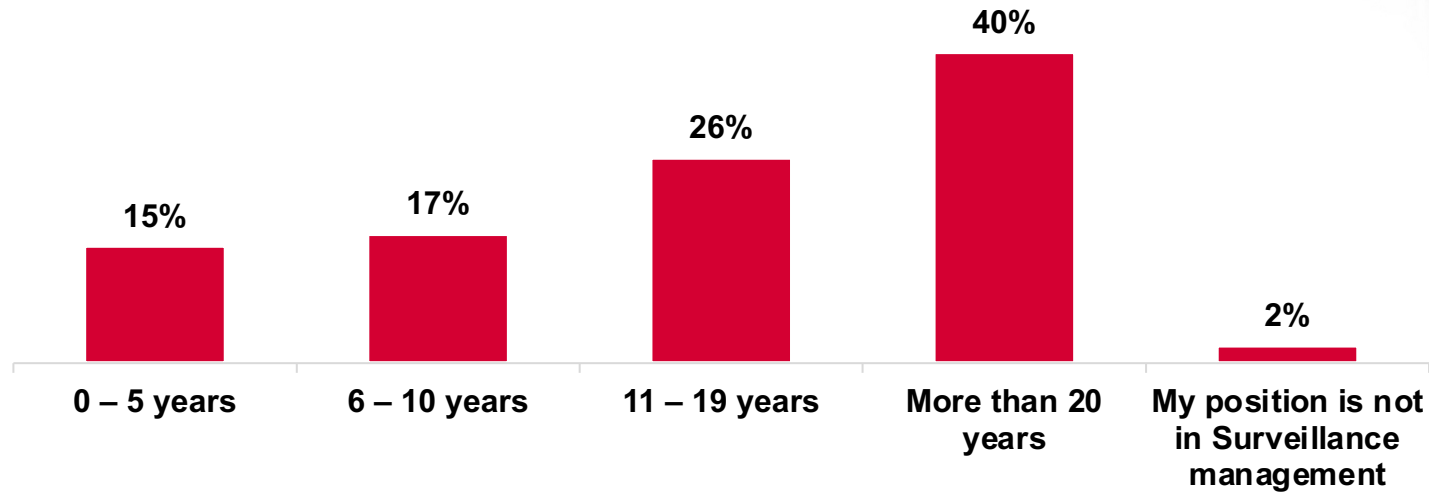
### 2024: Total number of technical personnel

*Analysis by square feet of gaming space*

Technical Personnel	Less than 50,000 sf	50,000 – 100,000 sf	More than 100,000 sf
None	9%	3%	2%
One	53%	20%	7%
Two	21%	28%	28%
More than two	18%	49%	64%

## SECTION TWO: DEPARTMENT STRUCTURE

### Years of surveillance management experience



- 0 – 5 years
- 6 – 10 years
- 11 – 19 years
- More than 20 years
- My position is not in Surveillance management



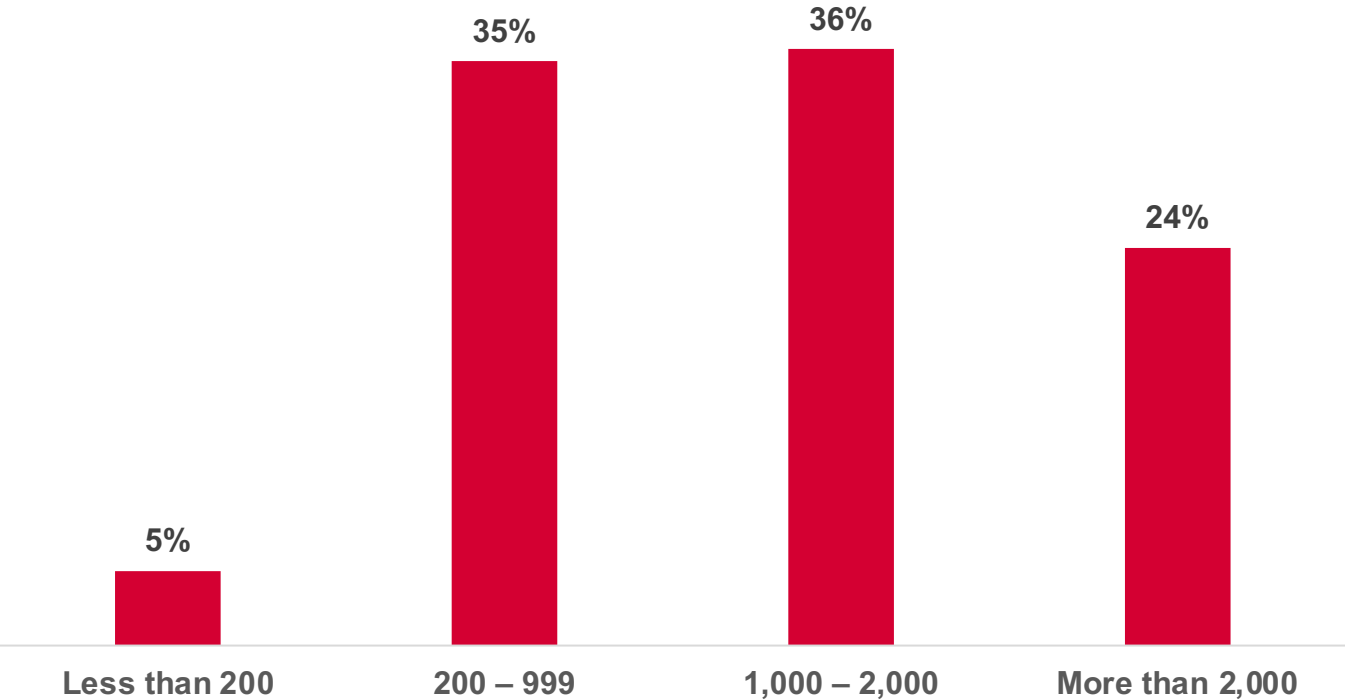
### RESPONDENT COMMENTS

*“Lacking leadership affects the surveillance department immensely. In addition to lacking the tools and resources to effectively do our job and protecting the casino’s assets and safety and well-being of guests and employees.”*

\*\* Respondent comments are not edited



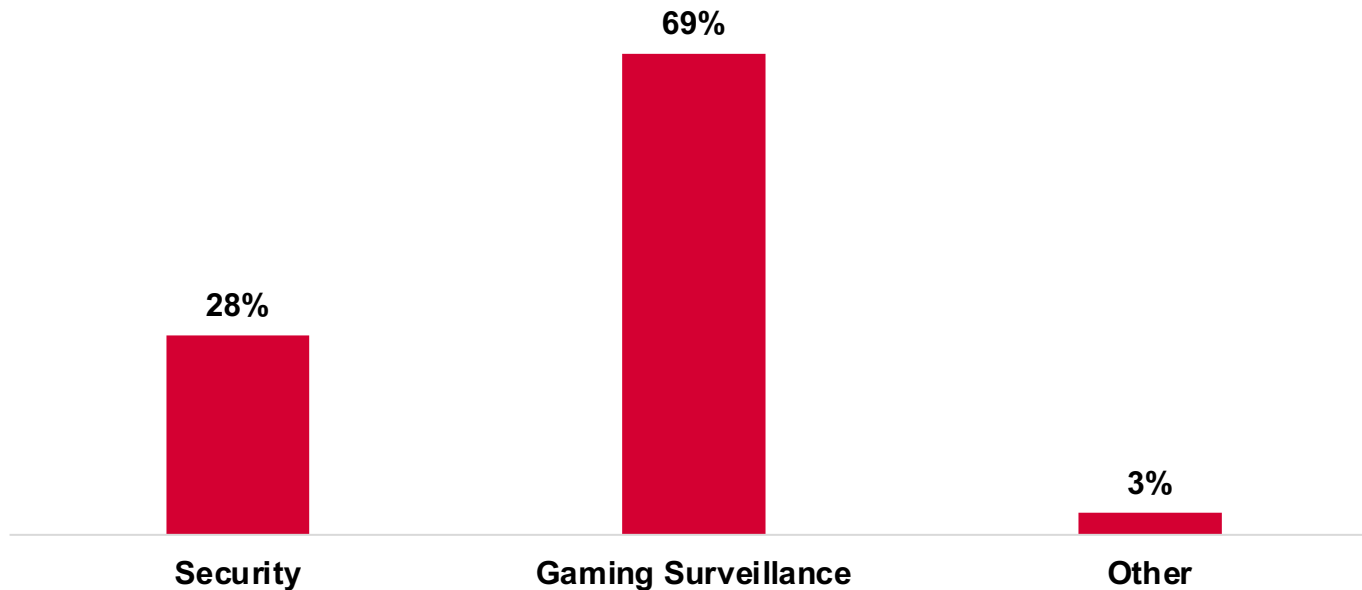
**Number of Surveillance cameras per property**



**SECTION TWO:  
DEPARTMENT STRUCTURE**

2024: Total number of cameras <i>Analysis by square feet of gaming space</i>			
Cameras	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
Less than 200	21%	0%	0%
200 – 999	68%	46%	8%
1,000 – 2,000	12%	38%	43%
More than 2,000	0%	16%	49%

## Responsibility for hotel and parking cameras



## SECTION TWO: DEPARTMENT STRUCTURE



### RESPONDENT COMMENTS

*"We recently implemented License Plate Readers at all entry points for vehicles and have noticed a major positive impact, particularly with being able to deny entry to banned guests. We've also had issues with increasing numbers of Self Exclusion violators, many of which are found to have violated multiple days within retention once they are caught."*

\*\* Respondent comments are not edited

## SECTION THREE

# WAGES AND BUDGET

### EXPERT OPINION:

“Surveillance wages remain about the same. The increases that were made, again, are due to annual raises and wage increases due to market adjustments. The wage disparity remains between surveillance and table games despite ever increasing responsibilities for the surveillance department. Department budgets remain relatively flat. One key point is the lack of adequate training budgets for the surveillance department. Consistent training is critical to the success of the department, and it is apparent surveillance teams are not funded to do so. This is an area that should be addressed by surveillance leadership at each property.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

## SECTION THREE

# BEST PRACTICES



**Recommended Best Practices** to to increase wages, staff retention, and training budget:

1. Combine additional wage increases to training program achievements. As agents attain training objectives, award compensation such as a dollar more per hour per objective. Formalize this process with HR. Get them to agree that staff who have achieved training milestones should be better compensated.
2. Begin the training budget by establishing a library of books pertaining to gaming and surveillance operations. Give staff time to examine these books. Hold impromptu study classes where elements in the books are discussed and dissected. Reach out to external peers to gain greater insights. Award star performers with outside training and conference opportunities.
3. Coordinate an internal training program and include table games, compliance, internal audit, and senior leadership. Make sure that other people can see the value of knowledge about cheating, theft methods, fraud methods, gaming mathematics, etc.



## SECTION THREE

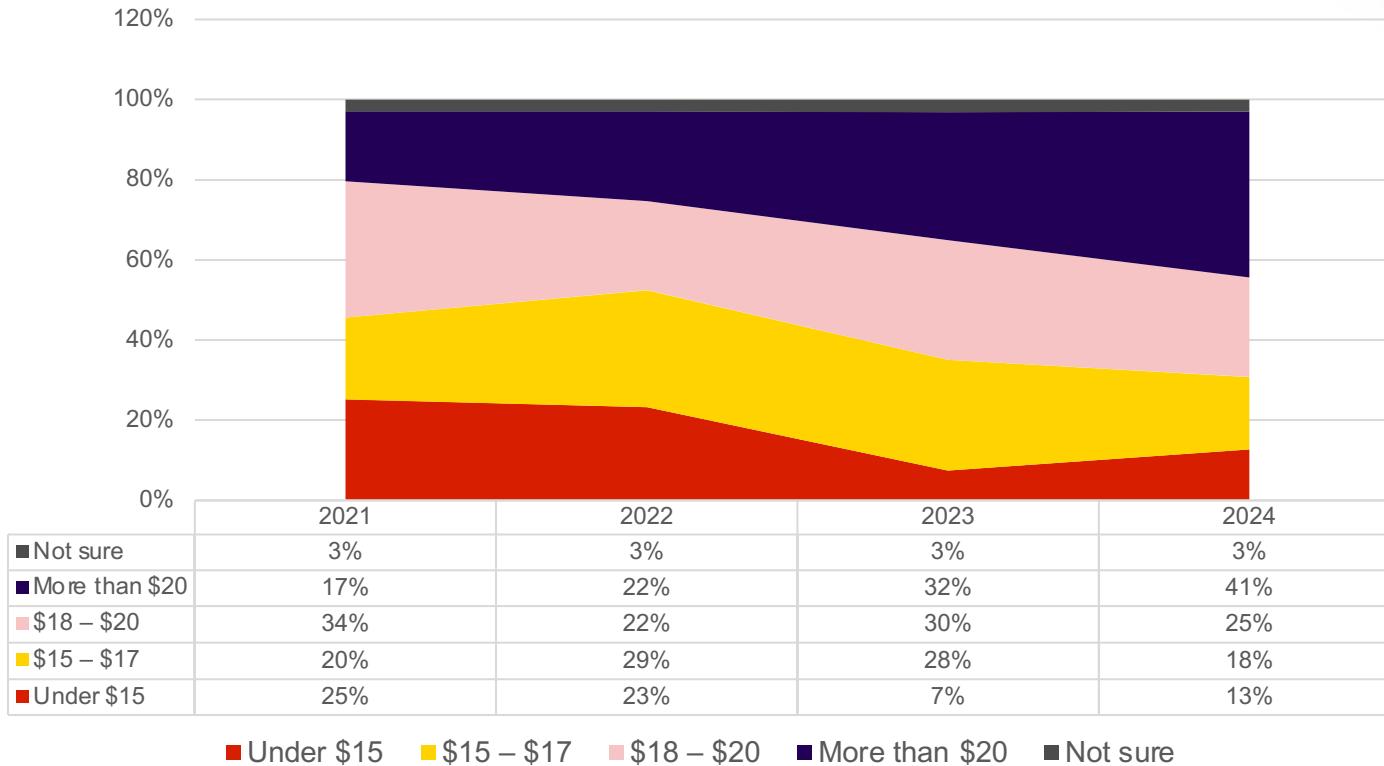
# BEST PRACTICES



### **Recommended Best Practices** (continued):

4. Sponsor training opportunities at your property by inviting vendors, trainers, and consultants and host the event.
5. Join the International Association of Certified Surveillance Professionals (IACSP) and attain the Certified Surveillance Professional certification (CSP), and ASIS International to obtain their professional certification, Certified Protection Professional (CPP), Professional Certified Investigator (PCI), and Physical Security Professional (PSP).
6. Speak with HR: are there any company wide schemes or initiatives that you can take advantage of? Are there any general training funds available that you can tap into?
7. Share the cost of some initiatives: get in a “Game Protection Trainer” and get gaming involved to defer some of the expense.

**Average rate for agent/observer  
2021 – 2024**



## SECTION THREE: WAGES AND BUDGETS

### 2024: Average rate per hour for an agent/observer

*Analysis per square feet of gaming space*

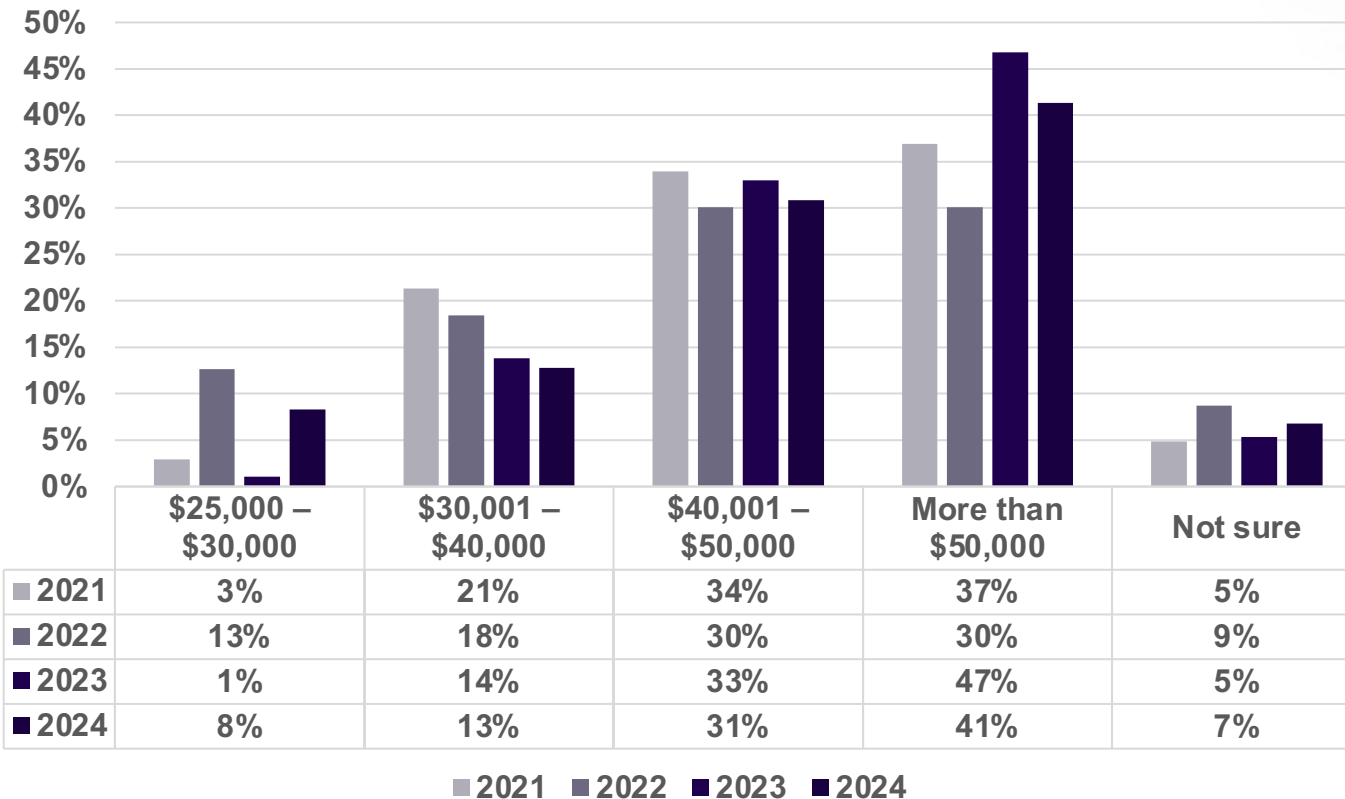
Rate	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
Under \$15	36%	13%	32%
\$15 – \$17	21%	31%	2%
\$18 – \$20	6%	20%	41%
More than \$20	33%	34%	51%
Not sure	3%	2%	3%

### RESPONDENT COMMENTS

*“Our biggest challenge is offering competitive pay to staff.”*

\*\* Respondent comments are not edited

**Average wage for supervisor**



## SECTION THREE: WAGES AND BUDGETS

### 2024: Average annual wage for supervisor

*Analysis by square feet of gaming space*

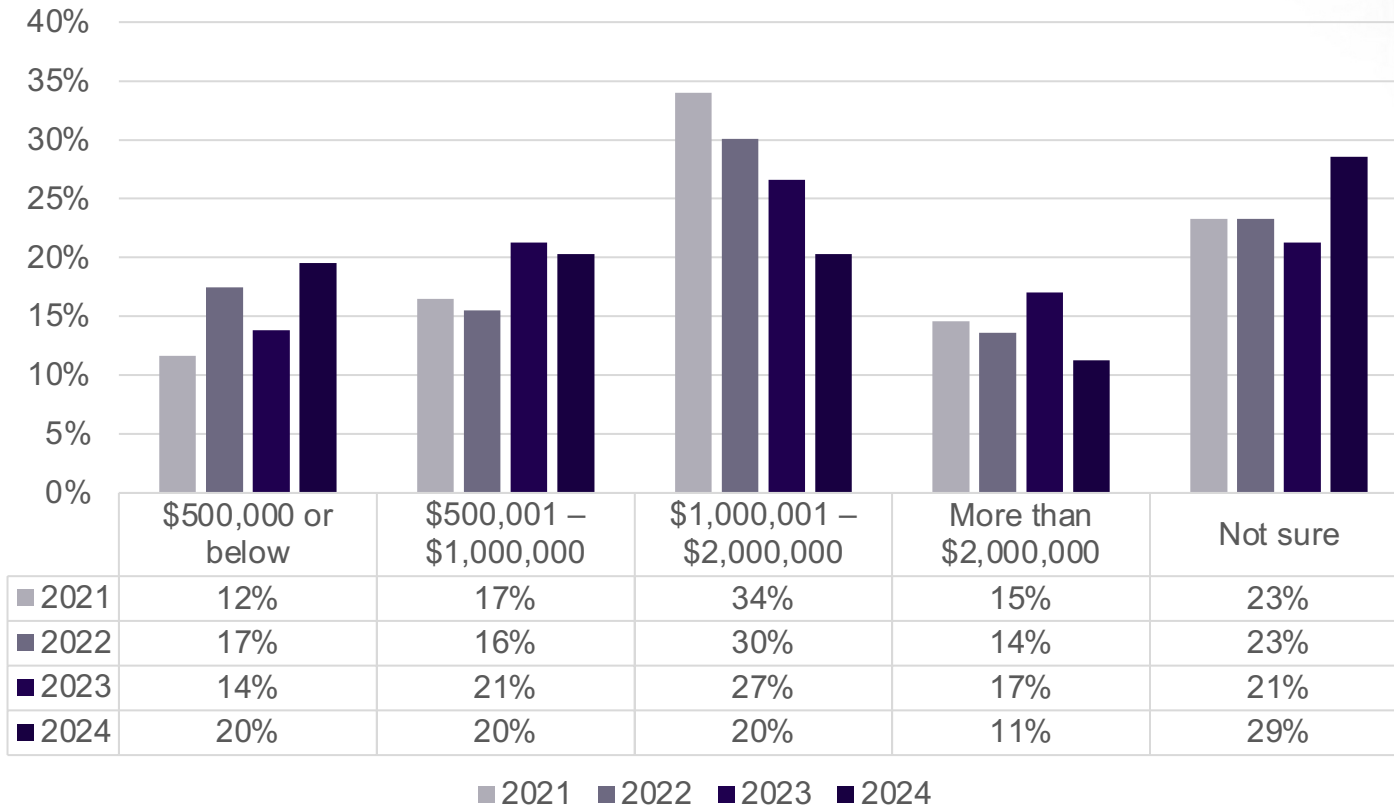
Wage	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
\$25,000 – \$30,000	27%	10%	3%
\$30,001 – \$40,000	18%	20%	3%
\$40,001 – \$50,000	30%	30%	25%
More than \$50,000	15%	33%	64%
Not sure	9%	7%	5%

