A three-step model to reduce inventory shrinkage and increase profitability

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ABSTRACT

Capital One projects that in 2024 inventory shrinkage will reach $132 billion in losses globally, compared to $112 billion in 2022 (Capital One Shopping Research, 2024). By comparison, Target's 2024 annual revenue is projected to be $107.57 billion (an increase of .15% over the previous year (Macrotrends.net). So, retail sales will only increase by .15% while inventory shrinkage will increase by almost 18% and the problem is getting worse! Inventory shrinkage includes accounting errors, other operational issues, and theft, all of which have significant financial consequences for retailers. These financial consequences emphasize the importance of implementing effective security measures and purchasing necessary loss prevention technologies.

Although inventory shrinkage most directly impacts business owners, others are also affected. Employees, vendors, shippers, insurance carriers, and even state and local tax agencies are affected by inventory shrinkage loss. States lost $4.345 billion in tax dollars due to retail theft in 2022 (Springgate, 2024). Neighborhoods are often especially hit when retail crime forces stores to close, fire employees, and relocate to safer economic zones. It is also estimated that 30% of business bankruptcies are due to employee theft (Bell, 2021, cited in Workforce.com).

In this paper, the author discusses inventory shrinkage including the three main causes of shrinkage—internal theft, external theft, and process/control issues. A three-step model follows this to address inventory shrinkage and improve business profits.

Keywords: inventory management, internal theft, external theft, inventory shrinkage

INTRODUCTION

The three quotes below are from a controversial novel, "Shoplifting From American Apparel" by Tao Lin, a Taiwanese American author, published in 2010. The book shares the story of a young writer, based loosely on the author, as he finds his way through hipster culture, social media, and relationships.

> "Shoplifting is a way to take back what the world owes you."
>
> "The rush of adrenaline you get from stealing is like no other high."
>
> "I've never felt more alive than when I'm stealing."

Source: Lin, T. (2010). Retrieved 01/10/2025 from https://www.bookey.app/quote-book/shoplifting-from-american-apparel

Sadly, these quotes highlight the increasingly cavalier attitude that theft is perfectly acceptable social behavior and is "no big deal." Inventory shrinkage eats away at business profits, so much so that theft can force some businesses to close or go out of business. Although inventory shrinkage can be caused by poor inventory management, theft accounts for two-thirds of inventory shrinkage. Savvy business owners pay close attention to inventory shrinkage levels, however, some business owners, especially small business owners, do not seem to understand what inventory shrinkage is and how it impacts their bottom-line profitability.

Table 1 National Retail Theft Survey

	High Risk	Low Risk
I have *frequently* associated with fellow employees who admitted they were stealing merchandise from the company.	18.4%	5.4%
I am **not** an honest person and might steal or cheat.	9.3%	1.7%
I could be tempted to steal from my employer.	26.7%	7.8%
I might help friends steal from my company.	14.6%	1.3%
I have stolen money within the past 3 years.	17.5%	5.2%
I have stolen merchandise within the past 3 years.	15.9%	4.5%
I would possibly use marijuana/illegal drugs in the future.	23.1%	6.5%
I have previously sold marijuana or other illegal drugs.	4.3%	0.9%

National Retail Theft Survey. Retrieved 12/31/2024 from https://nrf.com/research/the-impact-of-retail-theft-violence-2024

According to Brandon Ginsburg, CEO of Apparel Magic, a leading inventory software company for the apparel industry, inventory shrinkage arises when the actual physical inventory is less than the inventory listed on the company's inventory record. Put another way, the business inventory listed in your business account journal has either disappeared or is damaged and not saleable. The business equation to calculate the inventory shrinkage rate = (Documented inventory – Actual inventory) / Documented inventory. To convert your inventory loss rate into a percentage, multiply it by one hundred.