### RESPONDENT COMMENTS

*“The company needs to invest more into payroll and equipment. Increase the number of department employees.”*

\*\* Respondent comments are not edited

## Current annual department budget



## SECTION THREE: WAGES AND BUDGETS

### 2024: Current annual department budget

Analysis by square feet of gaming space

Budget	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
\$500,000 or below	50%	18%	16%
\$500,001 – \$1,000,000	25%	25%	7%
\$1,000,001 – \$2,000,000	9%	18%	25%
More than \$2,000,000	0%	7%	20%
Not sure	16%	32%	33%

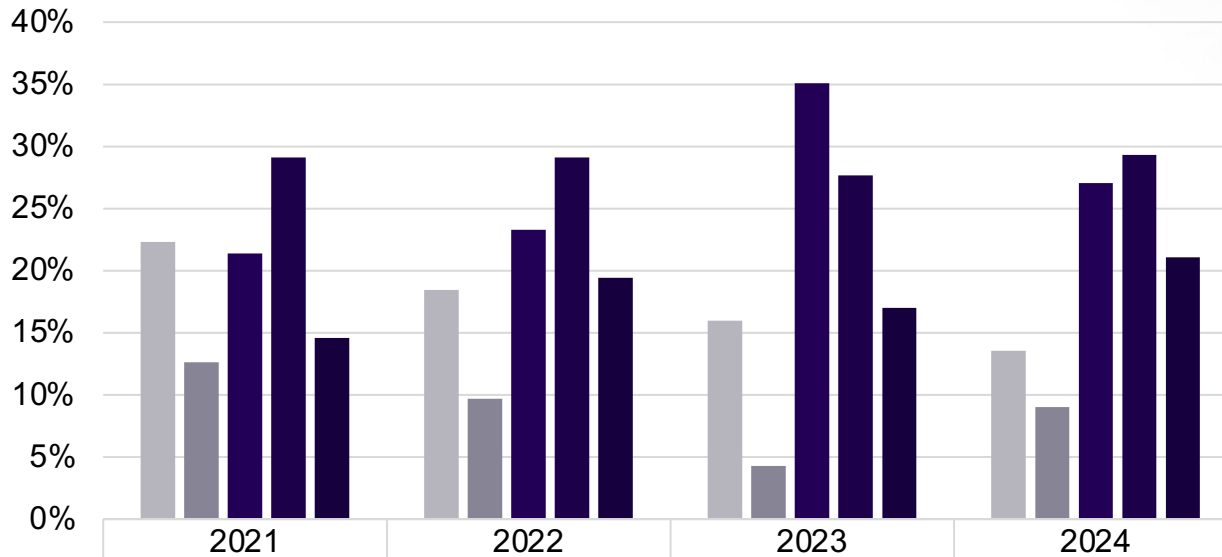
### RESPONDENT COMMENTS

*“Surveillance challenges have been amplified since covid. Staffing remains a challenge with pay and finding qualified candidates. Regulatory agencies are behind on technology. Surveillance is somewhat isolated from management beyond the executive levels. It's also difficult to break through the dogma of necessary evil and the cost of doing business by some.”*

\*\* Respondent comments are not edited



### Annual training budget



■ None	22%	18%	16%	14%
■ Less than \$1,000	13%	10%	4%	9%
■ \$1,000 – \$5,000	21%	23%	35%	27%
■ More than \$5,000	29%	29%	28%	29%
■ Not sure	15%	19%	17%	21%

■ None ■ Less than \$1,000 ■ \$1,000 – \$5,000 ■ More than \$5,000 ■ Not sure

## SECTION THREE: WAGES AND BUDGETS

### 2024: Current annual training budget

Analysis by square feet of gaming space

Budget	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
None	28%	10%	10%
Less than \$1,000	13%	10%	7%
\$1,000 – \$5,000	28%	30%	25%
More than \$5,000	22%	22%	38%
Not sure	9%	28%	21%

### RESPONDENT COMMENTS

*"The surveillance department has been integral in providing oversight in the gaming operations industry. However, adequate training procedures to manufacture effective surveillance operators especially those to help in collaboration with evolving technologies and cheating methods are not available. This is a challenge for surveillance directors and managers are facing. Its not the effectiveness of the systems being used, it's the quality of the teams that are using this technology that needs to be improved to effectively learn how to detect, act and contain threats to the casino property effectively especially internal fraud from other department heads."*

\*\* Respondent comments are not edited

## SECTION FOUR

# CHEATING OVERVIEW

### DEFINITION OF CHEATING IN THIS SURVEY:

“By cheating we mean the actions of an individual, or a group of individuals, acting independently, or in collusion with staff members, to gain an unearned advantage over the casino by either:

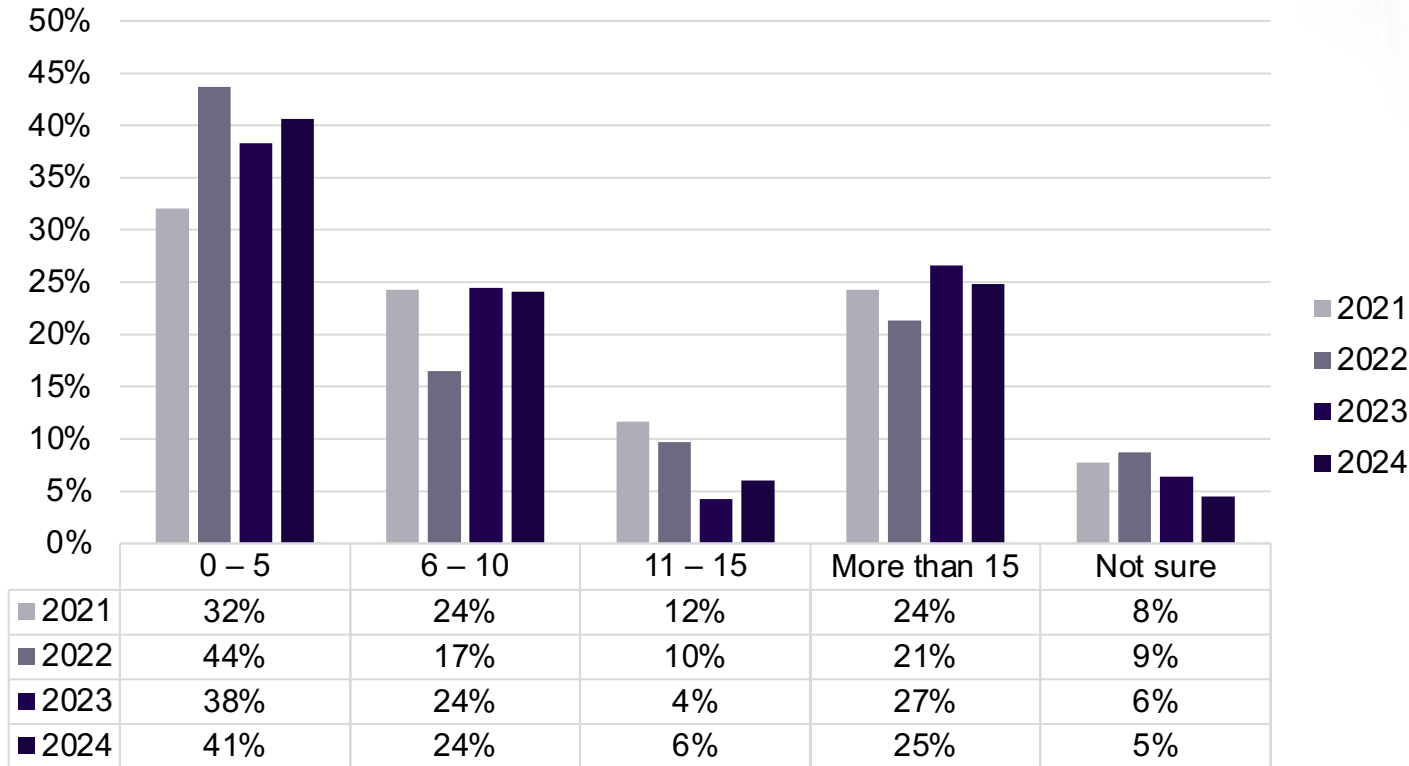
- Wagering additional money after the result is known (examples: Top-Hatting, Past Posting)
- By obtaining information, by nefarious means, that could not otherwise be known (examples: card marking, filming slot machines, exploiting a card slug, card counting with a device)
- By receiving unearned benefits due to relationships with staff (examples: being paid for losing bets, being rated for no play, or using social-engineering to exploit staff, or policies and procedures)

Other examples can include color-up scams, exploiting edge-sorts, and front-money scams.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

## SECTION FOUR: CHEATING OVERVIEW

**Cheating events per property 2021-2024**



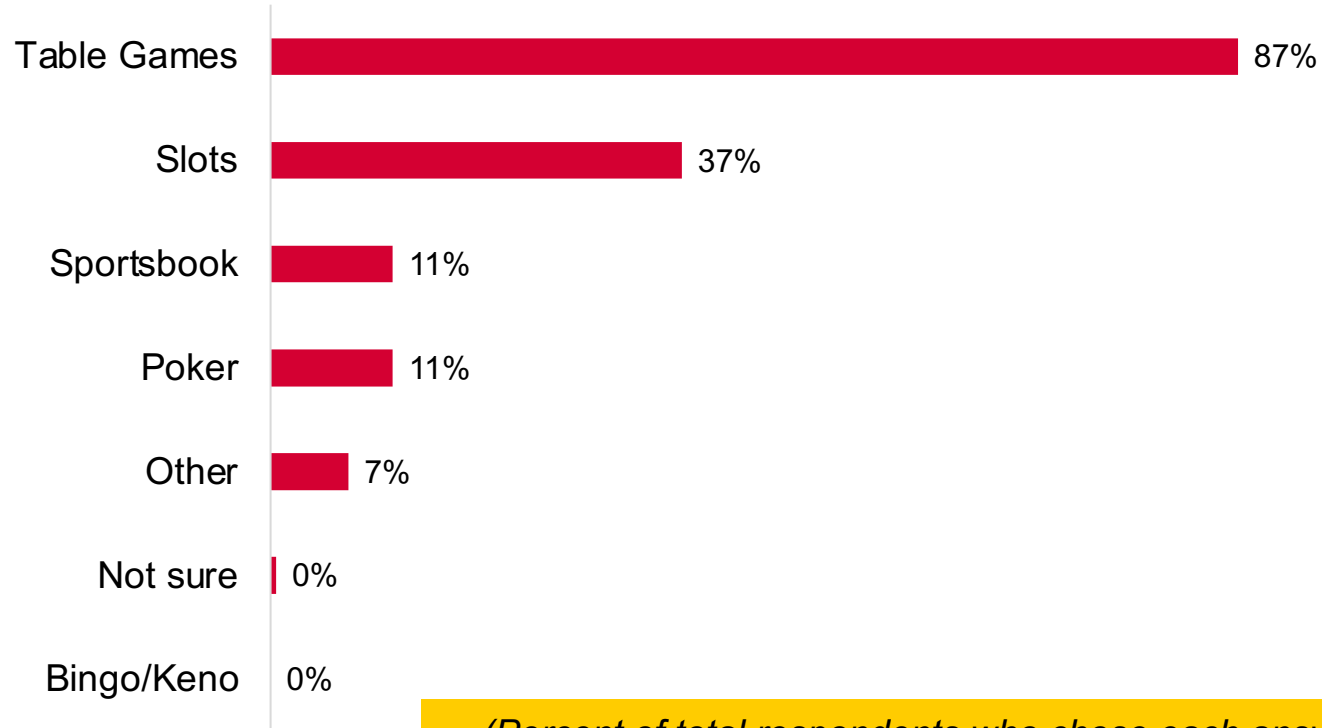
**2024: Total cheating events**

*Analysis by square feet of gaming space*

Events	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
0 – 5	61%	45%	28%
6 – 10	19%	21%	26%
11 – 15	0%	7%	10%
More than 15	16%	21%	30%
Not sure	3%	7%	7%

## SECTION FOUR: CHEATING OVERVIEW

### Where cheating occurs



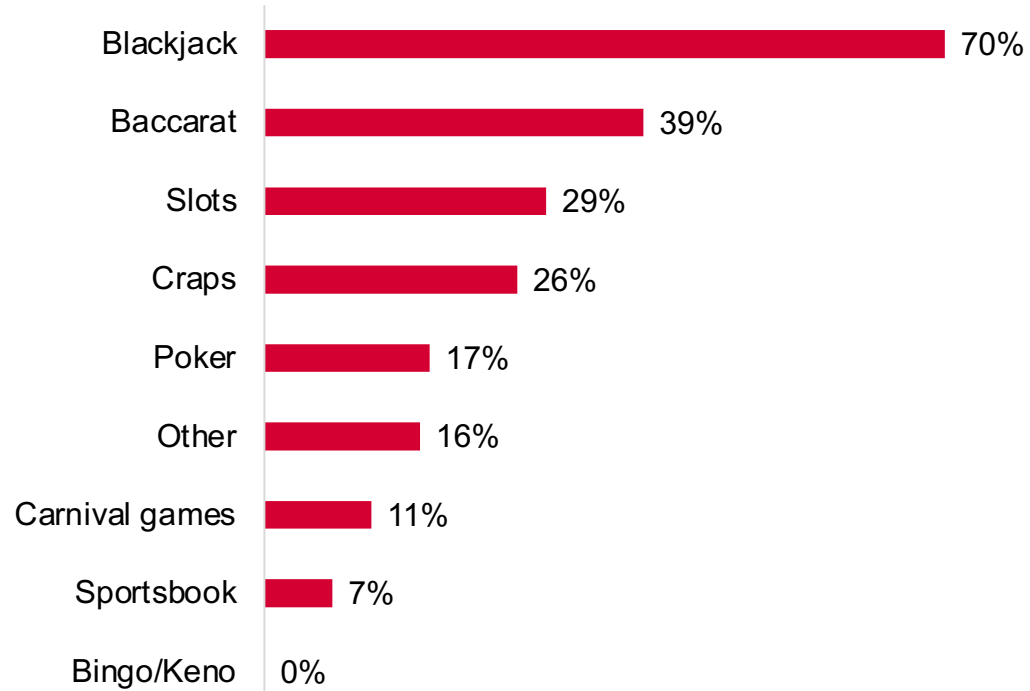
*(Percent of total respondents who chose each answer)*



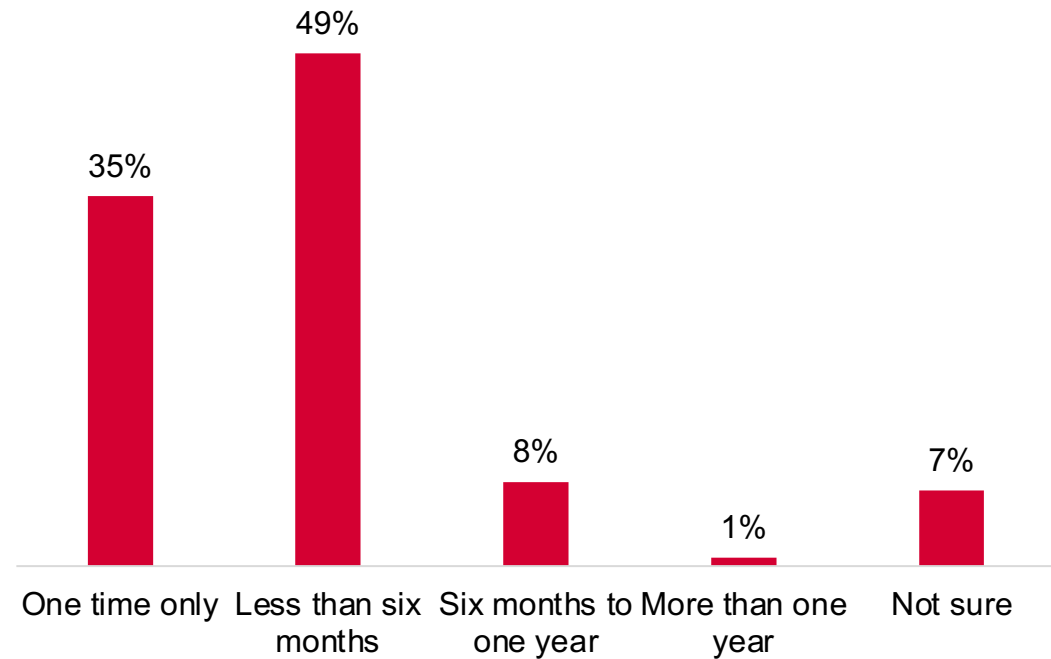


## SECTION FOUR: CHEATING OVERVIEW

**Games where cheating occurred**

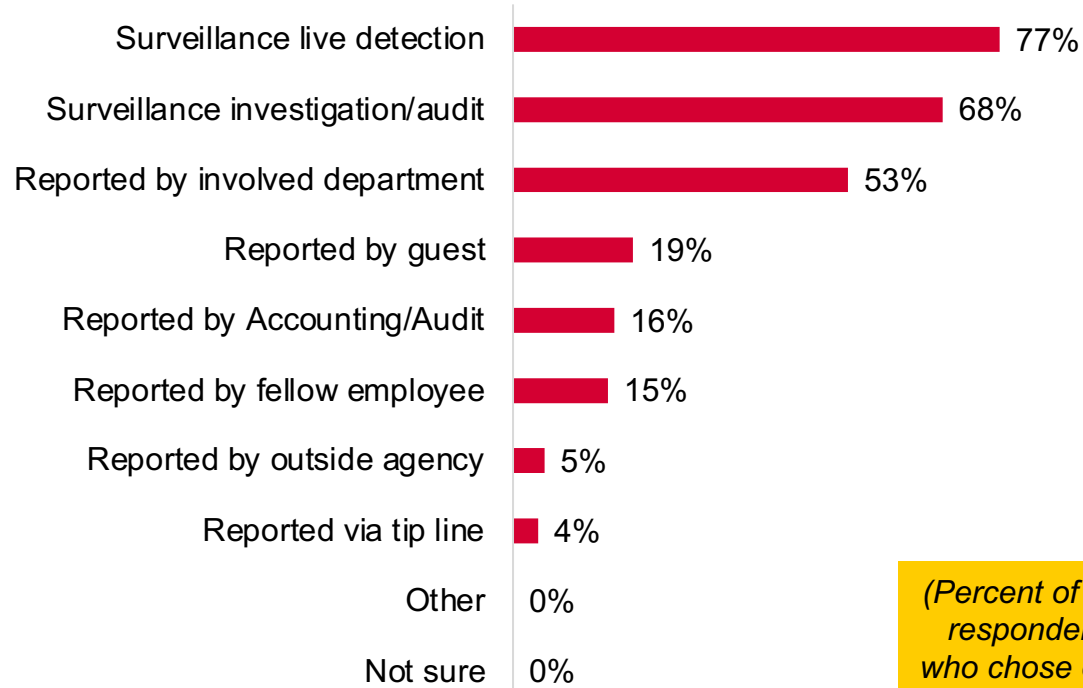


**Average duration of cheating incidents**



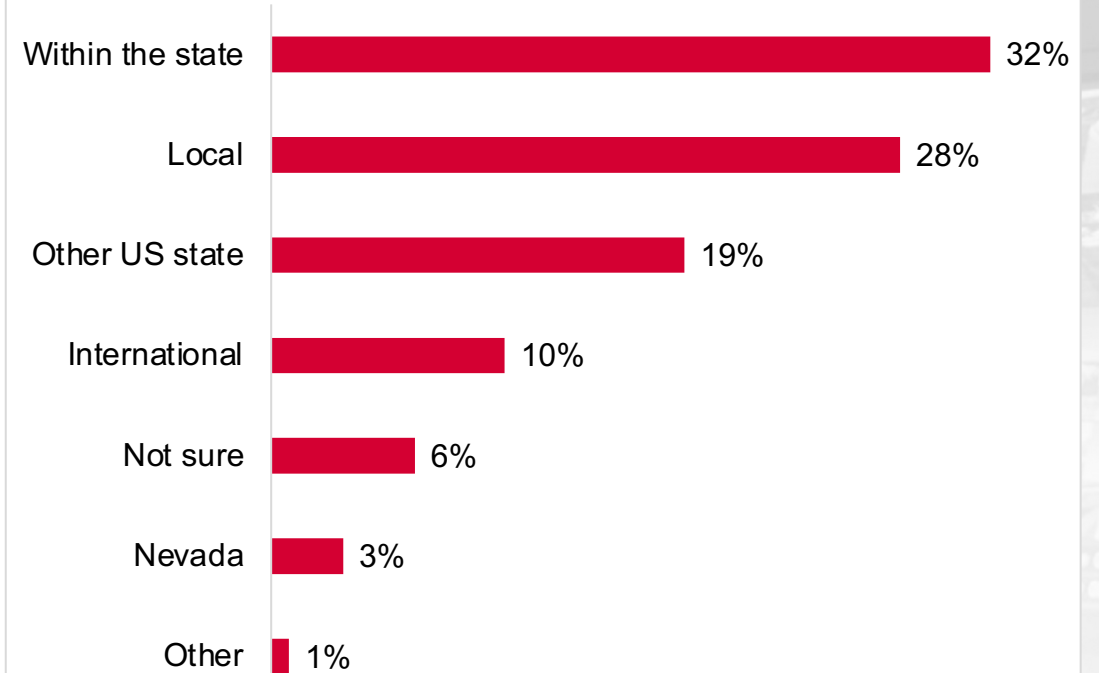
## SECTION FOUR: CHEATING OVERVIEW

### How cheating was detected



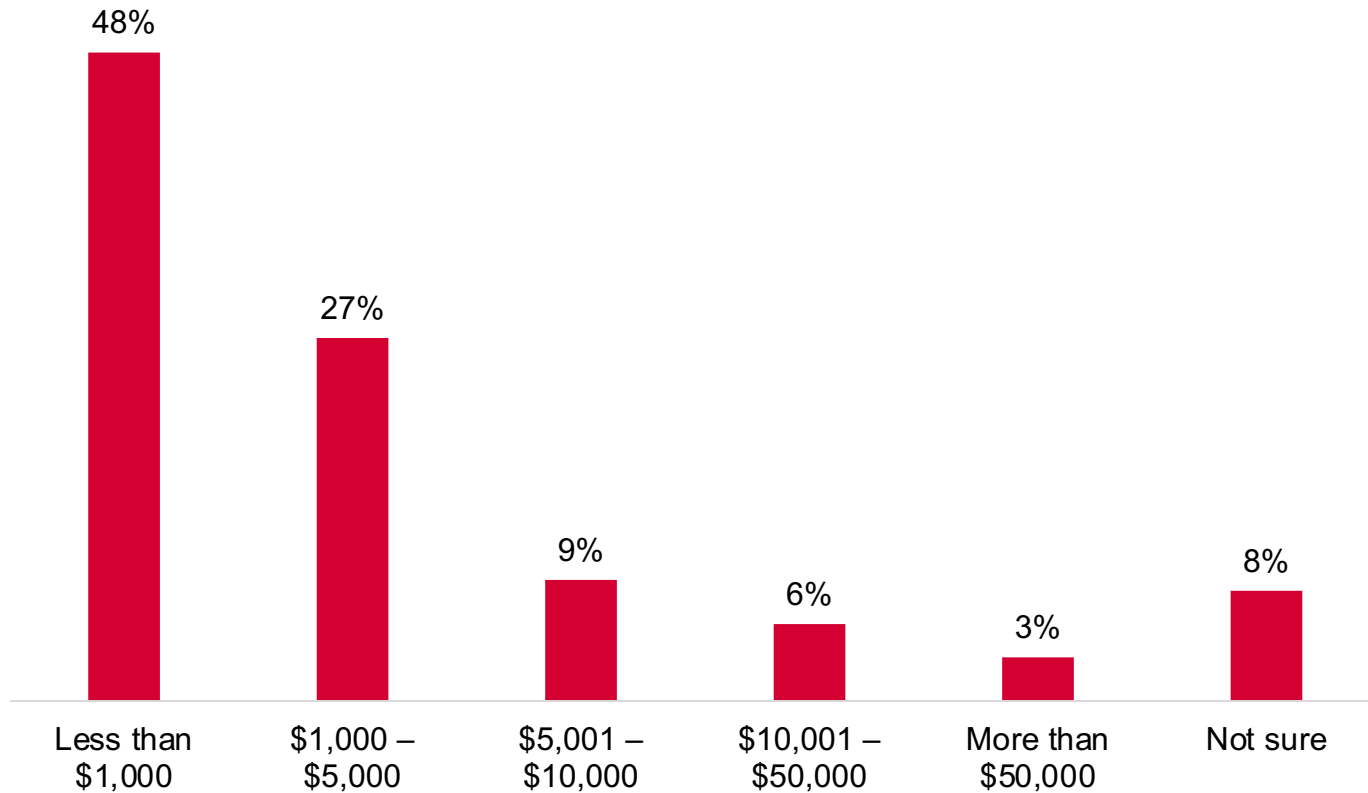
*(Percent of total respondents who chose each answer)*

### Where cheaters were primarily from



## SECTION FOUR: CHEATING OVERVIEW

**Average amount of loss per cheating incident**

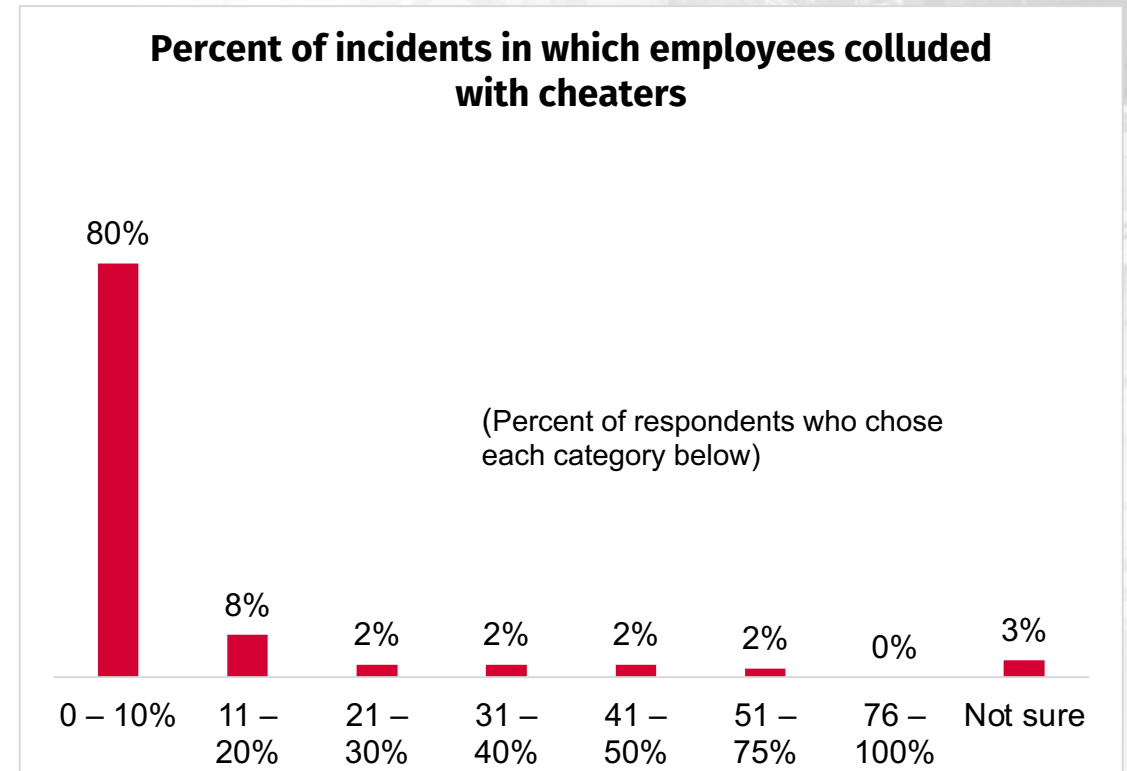
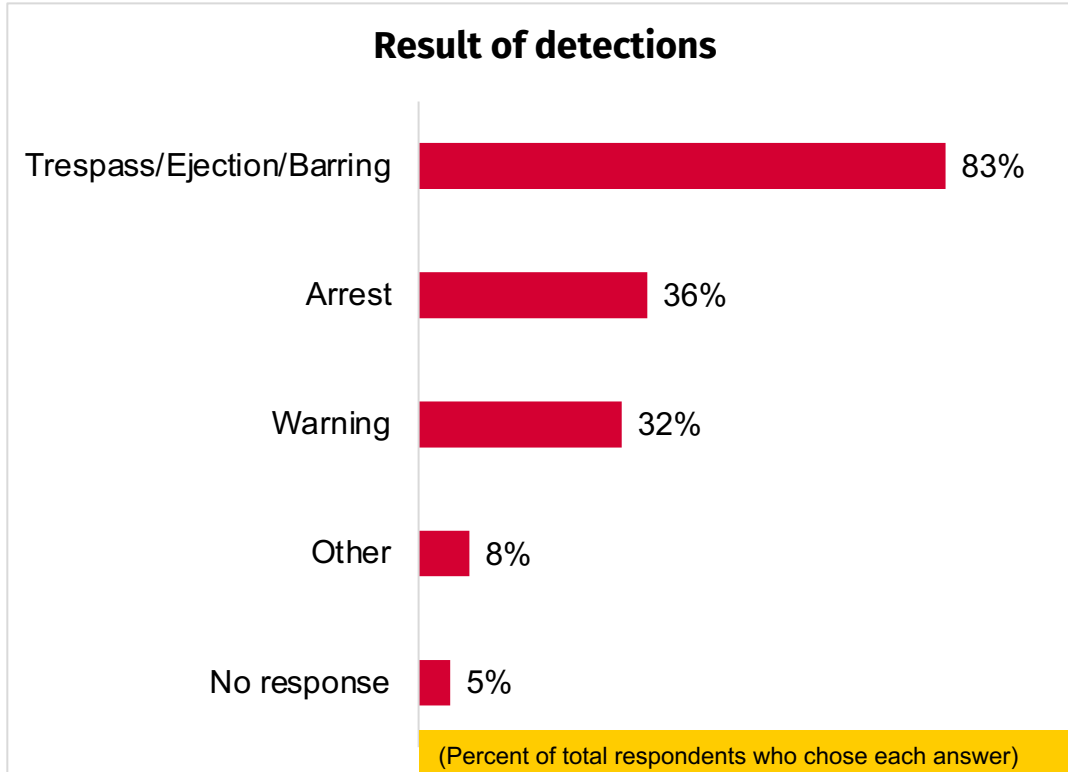


**2024: Average amount of loss per incident**

*Analysis by square feet of gaming space*

Amount	Less than 50,000 sf	50,000 – 100,000 sf	More than 100,000 sf
Less than \$1,000	54%	48%	40%
\$1,000 – \$5,000	38%	25%	25%
\$5,001 – \$10,000	4%	10%	12%
\$10,001 – \$50,000	4%	6%	5%
More than \$50,000	0%	4%	4%
Not sure	0%	8%	14%

## SECTION FOUR: CHEATING OVERVIEW





## SECTION FIVE

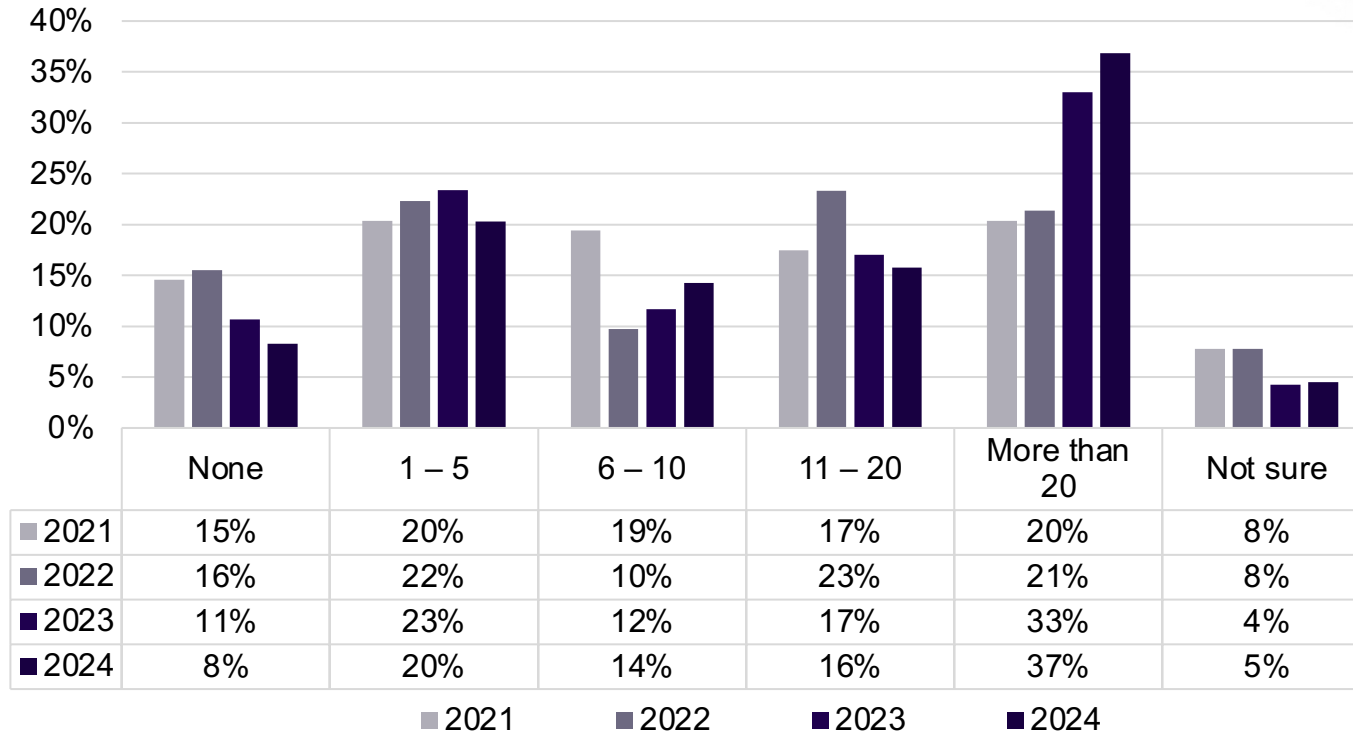
# ADVANTAGE PLAY

### DEFINITION OF ADVANTAGE PLAY IN THIS SURVEY:

“By advantage play we mean an individual, or group of individuals, acting to gain an advantage over the games in a casino without actively breaking policy and procedure. Examples include card counting without a computer, baccarat side game counting, placing roulette bets very late in the spin, and exploiting visible bonus features on slot machines when it becomes profitable to do so.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

**Number of advantage play incidents  
2021-2024**



## SECTION FIVE: ADVANTAGE PLAY

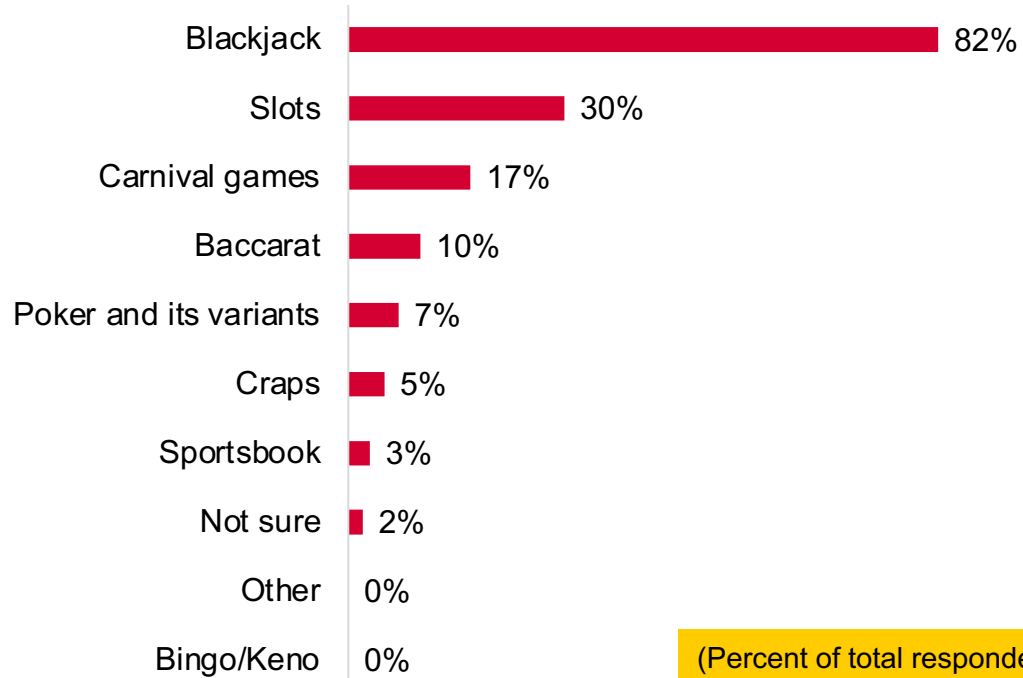
**2024: Number of advantage play incidents**

*Analysis by square feet of gaming space*

Incidents	Less than 50,000 sf	50,000 - 100,000 sf	More than 100,000 sf
None	17%	9%	2%
1 – 5	41%	21%	7%
6 – 10	17%	18%	14%
11 – 20	17%	14%	18%
More than 20	3%	32%	54%
Not sure	3%	5%	5%

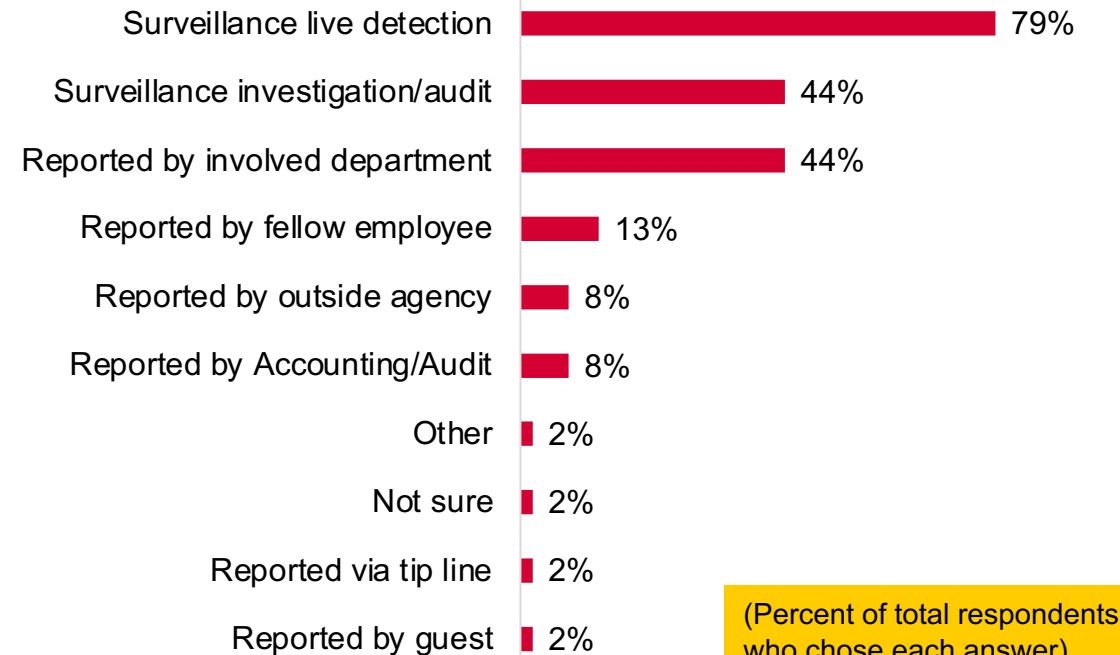
## SECTION FIVE: ADVANTAGE PLAY

### Areas where advantage play occurred



(Percent of total respondents who chose each answer)

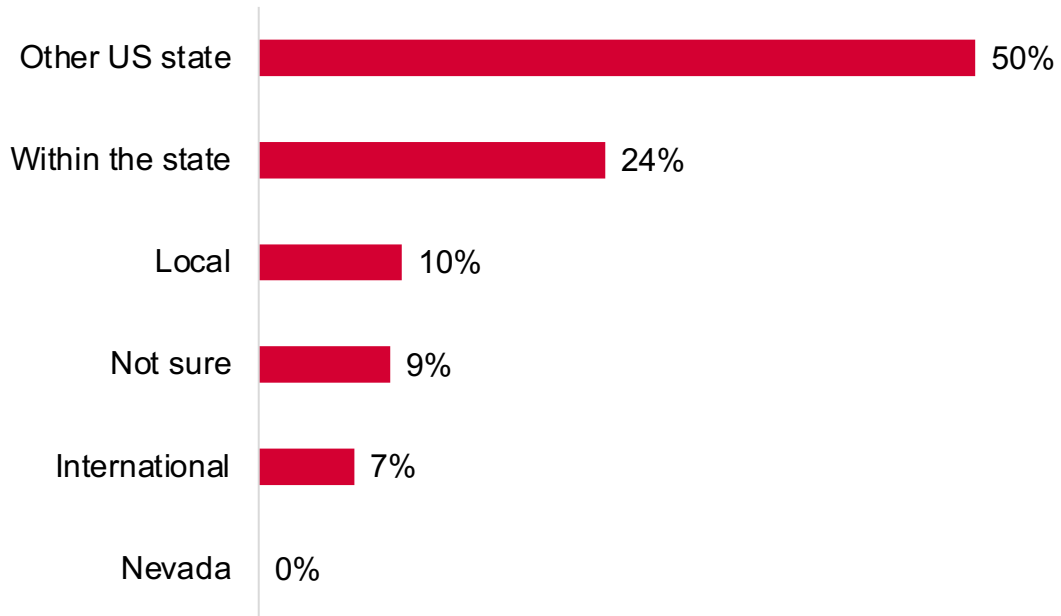
### How advantage play was detected



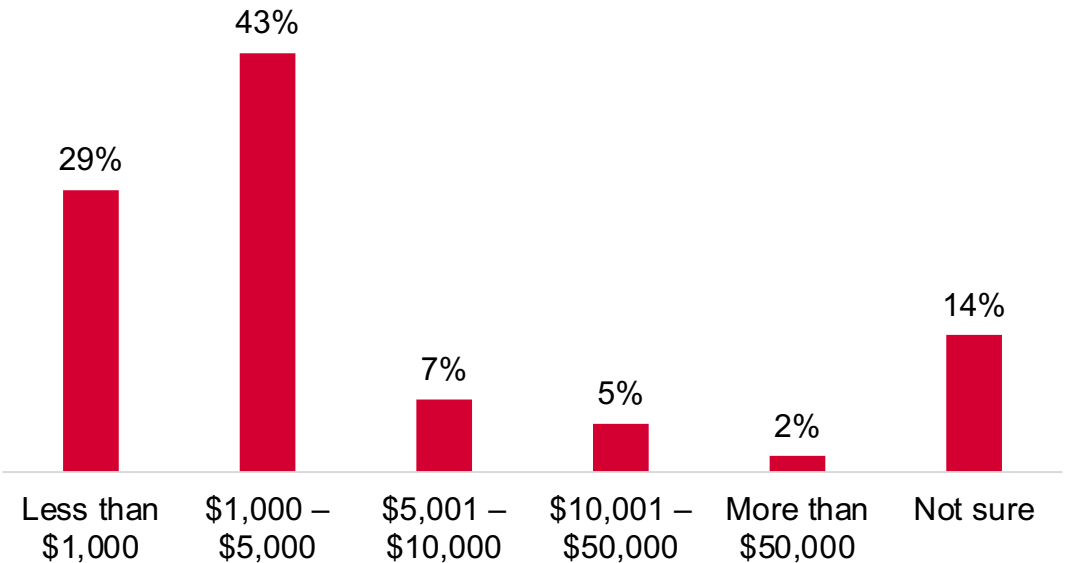
(Percent of total respondents who chose each answer)