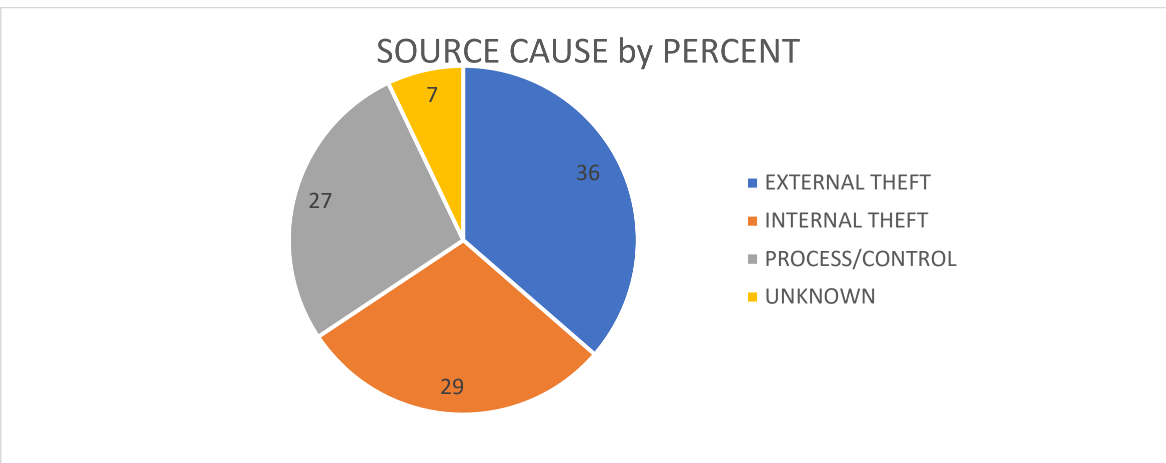
Why people steal

Through research, organizational psychologists provide insight into why people steal, and their rationale may surprise you. Although some argue that theft is prompted by opportunity, research indicates that some employees steal for other reasons and have no problem associating with fellow employees who steal. Some employees seek revenge or feel entitled to steal, while others carry addictions that fuel thieves. From a pool of 19,165 job applicants, 12,283 (64.1%) were rated "low risk" and 3,700 (19.3%) were rated "high risk", resulting from the applicant's admissions of prior misconduct, and their viewpoints concerning what constitutes honest and dishonest behavior (National Retail Theft Survey, 2024).

What causes inventory shrinkage?

Inventory shrinkage can be ascribed to several factors. The main causes, however, include employee theft, shoplifting, vendor fraud, administrative mistakes, and shoplifting. Although employee theft is less common than shoplifting, nonetheless employee theft costs businesses an average of more than $1,550 per dishonest employee. In addition, internal theft can be challenging to uncover and stop.

Figure 1 Causes of Inventory Shrinkage



External theft, through shoplifting, CapitalOne reports that retail stores catch shoplifters approximately 2.0% of the time and that the average shoplifter is arrested once out of every one hundred incidents. Smart retailers are beginning to use artificial intelligence-powered software systems to detect shoplifters and develop store-banning notices to keep known shoplifters away from their stores more accurately.

Increasingly, retailers report more theft is committed through organized retail crime efforts including gangs and groups of "flash mob" style thefts. Organized retail crime also accounts for much of the cargo theft of individual shipments and entire shipping carriers of merchandise.

Internal (employee) theft

Internal theft accounts for 29% of inventory shrinkage (*Capital One* Shopping Research, October 25, 2024). Today, artificial intelligence systems are being deployed to combat shoplifting by detecting shoplifting in real time. In an August 2024 *CBS News* article by Jack Springgate, the author describes the three components of an Artificial Intelligence (AI) theft detection system. First, there is a human detection system whereby the system can see around everyone. The second component is called pause estimation, which is used to estimate the position of all body parts. The third component is object recognition, which will detect a backpack or purse rather than a shopping cart or shopping bag. Together, these three components will provide store security with the probability of any gesture at any time. The AI system Veesion is designed not to care what people look like; but instead care about gestures as the technology analyzes body movements to eliminate any potential bias Increasingly, retail business owners use artificial intelligence technology to detect shoplifting in real-time (Springgate, 2024).