## SECTION FIVE: ADVANTAGE PLAY

**Where advantage players were primarily from**



**Average amount of loss to advantage play per incident**





## SECTION SIX

# INTERNAL THEFT/FRAUD

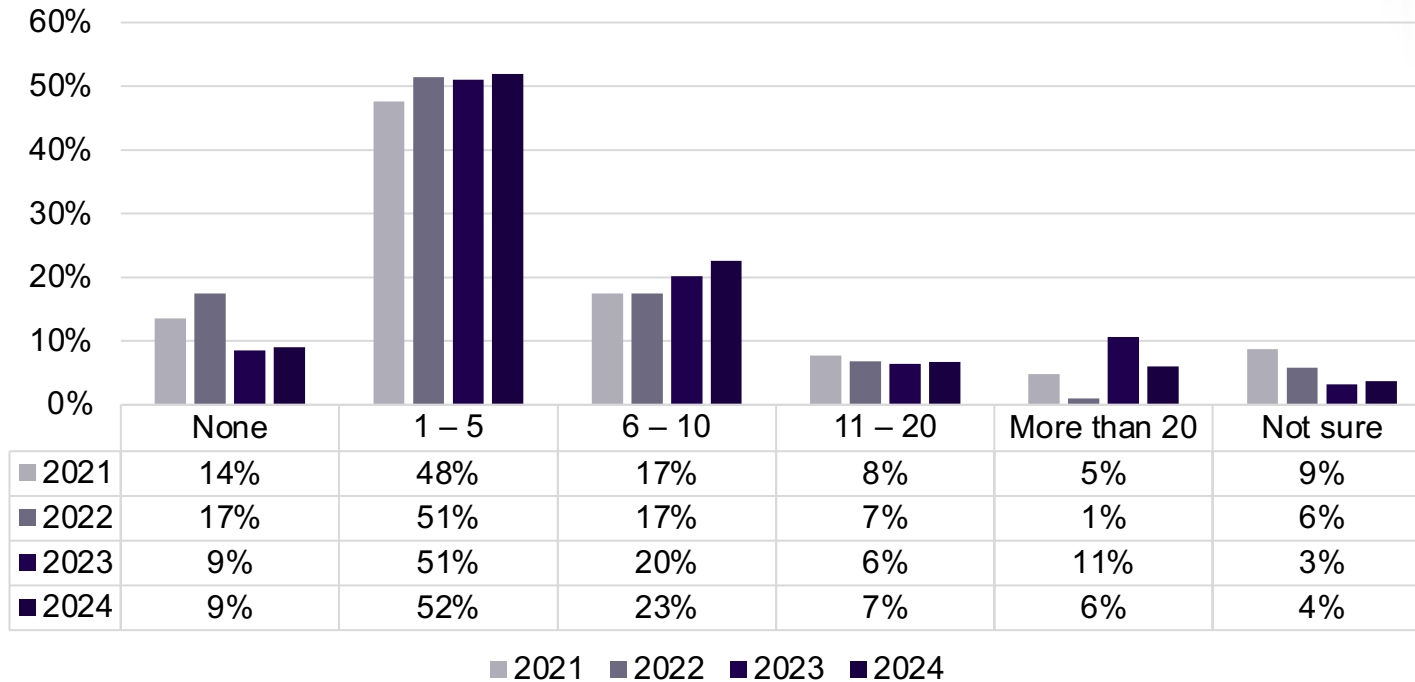
### DEFINITION OF INTERNAL THEFT/FRAUD IN THIS SURVEY:

“By internal theft and fraud, we mean instances where staff members directly steal money from the casino operation, by whatever method.

Examples: Slot employees producing and cashing out for their own benefit “test” TITO vouchers, staff exploiting marketing promotions to benefit friends and family, dealing staff stealing chips, hospitality staff stealing payments for food or beverages.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

**Cases of employee theft/fraud per property  
2021– 2024**



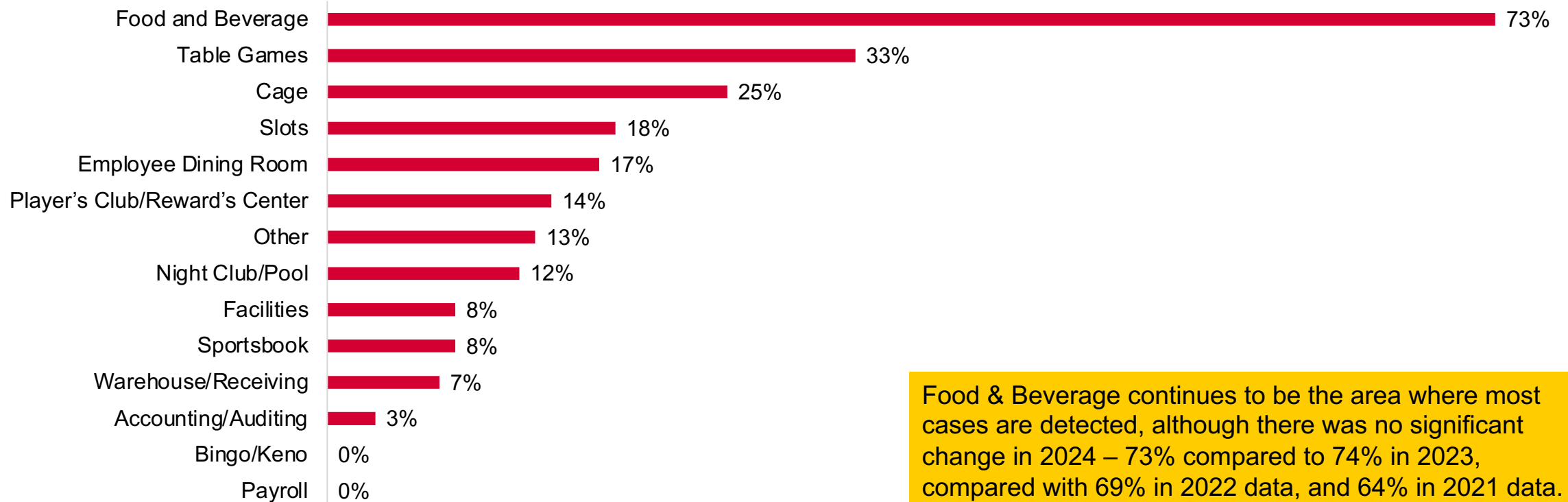
## SECTION SIX: INTERNAL THEFT/FRAUD

### 2024: Number of internal theft/fraud cases

*Analysis by square feet of gaming space*

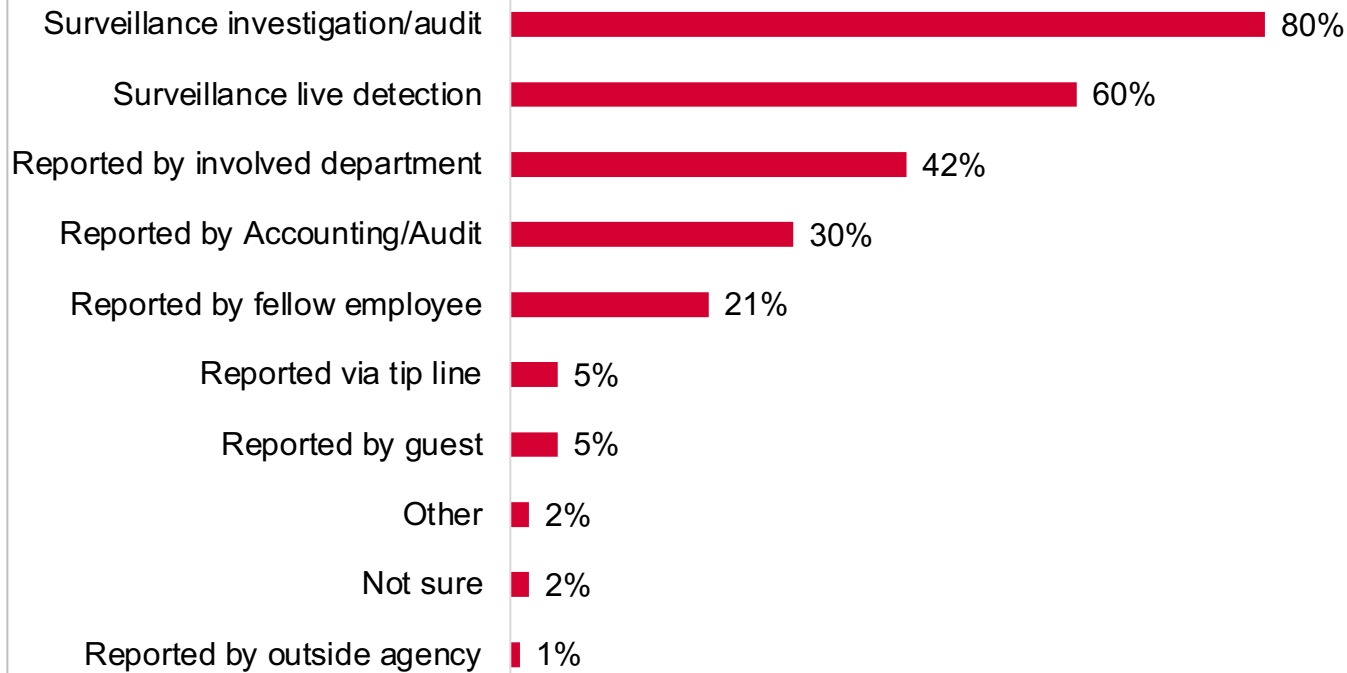
Cases	Less than 50,000 sf	50,000 – 100,000 sf	More than 100,000 sf
None	24%	13%	4%
1 – 5	55%	57%	42%
6 – 10	14%	16%	33%
11 – 20	7%	7%	4%
More than 20	0%	0%	15%
Not sure	0%	7%	4%

**Departments/areas where employee theft/fraud occurred**



Food & Beverage continues to be the area where most cases are detected, although there was no significant change in 2024 – 73% compared to 74% in 2023, compared with 69% in 2022 data, and 64% in 2021 data.

**Primary means of employee theft/fraud detection (respondents chose top three)**



(Percent of total respondents who chose each answer)

## SECTION SIX: INTERNAL THEFT/FRAUD



### RESPONDENT COMMENTS

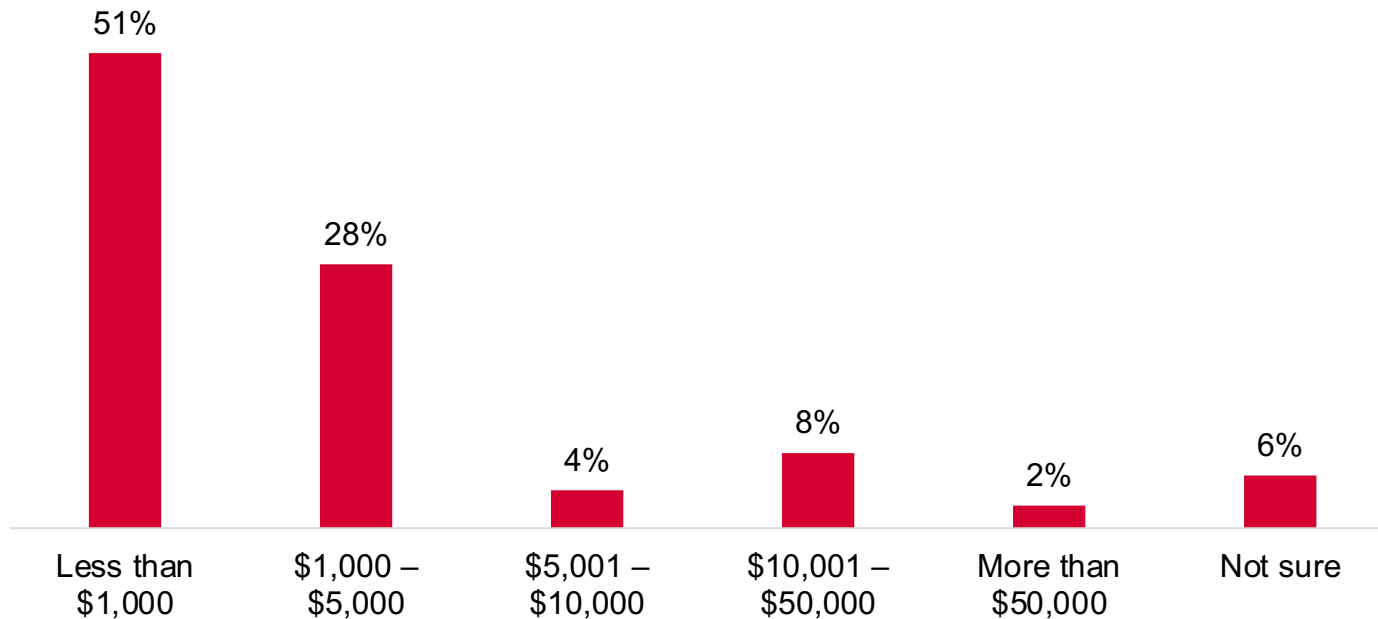
*“Increasing the use of AI to analyze surveillance data for predictive policing and other purposes is essential to keep pace with sophisticated theft and fraud tactics.”*

\*\* Respondent comments are not edited



## SECTION SIX: INTERNAL THEFT/FRAUD

**Average amount of loss per incident to employee theft/fraud**



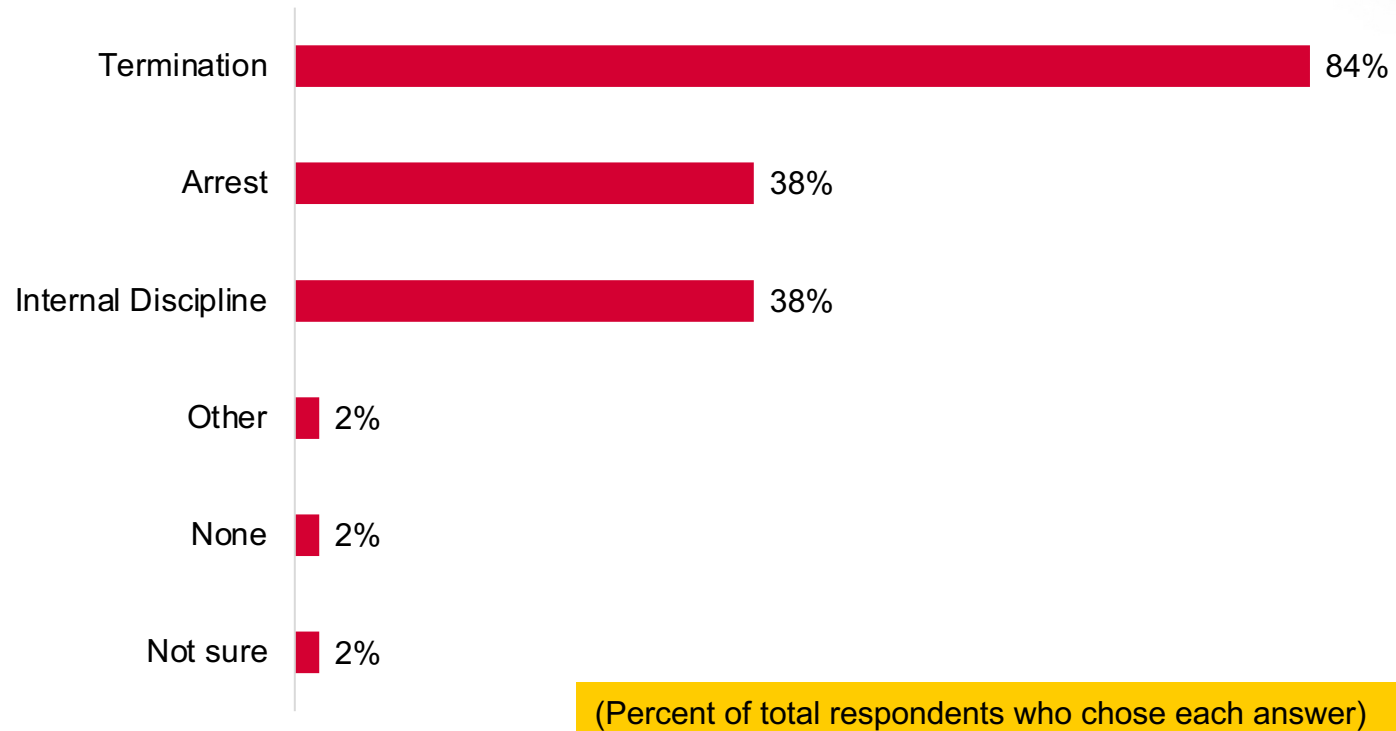
**2024: Average loss per incident**

*Analysis by square feet of gaming space*

Amount	Less than 50,000 sf	50,000 – 100,000 sf	More than 100,000 sf
Less than \$1,000	32%	29%	22%
\$1,000 – \$5,000	36%	47%	41%
\$5,001 – \$10,000	20%	6%	7%
\$10,001 – \$50,000	4%	2%	7%
More than \$50,000	0%	4%	0%
Not sure	8%	12%	22%

## SECTION SIX: INTERNAL THEFT/FRAUD

**Results of detected theft/fraud incidents**



## SECTION SEVEN

# OPERATIONS TRENDS

### RESPONDENT COMMENT:

*“Unfortunately, our casino is more concerned with security issues than gaming. Easily 80% of our time and resources are spent watching security.”*

### EXPERT OPINION:

“Surveillance departments continue to consider table games as one of their most important areas for the use of their resources. Due to the volatility of table games this is certainly a wise application. However, areas such as guest incidents, internal theft and fraud, AML, concerns, sex trafficking are increasing. We are seeing more surveillance time and focus shift to these areas due to their increasing vulnerability and risk. Surveillance must also support administrative functions such as escorts, the monitoring of transactions, AML, and certain key operations. In my opinion, slots will develop into an area requiring additional resources due to the implementation of electronic table games and their associated threats.

We are seeing a slight increase in the use of information analysis and video audits. However, the majority of surveillance departments continue to use review of video and live patrol as the primary resource. There is a growing trend for the use of data/information analysis by proactive surveillance departments due to the successful detection of criminal and other activity using these methods.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

## SECTION SEVEN

# BEST PRACTICES



**Recommended Best Practices** to improve overall operations:

1. Perform an unbiased and dispassionate risk assessment of your property. Use a risk/likelihood matrix to determine where the areas of focus should be. Present this and get it signed off by senior management (not least so they know what you are doing). What are the main risks to the business? How likely are these risks? Focus on these areas.
2. Develop strategies to monitor and audit the entire gaming resort.
3. Audit each area on a regular basis. Know why you are looking at this aspect of the business, how it operates and what threat vectors it is vulnerable to.
4. Assign specific personnel to review and analyze key data and information. Be proactive, not reactive.



## SECTION SEVEN: OPERATIONS TRENDS

**Respondents ranked the list below in the order of importance regarding the use of Security & Surveillance resources.**

*The list is in descending order of importance:*

Table Games

Guests

Food & Beverage

Other

Slots

**Survey respondents ranked the list below in order of which type of operation creates the most impactful decision.**

*The list is in descending order of importance:*

Reviews

Live Patrol

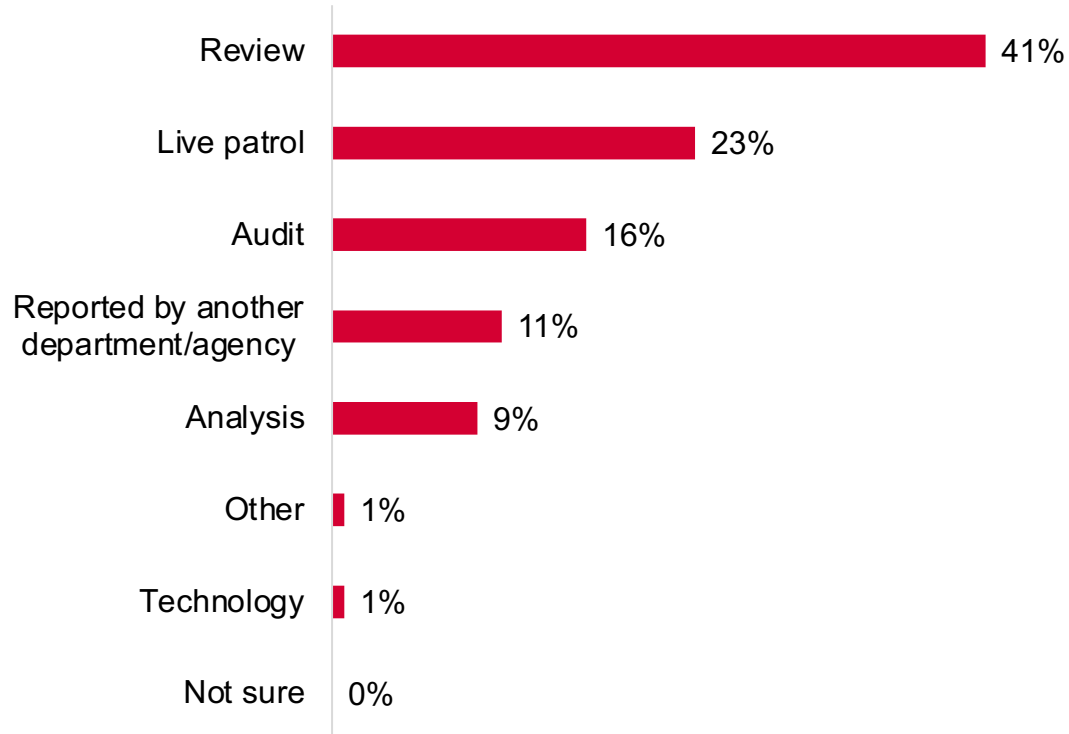
Information Analysis

Video Audit

Other

## SECTION SEVEN: OPERATIONS TRENDS

### How most surveillance detections are made

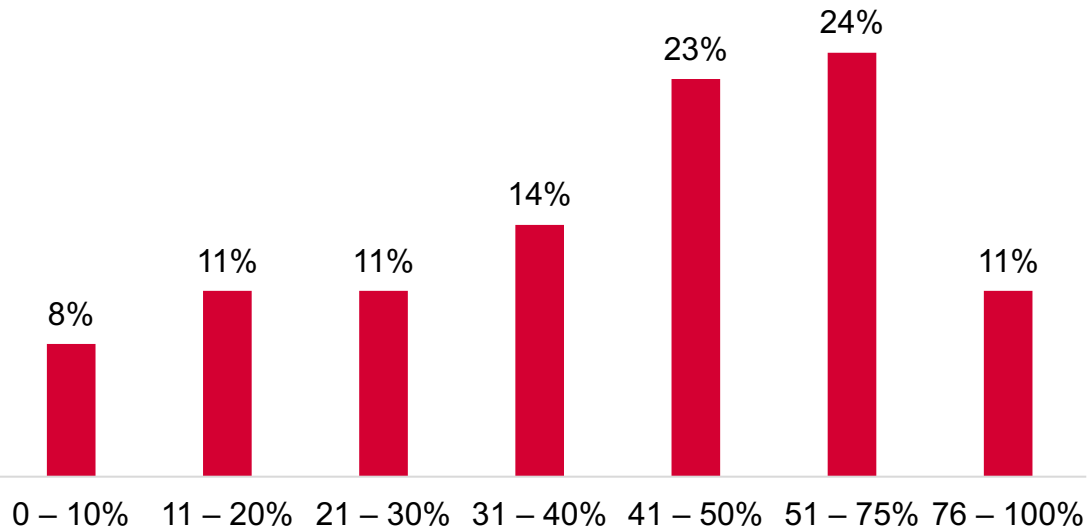


### Types of information/reporting tools available to your team

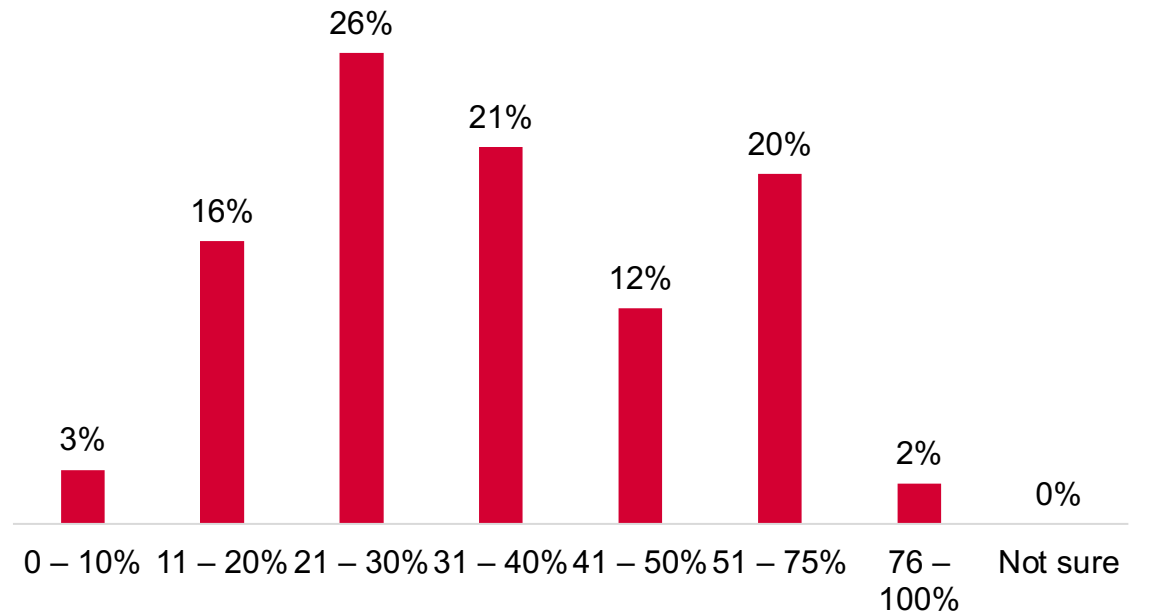


## SECTION SEVEN: OPERATIONS TRENDS

**Percent of time spent by agents on live observation/patrol**



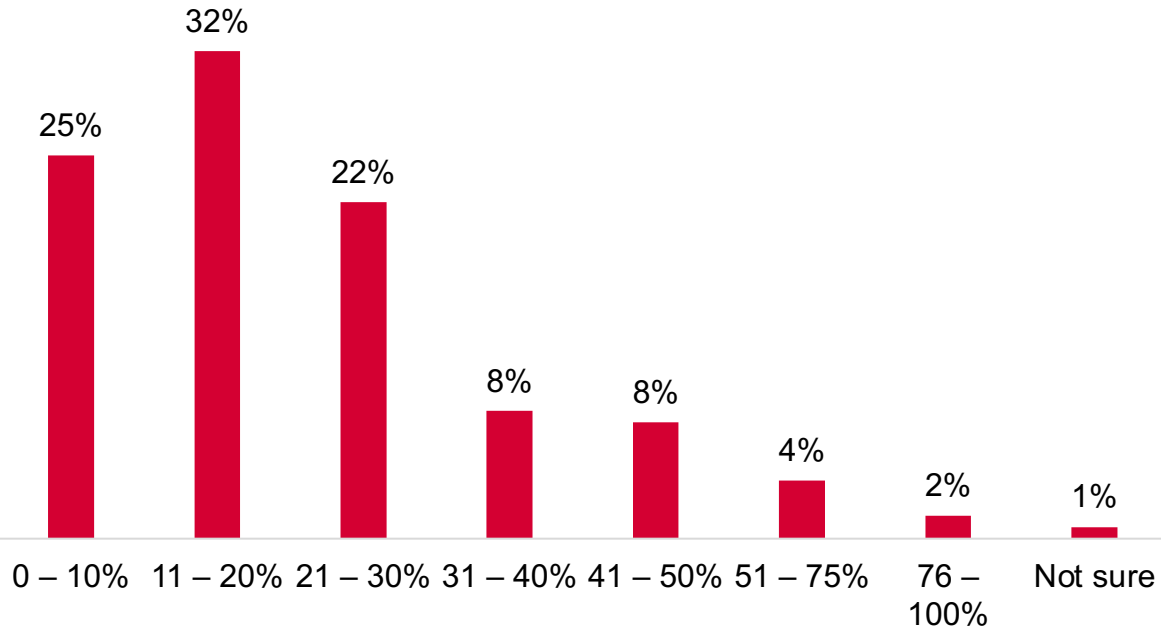
**Percent of time spent by agents on live reviews**



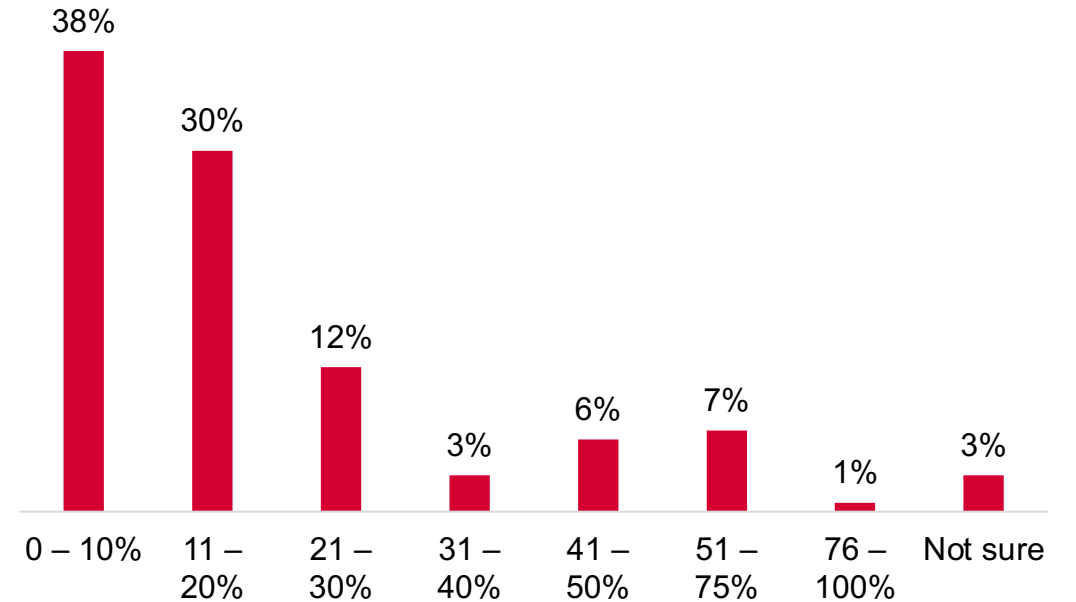
*(Percent of respondents who chose each category are in the columns)*

## SECTION SEVEN: OPERATIONS TRENDS

**Percent of time spent by agents on video audits**



**Percent of time spent on information analysis**



(Percent of respondents who chose each category are in the columns)



## SECTION EIGHT

# TECHNOLOGY

### EXPERT OPINION:

“The use of facial recognition technology is increasing, and surveillance departments are reporting that the use of facial recognition is having a fairly large or huge impact on their operations. More departments are planning to add facial recognition in 2025.

As gaming properties continue to increase their use of technology for the casino and their support departments as well as the rest of the property, their exposure to threats, both internal and external, will increase. The implementation and use of new technology is key to the effectiveness of a surveillance department for the detection of developing scams and frauds.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

## SECTION EIGHT

# BEST PRACTICES

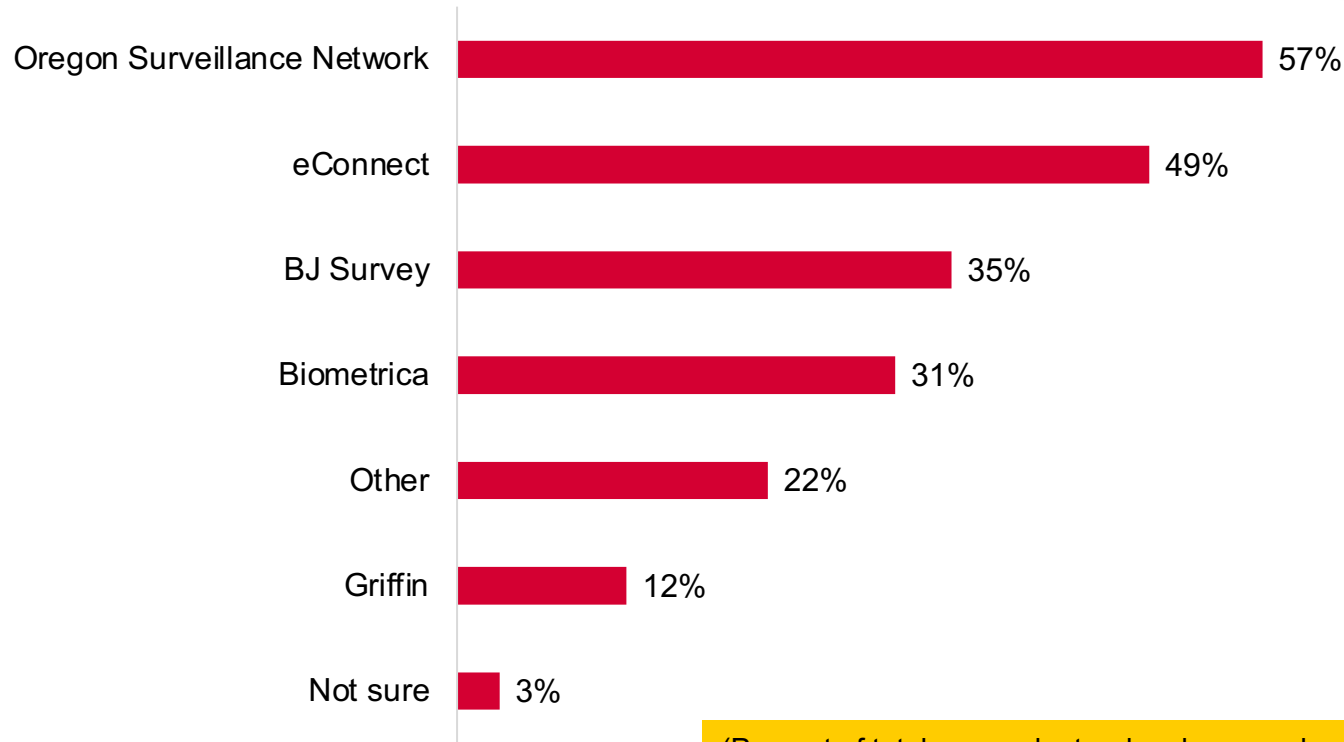


**Recommended Best Practices** to approach technology:

1. Facial recognition and other technology such as license plate recognition are powerful tools that when used properly will immediately and dramatically improve your surveillance department's detection rate and investigative ability. But they take curation and ongoing maintenance and manpower to respond to, and this should be acknowledged and catered to.
2. Operators should have a conceptual understanding on what they would like their technology, especially FR and LPR to actually do, and should prepare the framework that they will adopt when they deploy the technology. Items such as quality official reference images and the association of license plates with individuals of interest should be planned and consistently implemented.
3. Use the technology to operate; the bad guys already are!

## SECTION EIGHT: TECHNOLOGY

**Systems or databases used by surveillance**



(Percent of total respondents who chose each answer)

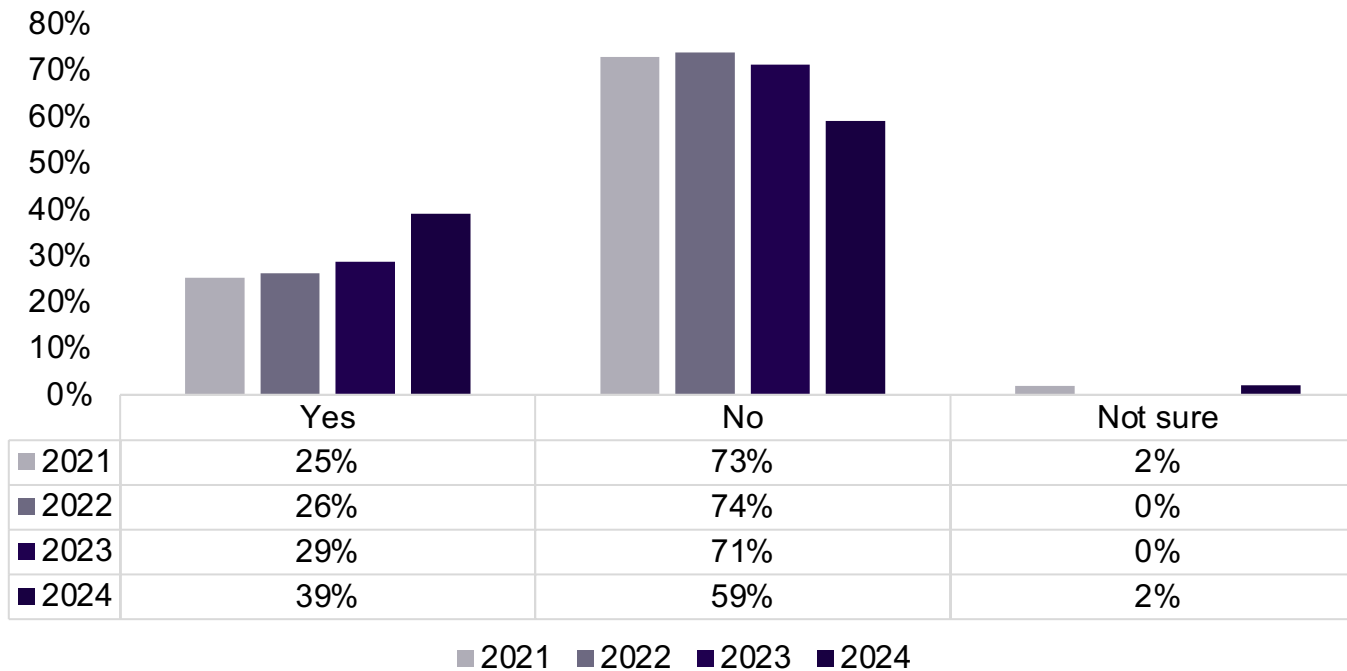


### RESPONDENT COMMENTS

*"I feel surveillance is being recognized as the information 'cash cow' that it is and is invaluable to operators."*

\*\* Respondent comments are not edited

**Percent of casinos using a facial recognition solution  
2021 – 2024**



## SECTION EIGHT: TECHNOLOGY

**2024: Percent of casinos using facial recognition**  
*Analysis by square feet of gaming space*

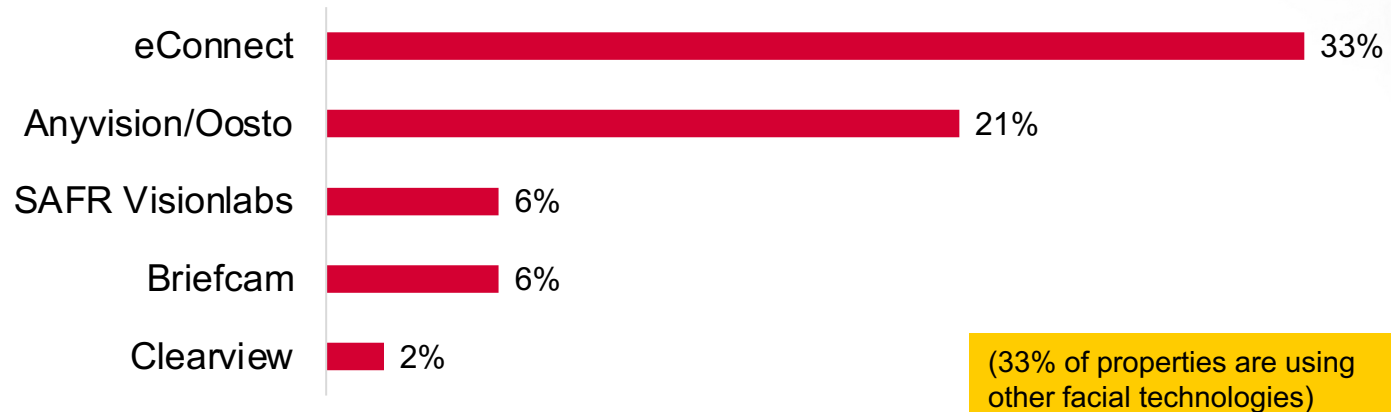
Usage	Less than 50,000	50,000 - 100,000	More than 100,000
Yes	21%	37%	51%
No	75%	63%	45%
Not sure	4%	0%	4%

In 2024, 55% (compared to 34% in 2023) of Tribal casinos are using facial recognition, compared to 25% (23% in 2023) of commercial casinos using this technology.