External theft

External theft (shoplifting, cargo theft, 36% of inventory shrinkage) / error, including mistakes by cashiers and salespeople, errors when receiving/sending stock deliveries, errors during inventory audits and data entry (*Capital One* Shopping Research, October 25, 2024) . When receiving merchandise from vendors, an employee must ensure that the goods are priced and received to match the invoice. For example, if a dozen pairs of $50 jeans are ordered and the shipment arrives as only 10 pairs of $40 jeans, your inventory will produce stock shortage of $200 (12X$50= $600-10X$40=$400; $600-$400=$200). Unnoticed and uncorrected will result in a $200 hit to your bottom line. Cargo theft (including pipelines) is also impacting more and more businesses as entire shipments and even their carrier trucks are hijacked and stolen.

The rationale for shoplifting---why people steal

Need the money	Addiction	Trying to impress
Revenge	Entitlement	Boredom
Impaired	Want or need	Kleptomania
Greed	Thrill	Challenge
	Mental illness (schizophrenia or bipolar disorder)	

Source: Why People Steal, 2022

Shoplifting includes return fraud, that is, returning stolen merchandise to the retailer in return for a refund, gift card, or merchandise exchange. Cargo theft often involves entire trailer trucks of merchandise and may include goods stolen through pipelines and other shippers. There is no data on merchandise stolen by “porch pirates” from customer homes or shipping carriers.

Accounting and Control

Twenty-seven percent of inventory shrinkage can be attributed to accounting and control issues (SEE Figure 1). The following are some examples of accounting and control issues and some prevention processes that can be easily implemented. When merchandise is received from vendors, the merchandise needs to be counted to ensure that the number of goods stated on the shipping document is what is received. In addition to the correct number of goods, the merchandise should have the correct pricing, and the merchandise received should match the

Table 2 6 Ways to Prevent Inventory Shrinkage

Inventory Management Software	**Assists in keeping better track of inventory, determining shrinkage rate, and preparing write-offs for damaged and shopworn goods.**
Utilize RFID Technology	**Aids retailers keep better track of stock on hand, where it is located, and how it's stored. It also provides a history of stock with shrinkage.**
Conduct Regular Physical Inventory Counts	**Random, surprise physical inventory counts in addition to regularly scheduled counts.**
Count and verify orders upon receipt	**Count and verify merchandise receipts upon arrival as the best way to prevent supplier fraud. This makes sure you receive exactly that for which you paid. Be sure to quickly inform vendors if you find an issue with a merchandise order. Also, be sure to double-check damaged and faulty goods that are sorted from purchase orders and follow up with the appropriate supplier.**
Utilize screening hiring practices	**When hiring new employees for your store or warehouse, proper references and background checks are essential to identify any potential problems. According to Shortlister, only 38% of companies perform background checks to help minimize the risk of future criminal activity,**
Invest in Security Systems	**Each business differs in terms of its security needs, but could include CCTV cameras, intruder detection, door auto lock systems, and door access control. Many insurance companies will provide a security audit for low or no cost.**

Source: Ginsburg, B. (2023) 6 Efficient Ways to Prevent Inventory Shrinkage and 40+ Background Check Statistics in 2024, *Shortlister*. Retrieved 01/16/2025 from https://www.myshortlister.com/insights/background-check-statistics shipping invoice. For example, an electronics store might order twelve model 77225 radios at $49 each but receive only eleven radios or receive $29 radios but be billed $49 each. Do not assume that your suppliers are always correct in their packing and shipping!

Effective employee training programs are pivotal in reducing shrinkage rates. The Retail Industry Leaders Association provides industry data on retail theft and conducts surveys on member experiences with security. Effective inventory management can complement employee training by ensuring that merchandise is accurately tracked, and discrepancies are quickly identified.

Accounting practices for inventory management help provide management with an accurate picture of profit margin by product, which then enables management to develop better competitive pricing. Inventory management accounting helps management to identify which products make the most money. A sophisticated system can also assist in determining space allocation of merchandise based on profit dollars per square foot of space. Finally, the accounting system is necessary for determining tax obligations.