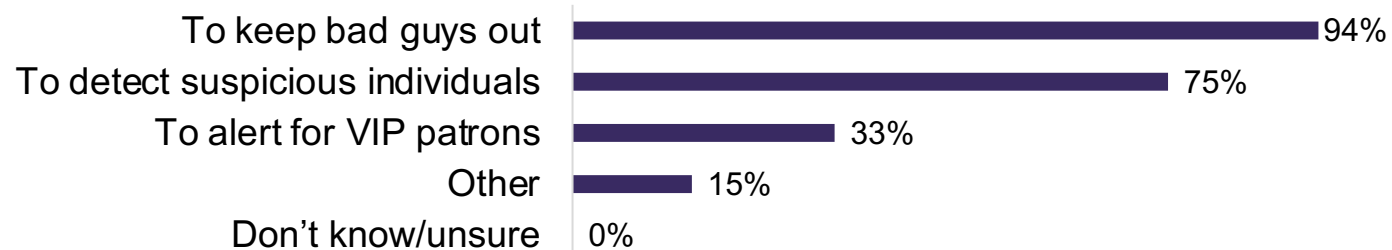


## SECTION EIGHT: TECHNOLOGY

### Facial technologies used

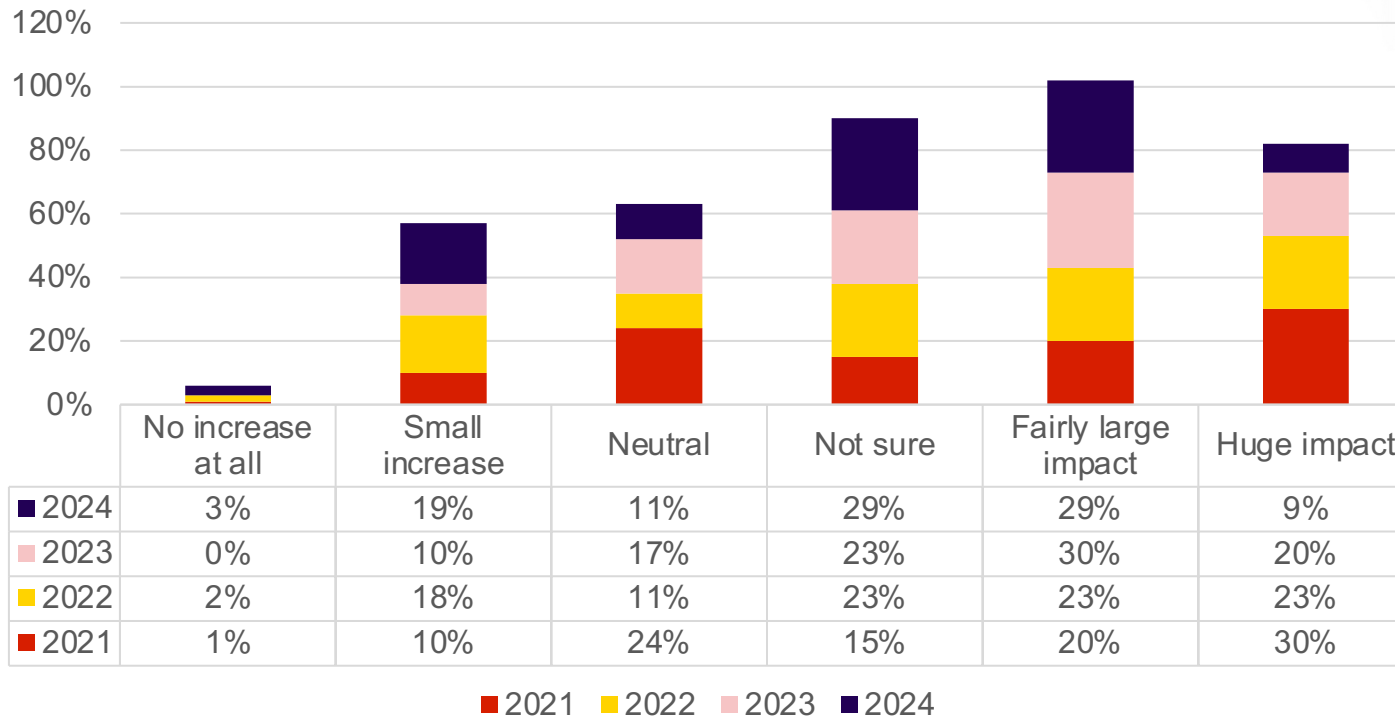


### How properties are using facial technologies



## SECTION EIGHT: TECHNOLOGY

**Impact of using facial recognition  
at casinos with this technology**



As shown in this chart, the percent of casinos that report a “huge” or “fairly large” impact from the use of facial technology has varied annually from:

2021: 50%

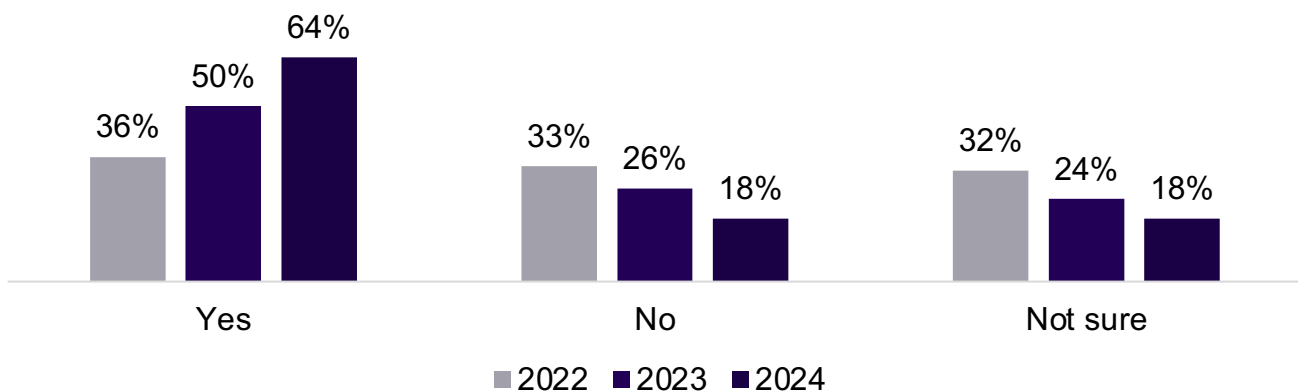
2022: 46%

2023: 50%

2024: 38%

One possible cause of this variance is that from 2021 to 2024, the percentage of all casinos using facial recognition technology increased from 25% to 39%. Also, the percentage of respondents who are “not sure” of the impact nearly doubled (from 15% to 29%), which indicates that properties are still on a learning curve in maximizing use of this technology.

### Plans to invest in facial technology by casinos that don't have it



	Overall	Commercial	Tribal	Other
Yes	65%	65%	64%	0%
No	18%	21%	11%	0%
Not sure	18%	13%	25%	0%

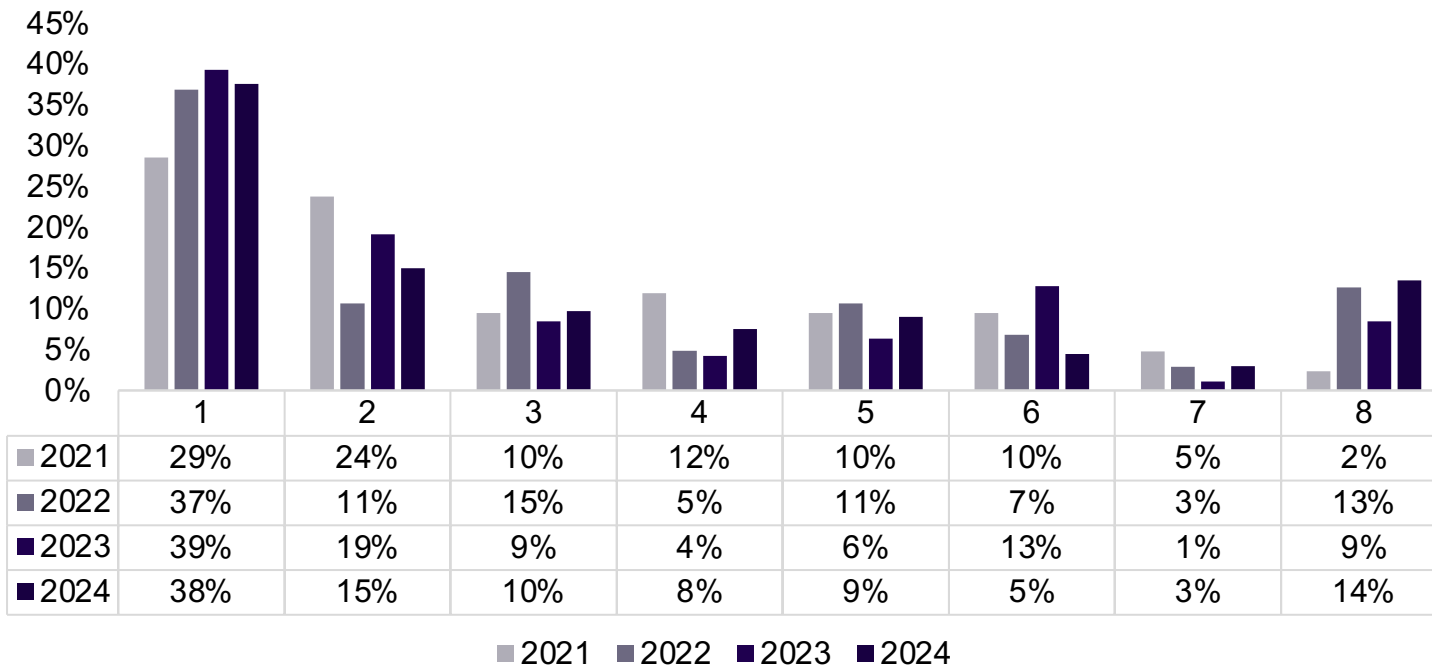
(Future investment plans were not included in the 2021 survey.)

## SECTION EIGHT: TECHNOLOGY



## SECTION EIGHT: TECHNOLOGY

**Percent of investigations aided by eConnect or other advanced technology  
2021 – 2024**

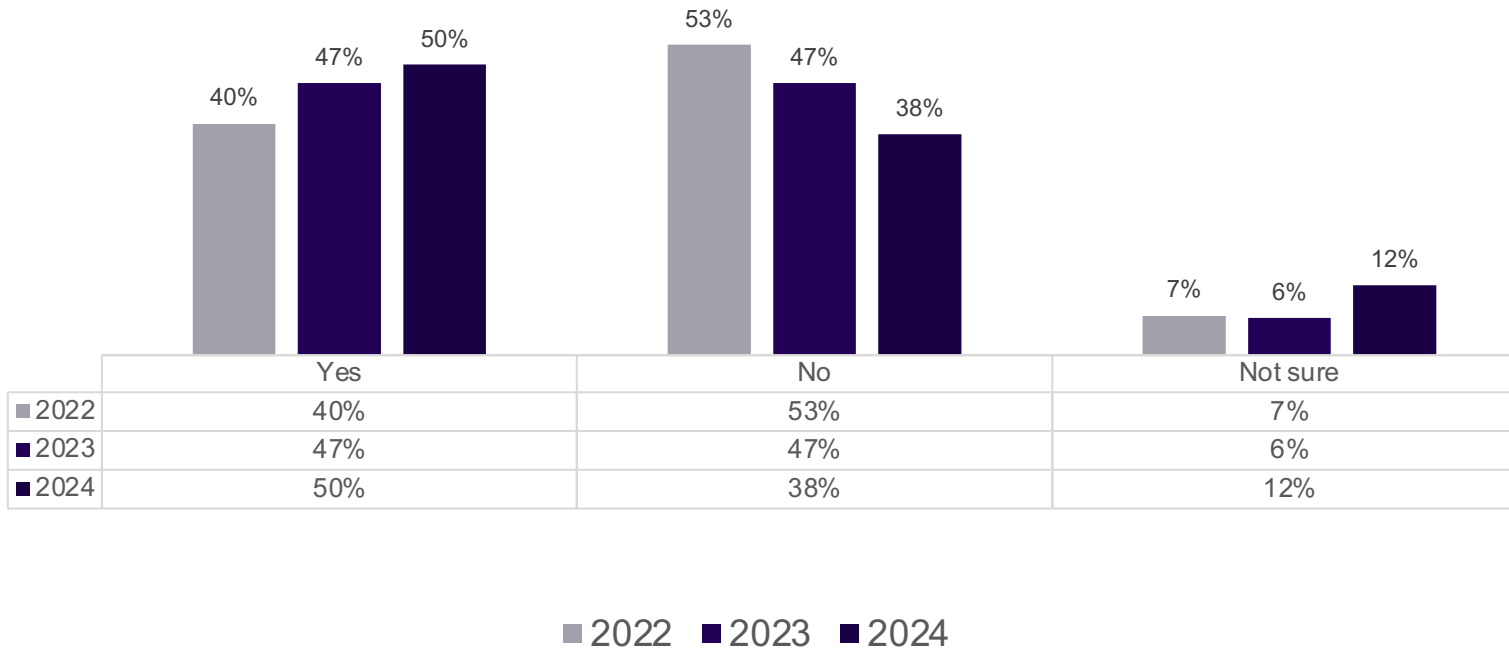


*\*eConnect is one of the sponsors of this survey.  
Their sponsorship in no way influenced the data  
collection, analysis, or reporting of information; nor  
will it be used in any sales capacity.*



## SECTION EIGHT: TECHNOLOGY

**Percent of properties with ID scan solution  
2022 – 2024**



(ID scan question was not included in the 2021 survey.)

**2024: Percent of properties with ID scan  
solution**

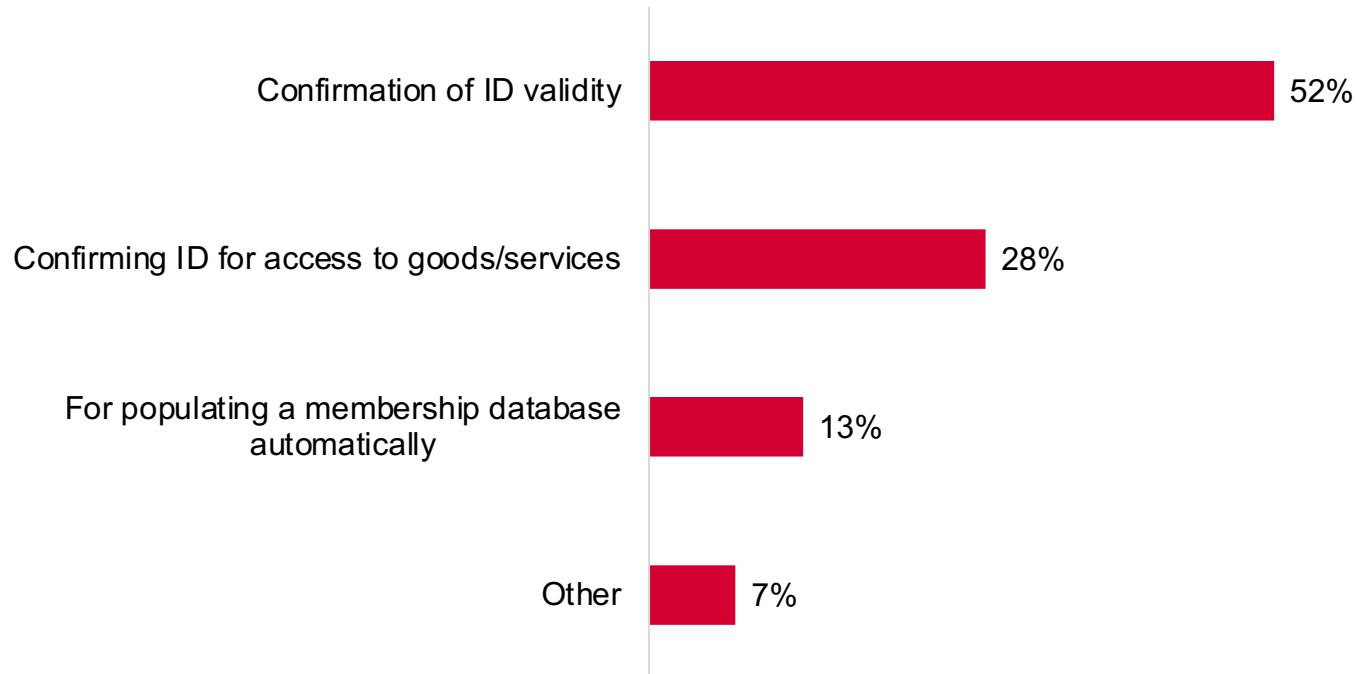
*Analysis by type of casino*

Usage	Commercial	Tribal
Yes	59%	39%
No	36%	42%
Not sure	5%	19%

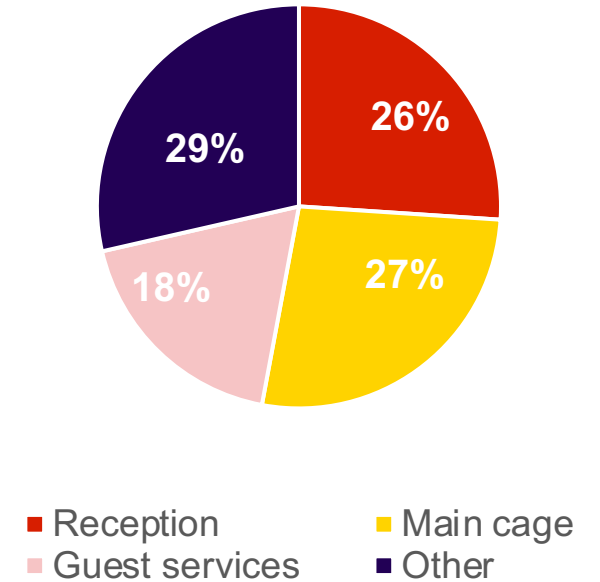
**Veridocs, Veriscan and ID Visor were the top three systems used in 2024 data.**

## SECTION EIGHT: TECHNOLOGY

**How ID scan solution is used**



**Areas where ID scan is used**



## SECTION NINE

# TOP THREATS

### EXPERT OPINION:

“According to the survey, internal theft and fraud continues to be the top threat to properties. The ability of an employee who, working independently or in collusion with others, to recognize system and operational vulnerabilities and to take advantage of them often results in the loss of thousands of dollars, and sometimes, considerably more.

While cheating is reported as the second highest threat, cyber security is a continuing and increasing threat, particularly the amounts of loss experienced by gaming properties due to ransom attacks and social phishing scams. Such attacks rival the losses taken by cheaters. Surveillance departments should do more to be part of the solution to deter and detect such activity and to assist in the recovery of operations.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP

## SECTION NINE

# BEST PRACTICES



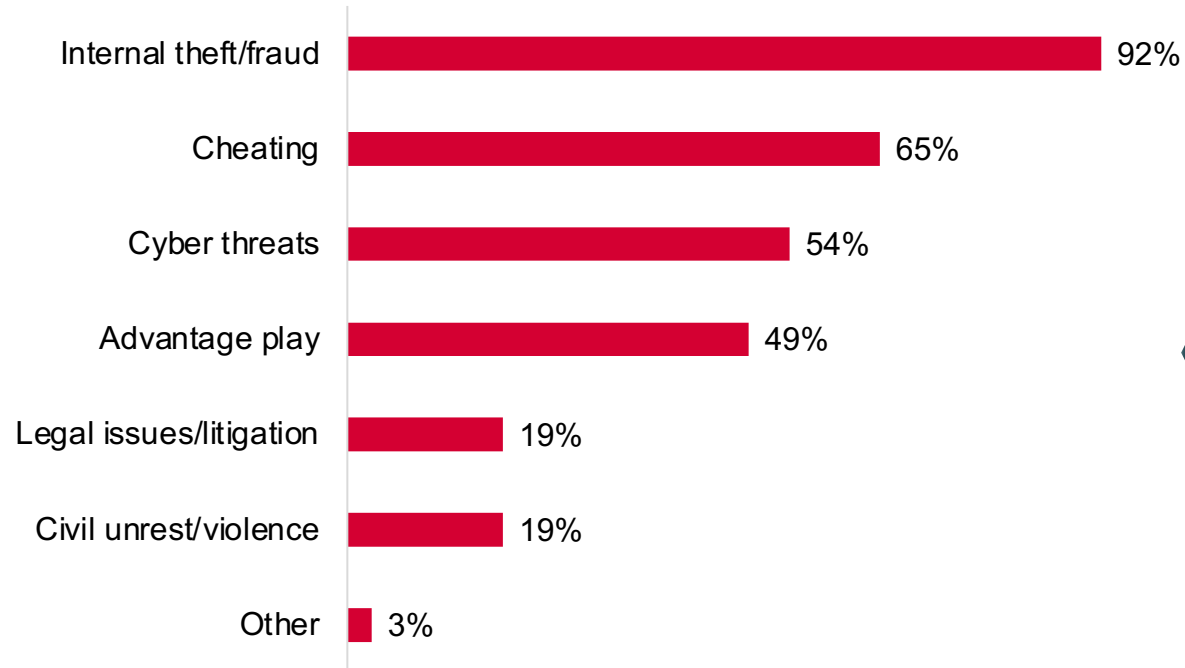
**Recommended Best Practices** to approach top threats:

1. Develop and implement strategies to observe, audit, and review all areas of the property. Though you can monitor key areas more often, you must check each area on a regular basis.
2. Cyber security is a significant concern. In the last year, gaming properties have lost hundreds of thousands to millions of dollars due to cyber attacks and phishing scams. Some properties have shut down for days and even weeks. Surveillance should – and must – be a part of the deterrence and detection package. Begin preparing how your property will respond after an attack. Lead the effort if no one else will.
3. To build on the above, talk with the gaming, slots and cage departments. Do you have a plan on what to do if the electronic systems go down? Do you even want one? Are you going to practice it? What can continue to operate and what will be lost? Will you end up simply monitoring an empty building (and if you are, then actually monitor it and lock down all areas with cash or cash equivalents, and ensure they remain secure). Prevention is better than a cure but running phishing training and the equivalents may be an IT responsibility.



## SECTION NINE: TOP THREATS

**Percent of respondents who chose each type of threat**



**The last survey question asked for any final thoughts about Surveillance. The following is a selection of unedited quotes from survey respondents:**

A global Casino watch dog what's app group..... which will help the industry grow in terms of security.

AI is coming fast. We need to be able to adapt quickly to its power as a surveillance tool.

Audits are becoming fundamentals in the surveillance operation. Every day surveillance agents are required to have specialized knowledge either at the moment of hiring or learning in the process such as data analysis, advantage play, New trends, cybersecurity, elderly financial abuse, Human trafficking, ludopathy, etc. Managers and directors are faced with challenges regarding inclusion and diversity...and that is one key topic for today's security.

I feel Surveillance is being recognized as the information "cash cow" that it is, and is invaluable to operators.

I have only recently taken over the Surveillance Department at my property and am currently assessing the operation. In addition to Surveillance agents, I have a Surveillance Fraud Dept. consisting of one investigator. My future plans include hiring additional agents and Fraud Investigators.

I manage the Surveillance oversight staff not the day-to-day Surveillance personnel who are under the Casino umbrella. Our team is 4 and we oversee regulatory compliance from a Surveillance view at all properties. First, is Surveillance doing their job, and also all other departments within the Casino environment.

Lacking Leadership affects the Surveillance department immensely. In addition lacking the Tools and resources to effectively do our job and protecting the casinos assets and safety and well-being of guest and employees

Looking forward to AI technologies for Surveillance

So much time is being spent on liability issues(guest falls, unruly guests and lost property) that live patrols and player observations have been diminished. The lack of job knowledge in other departments have placed a great strain on the surveillance teams.

I am proud to be a part of such a wonderful and unique group of professionals.

Surveillance challenges have been amplified since covid. Staffing remains a challenge with pay and finding qualified candidates. Regulatory agencies are behind on technology. Surveillance is somewhat isolated from management beyond the executive levels. It's also difficult to break through the dogma of necessary evil and the cost of doing business by some.

It would seem that Surveillance has been turned into nothing more than a video library. Too many other departments outside of Surveillance have access to the logs and video. Room integrity is near 0. Wages are not sufficient to hire anyone with experience. They are all flocking to the newest / higher paying properties. There is almost 0 time to train inexperienced new hires.

The company's need to invest more into payroll and equipment. Increase the number of department employees.

The main issue will always be getting personnel....then for them to be self driven to use the “tools” that have been given to them along with training. None of the technologies are any good if the room is filled with “spiders” that just react instead of being proactive.

Unfortunately our casino is more concerned with security issues then gaming. Easily 80% of our time and resources are spent watching security.

Will the primary function of surveillance change with the advent of AI and its integration?

Working in TGA Surveillance and Operations Surveillance has major differences.



There is currently a large push towards Surveillance departments adapting the use of data. I very much so believe that this is a very good thing and has it's distinct benefits, but I would caution that this predictive form of surveillance should not be viewed as a stand-alone method of action to fully replace good old-fashioned proactive observation. I would say that it is imperative that surveillance departments remain aware that there are still somewhat minimally available data points that can be harnessed to alert surveillance as to actions such as the dumping of a game, early stages of internal theft, precursors to violent activity, etc. My fear is that some departments may obtain access to data, analytics, LPR, facial rec, and then assume that the data (alone) will bring the events to them. There is a beautiful blend of the reactive, proactive, and predictive that pushes a surveillance department to the next level of expertise and ability.

Our biggest challenge is offering competitive pay to staff.

We're looking to add Biometrica with facial recognition.

The surveillance department has been integral in providing oversight in the gaming operations industry. However, adequate training procedures to manufacture effective surveillance operators especially those to help in collaboration with evolving technologies and cheating methods are not available. This is a challenge for surveillance directors and managers are facing. Its not the effectiveness of the systems being used, its the quality of the teams that are using this technology that needs to be improved to effectively learn how to detect, act and contain threats to the casino property effectively especially internal fraud from other department heads.

Analysis is done by a separate division within Surveillance. We have an Investigative Analysis division. Live analysis (running a player down) is done by the operators however.

We recently implemented License Plate Readers at all entry points for vehicles and have noticed a major positive impact, particularly with being able to deny entry to banned guests. We've also had issues with increasing numbers of Self Exclusion violators, many of which are found to have violated multiple days within retention once they are caught.



At Tribal casinos Title 31/BSA AML review requests continue to increase YOY. It would be interesting to see if this is a trend across all facilities or is it unique to Tribal Casinos. I'd also like to see data on what type of requests others are receiving, what is the outcome of the reviews surveillance provides.

Do surveillance personnel have to have a certified to work at your site. I.e a diploma or government certification through a college or university.

I'd like to see this survey include service-based questions: Does your operation provide "service" results towards customer service issues or Leadership support service ("HR Reviews")?

Increasing the use of AI to analyze surveillance data for predictive policing and other purposes is essential to keep pace with sophisticated theft and fraud tactics.

The more proactive we are, the less time we spend with Compliance reviews.

We had used Econnect, and two other POS systems in the past. All of these systems never worked like they were sold.

Derk right now I am not operating the Surveillance department. I am doing AML Compliance & Risk Management. I do know this is how the department is being run as I have only been out of it since last September.

The key is to not rely on Tech for all of your resources, we need to remember that old school knowing how to do the job to include counting cards and advantage playing.

We have multiple properties for our location. My answers are based on the largest resort.

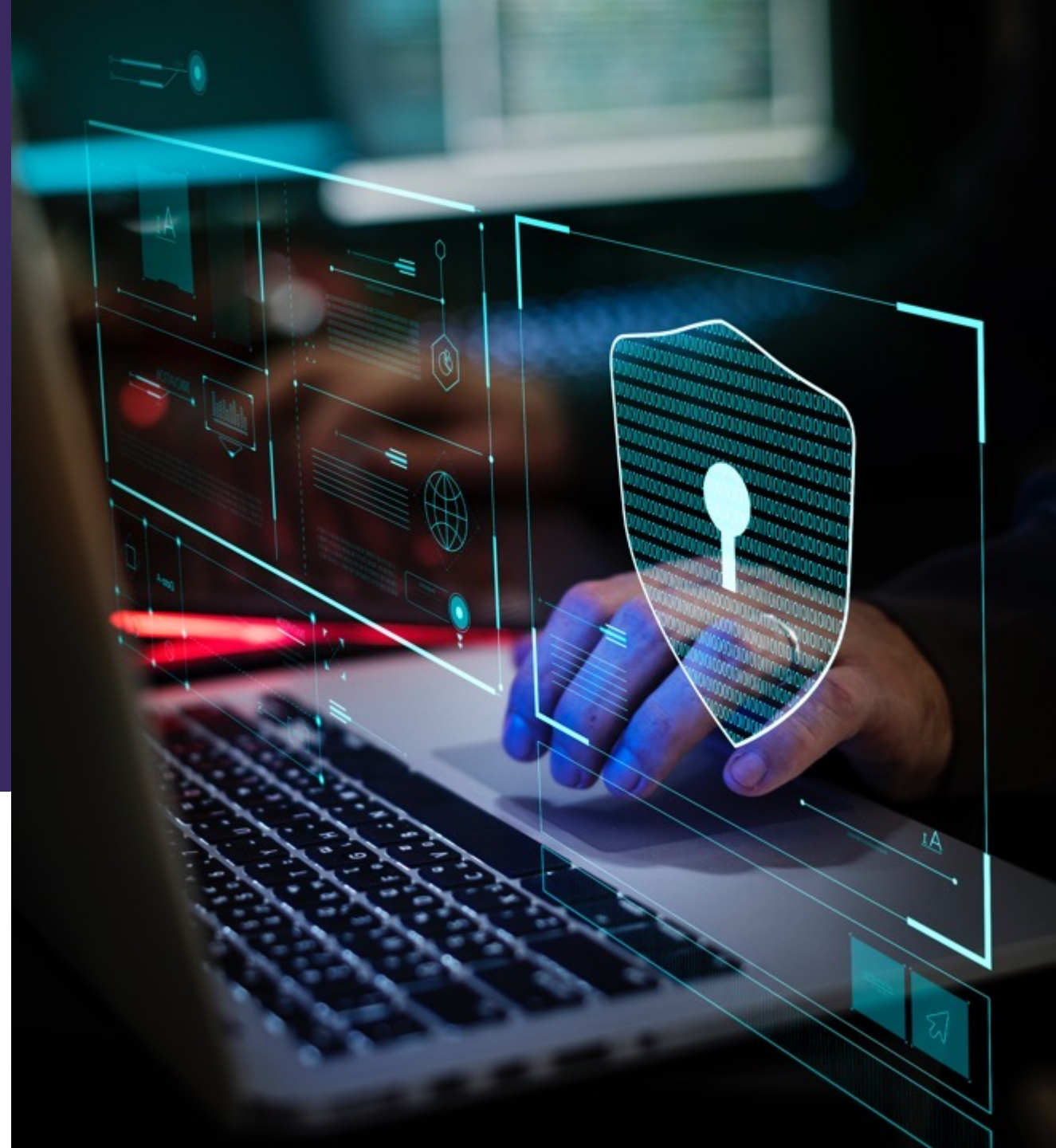
AML has become a significant aspect of the operation

2024 EXCLUSIVE & COMPARISONS

# Cybersecurity Survey Report



International Association of Certified Surveillance Professionals



# CYBERSECURITY SURVEY

The 2024 cybersecurity survey is a special section introduced last year. It was conducted separately before the 4<sup>th</sup> annual International Casino Surveillance Survey was deployed. The 2024 survey included **68 respondents** from the U.S. and Virgin Islands, Canada, Hong Kong, the Philippines, Puerto Rico, Great Britain, South Korea, Bulgaria, and Macau.

## WHY CYBERSECURITY IS IMPORTANT TO CASINO SURVEILLANCE PROFESSIONALS:

Casinos are becoming increasingly vigilant regarding cyber threats. In our 2024 survey, respondents reporting training to identify, and report cyberattack attempts increased to 76% from 58% the previous year. This statistic underscores the heightened awareness and proactive measures being adopted by casino management to safeguard their operations against cyberthreats.

The cybersecurity preparations that casinos have today may be inadequate tomorrow, according to Bitdefender. In a June 2024 Threat Debrief, Bitdefender said there are notable parallels between the COVID-19 pandemic and the evolving landscape of cybersecurity threats. Just as COVID-19 has undergone mutations resulting in numerous variants, ransomware exhibits similar variability. LockBit is the predominant ransomware variant, having compromised 177 companies and organizations in June 2024 alone. The United States is the principal target, with an incidence rate six times higher than that of the next most affected country, the United Kingdom.





# CYBERSECURITY SURVEY

2024

Q: On a scale of 1 = "no threat," to 10 = "major threat," how would you rank the threat of a cyber attack at your property? **6.45**



Q: On a scale of 1= "It wouldn't affect us at all," to 10 = "It would shut us down till we restored computer systems," how do you think a cyber attack that locked up the computer systems at your property would impact your operations?



## Significant Finding:

The change has not been significant in ranking a cyberattack as a threat and the impact that a cyberattack would have on a property from 2023-2024.

2023

6.92



7.75

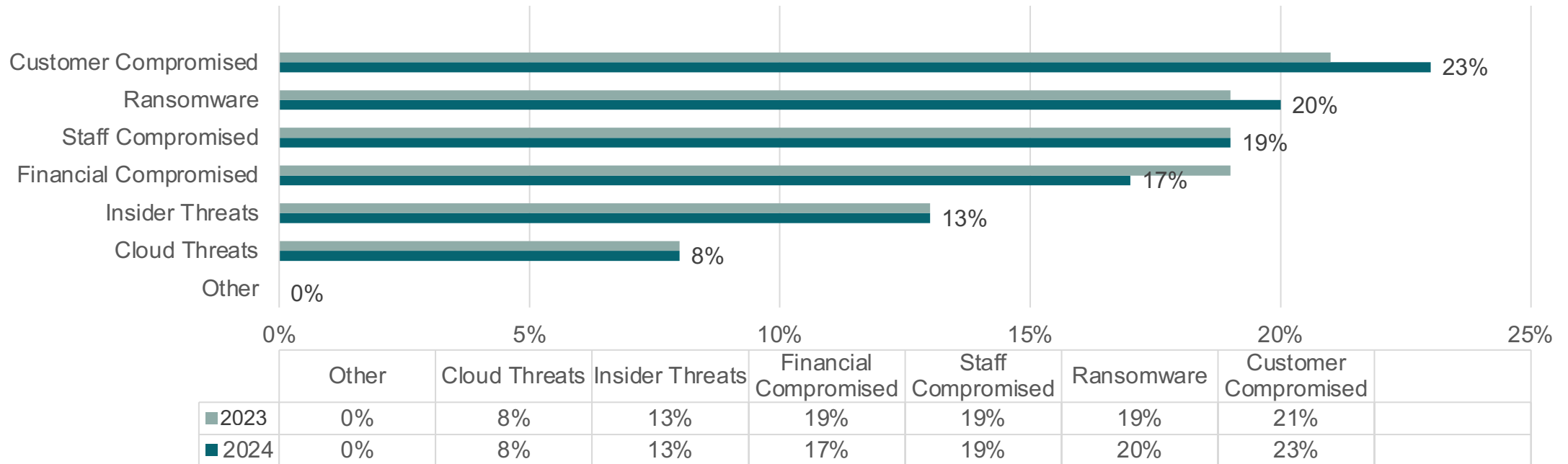




# CYBERSECURITY SURVEY

**Q: In the event your property experienced a cyber attack, in what areas do you feel particularly vulnerable?**  
*(choose all that apply)*

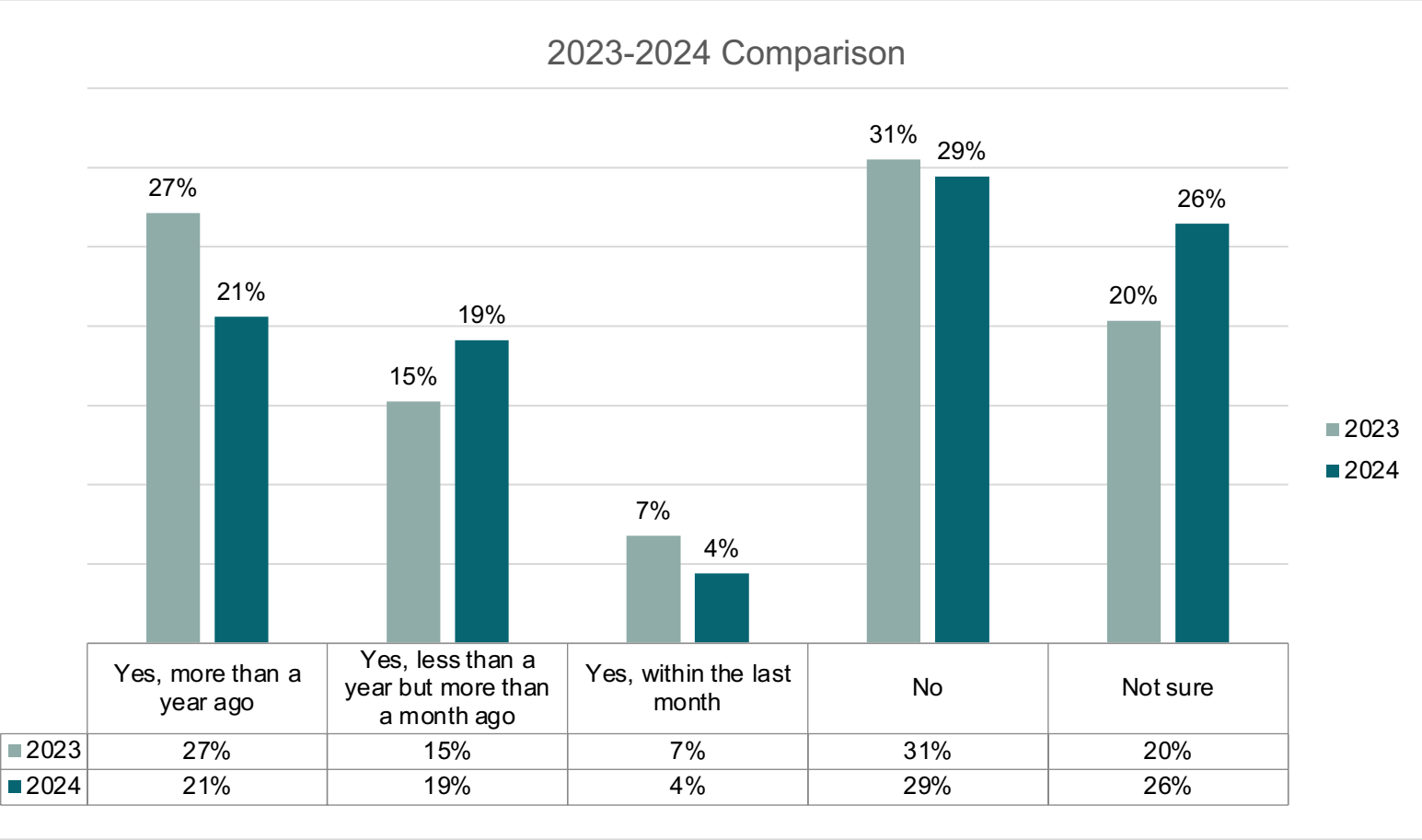
Comparison 2023-2024



**Significant Finding:** There are no statistically significant changes in the answers from respondents to this question from 2023 to 2024.

# CYBERSECURITY SURVEY

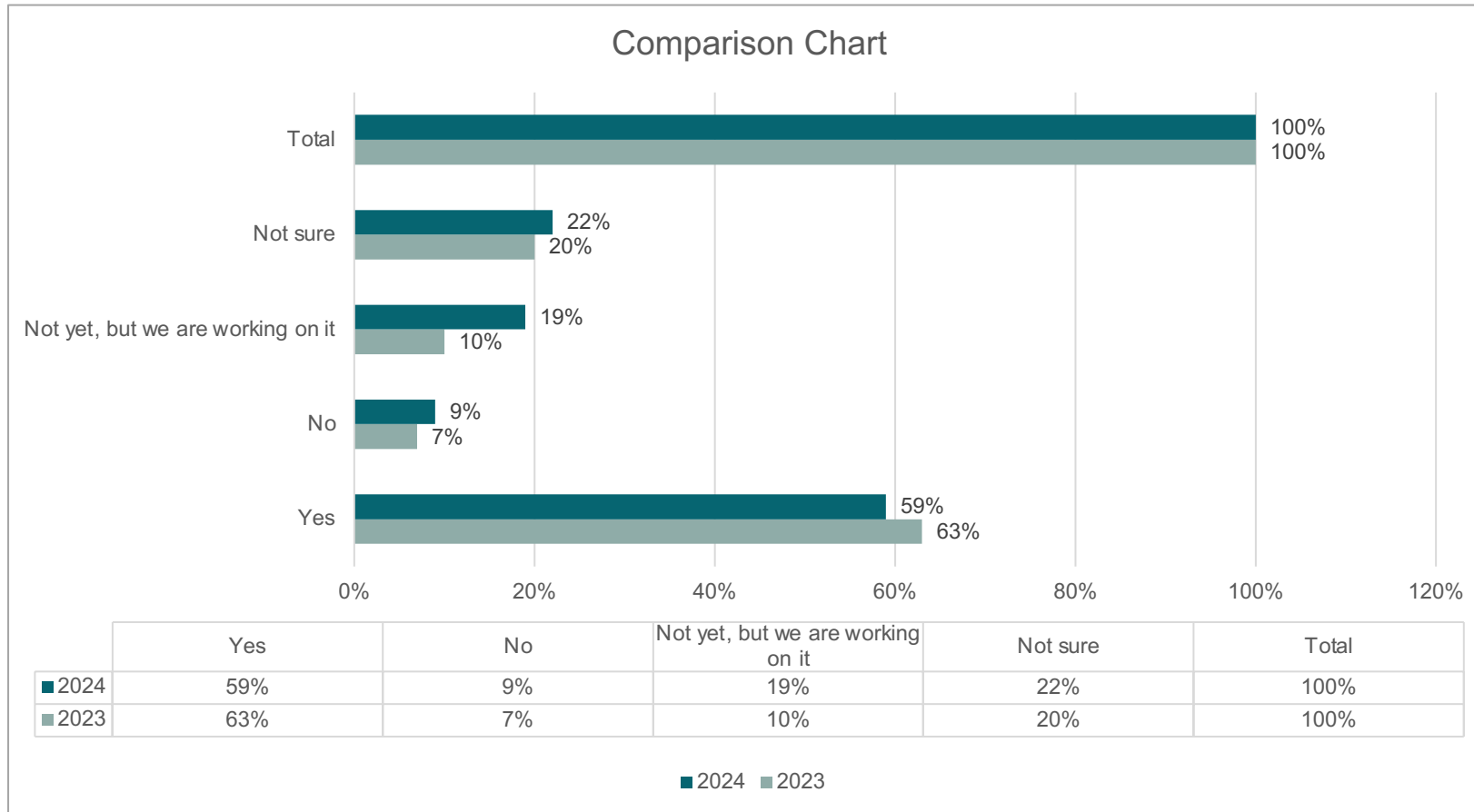
Q: Do you believe that you have been targeted by a cyber attack?



**Significant Finding:**  
There is a 6% drop in the number of respondents that answered YES to having been targeted more than one year ago.

# CYBERSECURITY SURVEY

**Q: Do you have a plan in place to react to a cyber attack or threat?**

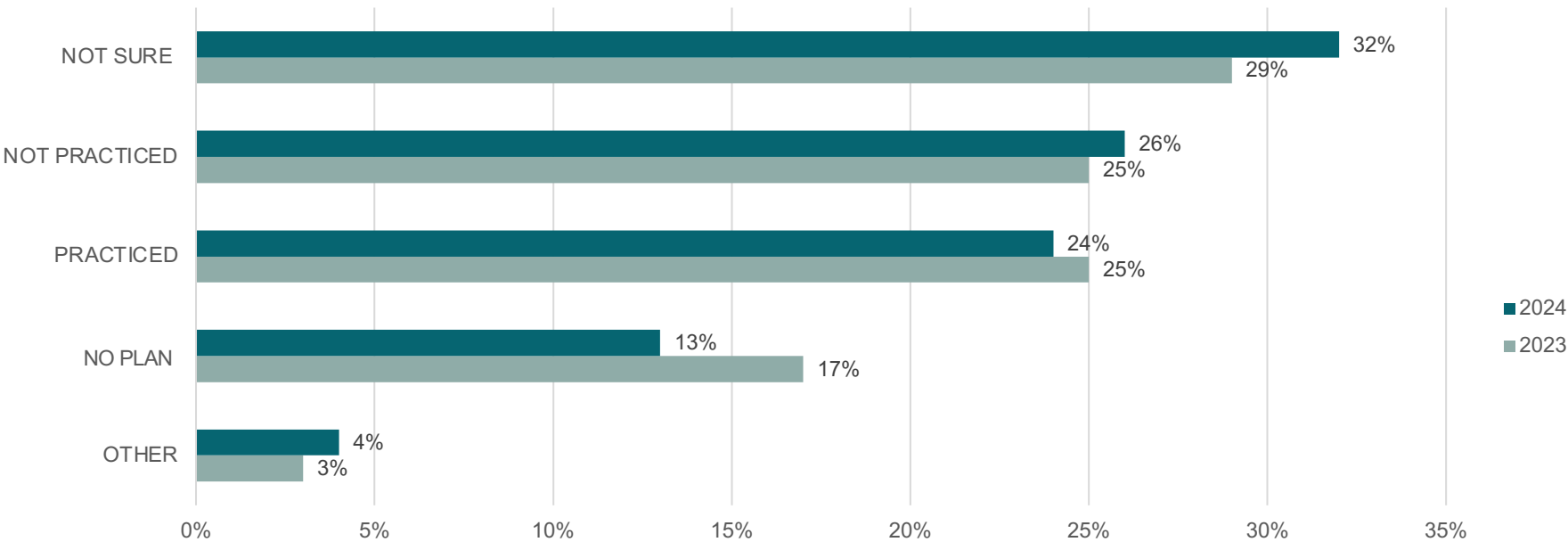


**Significant Finding:** There is little change in respondents' answers to this question, with the exception of a 4% decrease in the number of respondents who report having a plan in place to react to a cyber attack or threat.

# CYBERSECURITY SURVEY

Q: Have you practiced a response plan in case there is a cyberattack at your property?

Comparison 2023-2024



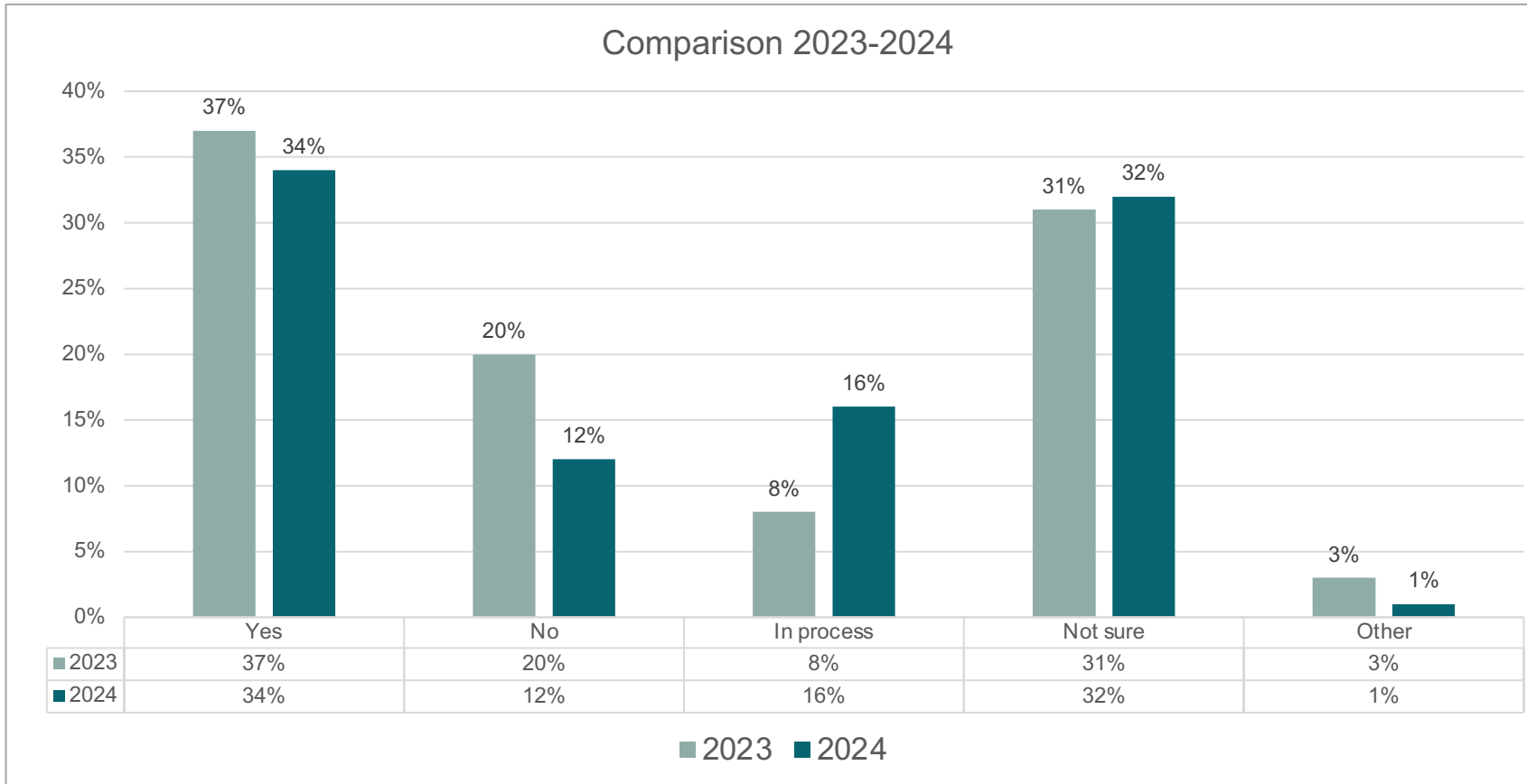
	OTHER	NO PLAN	PRACTICED	NOT PRACTICED	NOT SURE
2024	4%	13%	24%	26%	32%
2023	3%	17%	25%	25%	29%

**Significant Finding:** 24% of respondents in 2024 report that their property has practiced a response plan, compared with 25% in 2023, so this is basically unchanged. What is concerning is that 32% of respondents do not know if their property has practiced a response plan. This would seem to indicate that there has not been a practiced response.



# CYBERSECURITY SURVEY

**Q: Does each department at your property have a plan to operate manually should all or some computer systems fail?**

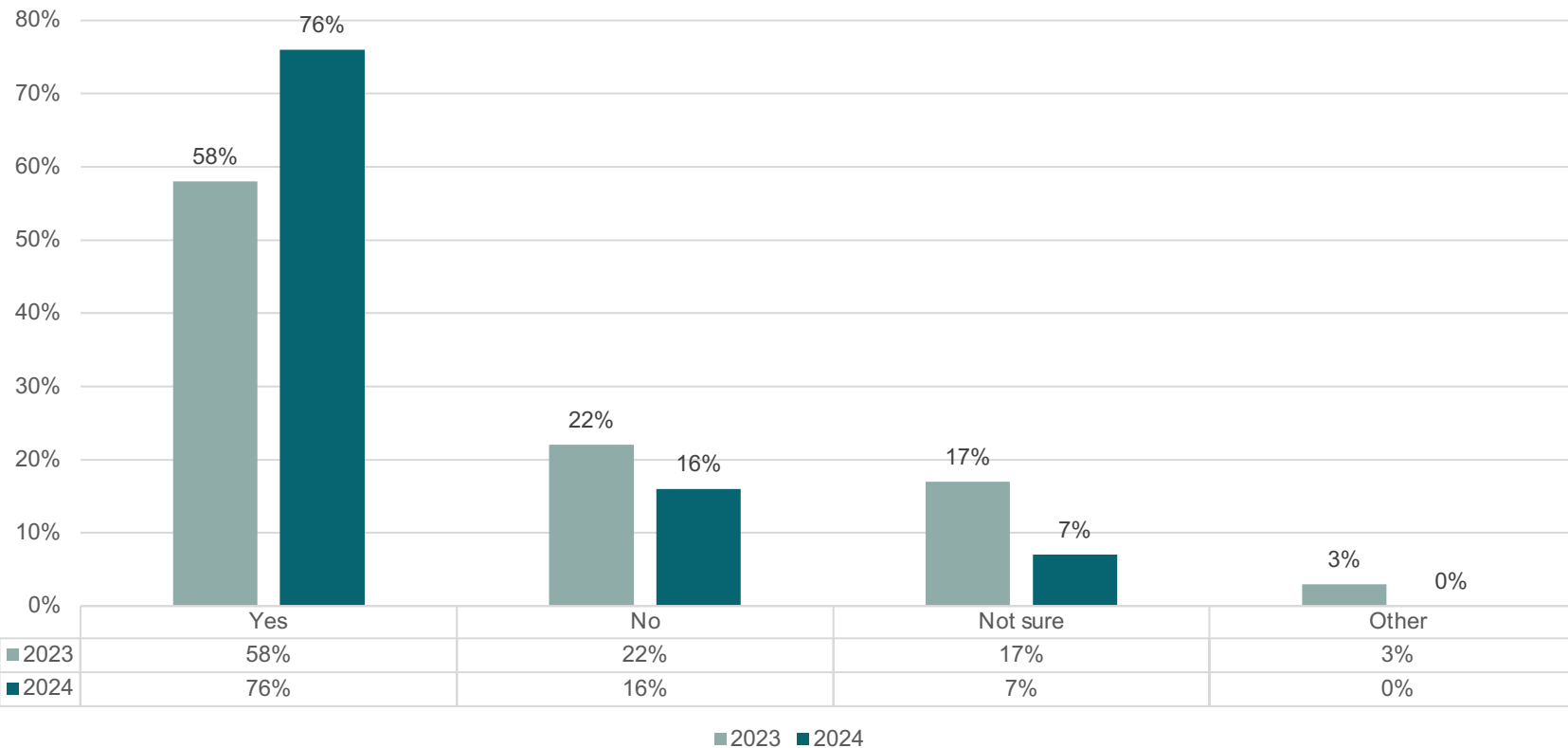


**Significant Finding:**  
There is no significant change in 2024 from 2023.

# CYBERSECURITY SURVEY

**Q: Are all employees provided training to identify and report a cyber attack attempt?**

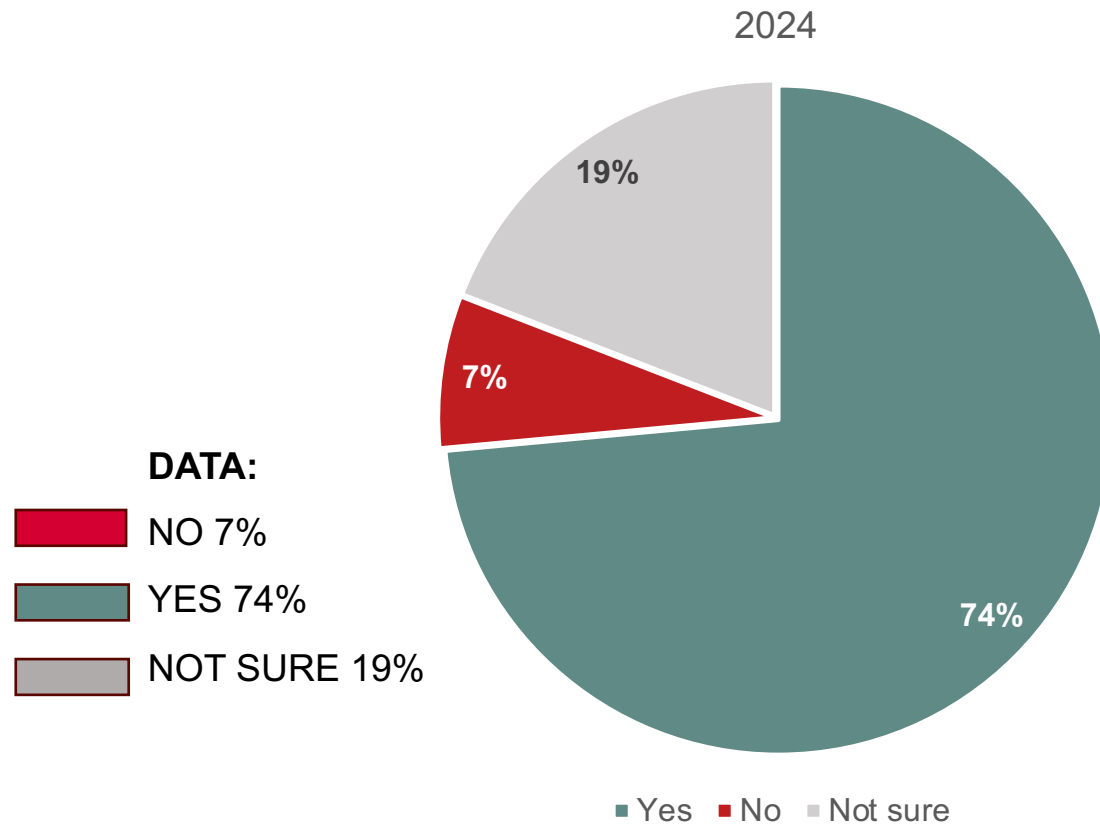
Comparison 2023-2024



**Significant Finding:** There is a significant change in the number of respondents who report that all employees have been provided training – 76% in 2024 compared to 58% in 2023. This indicates that casino properties are better prepared to identify and report cyberattack attempts.

# CYBERSECURITY SURVEY

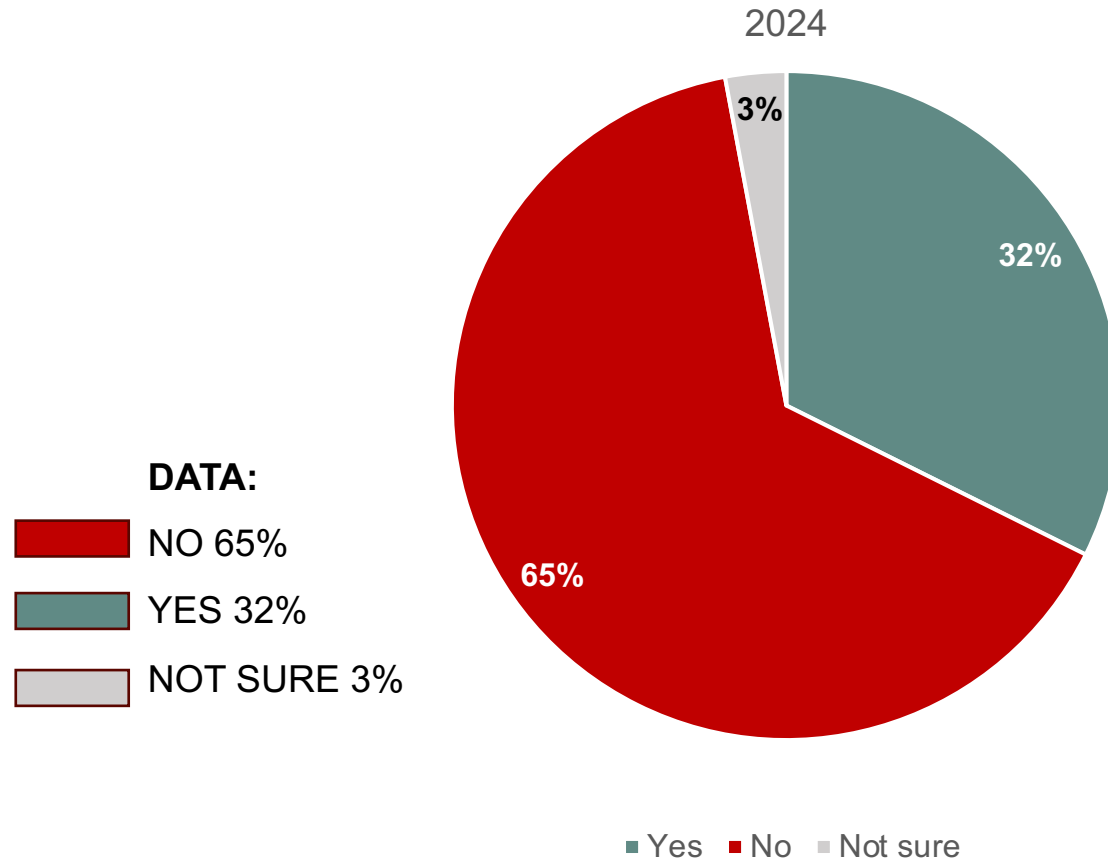
**Q: Due to the increased cyberattacks against gaming properties, has your property increased its preparation for events?**



**Significant Finding:** This question was not asked in the 2023 survey so there is no comparison to the previous year. 74% of respondents report that their property increased its cyberattack preparations, while only 7% said their property did not increase effort in this area.

# CYBERSECURITY SURVEY

**Q: Have you been asked by senior leadership to become more involved in planning to deter or recover from a cyberattack?**



**Significant Finding:** This question is new in the 2024 survey. 65% of respondents report that they have not been asked by senior management to become more involved in deterrence and recovery from a cyberattack, and 32% report that they were asked to become more involved. This highlights an area for potential improvement in prioritizing cyberattack awareness among senior management.



## CYBERSECURITY SURVEY | OPEN ENDED TEXT RESPONSES 2024

### Q: Is there anything that you would like to add regarding cybersecurity/attacks at casino properties?

#### Responses (unedited)

We run a corporate structure so most cyber security control is handled by our corporate office. Leaving us with little control of a cyber security risk. I know we have things in place but they are not relevant to those on property level outside of being able to do things manually without computers. And I know our departments are not trained on that.

Training of all staff to be diligent in prevention of opening possible gateways is a must.

This function is handled by the I.T. department of the operation. I do not have their plan so my answers are mostly a guess. I will try to get a copy of the plan and review.

All of our USB ports were blocked after the ransomware crashed our whole system. IT felt it was needed. But honestly, I felt it was due to ransomware email that was opened. That USB ports blocked were not the main issue it was bad email sent to an employee.

The general phrase cyber attack is very broad. Some teen attempting to break in as a joke is not the same threat as a team of experts using sophisticated methods to either steal patron data or install ransom ware is far more serious. The gamut between those two extremes is large. Most protection software and hardware will stop the attackers at the low end of the spectrum, but our I.T. team has almost a dozen professionals on staff to protect the casino from the professional hackers.

I think it would be interesting to distinguish between phishing and full scale cyber attacks for the purpose of gathering data.

Cyber bad guys/gals suck!

## CYBERSECURITY SURVEY | OPEN ENDED TEXT RESPONSES 2024

### Responses (unedited) 2024 Continued

We should have a strong firewall to prevent and protect the significant information of our company.

I'm sure our property has a plan. We take online informative power points and testing..

Cyberattacks against the property has been addressed, the surveillance department is completely separate from the casino/Hotel network. The surveillance network is a closed network.

I think many people rely too heavily on outside vendors..."oh they have security to protect our cloud data" or "they set up our firewalls we are safe". I think IT personnel need more cybersecurity training to take their own precautions and implement their own security measures, opposed to relying on someone else.

I found this survey difficult to answer. Cybersecurity/attacks can be interpreted in many ways - insider threats, social engineering, malware attacks, ransomware, phishing/vishing, smishing, spoofing, etc. so to formulate answers based on the umbrella of cybersecurity/attacks was not easy when each of these areas have different variables to consider.

Being made more aware of current plans in place, and what my team can do to reduce weaknesses and, especially, recover from a cyber security attack.

I believe that it is something that we understand is dangerous but lack knowledge.

# RELIABILITY OF THE DATA



This study was conducted by Debra Hilgeman, Ph.D., an experienced casino marketer and research expert who has been a part of Raving's team since 2006. She designed the survey and protocols for the survey to be administered online using professional survey software. Casinos operate in highly competitive environments and some of the questions ask for proprietary information. Anonymity is guaranteed for all survey participants. No information or reports will contain any information that can be used to identify any individual or casino.

## **Reliability and Validity of Data:**

In large-scale consumer research, metrics such as 95% reliability and 5% margin of error are the standard. But in studies like this based on substantial proportions of small overall populations, the larger concern is validity – whether elements of the population are appropriately represented. The participating casinos here show good distribution across size, geographic area, and services and although the sample is self-selected, it constitutes a good representation of the entire industry. There are not enough data points for inferential statistics, but the description of the industry through its summary characteristics provides a good basis for reviewing overall trends and an opportunity to compare respondents' own casinos with others in the industry on key measures.

# CONCLUSION



## CONCLUSION

“It is apparent from the survey results that properties are recognizing that cybersecurity is a concern that should be addressed. There are properties that are training their employees to recognize cybersecurity attempts, formulating response plans, and practicing those plans. However, there are many properties that remain behind the curve despite the number of attacks that occurred in 2023, and the losses experienced by those hit by cyber criminals. Significantly, surveillance (and security) are not yet considered part of the solution to prevent or detect such attacks, nor are they a part of the recovery plan. It is in these areas that surveillance and security can and should provide support.”

Derk J Boss, CFE, CPP, CSP  
President, IACSP





International Association of Certified Surveillance Professionals

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*For questions or additional information about this report, contact:*

**Dan Cox, Client Services Manager | [dan@betravingknows.com](mailto:dan@betravingknows.com)**

Tel: 775-329-7864 | Cell: 503-444-1971

Raving – Reno, NV 89503 | [Betravingknows.com](http://Betravingknows.com)