Technology can also help in detecting and preventing organized theft by providing more accurate and reliable data. Innovations such as surveillance cameras with AI capabilities, RFID tagging systems, and smart shelving solutions are instrumental in detecting and deterring theft incidents. These technologies provide real-time insights into store operations, enabling initiative-taking decision-making and enhancing operational efficiency. By integrating technology-driven solutions, retailers can optimize resource allocation, streamline workflows, and bolster overall security measures (**https://invue.com/resource-center/blog/6-retail-shrinkage-statistics**)

SMALL RETAIL BUSINESS THEFT DATA

- Each year, at least 85.5% of small businesses experience retail theft.
- 74.8% of brick-and-mortar small businesses say they experience customers shoplifting monthly; 52.7% report shoplifting weekly or more frequently.
- Small businesses lose an average of $1,686 per month to retail theft.
- 68.4% of small businesses report losing at least $1,000 in monthly theft losses; 22.4% report at least $2,000 in losses.
- 57.6% of small businesses experience internal or employee theft.
- In 2023, 41% of small business owners said the value of items stolen has increased from previous years.
- In response to retail theft, 64.0% of small businesses have increased prices, and 50.5% have installed security cameras.

Source: Retail theft in the United States, *Statista*, 2025.

According to a recent study by the PRIVIN Consulting Network, 85% of retail small businesses experienced theft loss once a year or more frequently. Most small retailers report monthly losses between $500 and $2,500 (Retail Theft in America, 2024). Small businesses are especially vulnerable to inventory shrinkage as many business owners lack the expertise to develop inventory management processes and may lack funds to purchase inventory management technology. Many small businesses are in effect, a "one-man show," and cannot afford to hire management talent to keep better track of inventory.

DISCUSSION

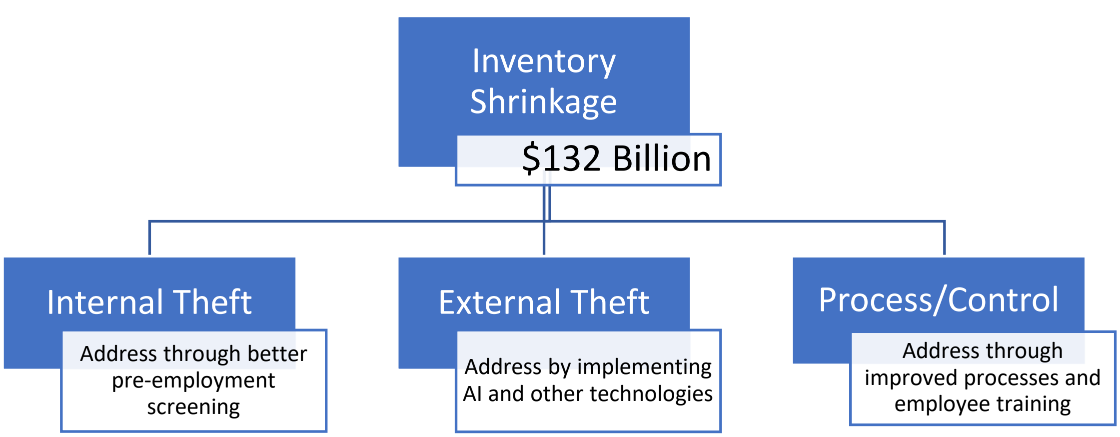
Combatting inventory shrinkage can be an enormous task, but it is a task that can produce excellent results. The author proposes a three-step approach to recoup lost profits, improve supplier relationships, and restore excellence in customer service.

The first step is addressing internal theft. Internal theft can be reduced with more thorough pre-employment screening, including police background checks and honesty testing. In addition, better onboard training and processes that protect cash, and merchandise can easily be implemented. For example, management can require unscheduled audits and periodic inventories of merchandise and equipment.

The second step in reducing inventory shrinkage is to address external theft, primarily through shoplifting. AI technologies such as those discussed earlier in this article have advanced to the level where they are highly accurate and far less likely to wrongly identify a shoplifter. External theft can also strike by cargo or delivery theft. Delivery theft could refer to one package stolen from a customer by a "porch pirate" or an entire shipment of goods being transported by trailer truck or rail car. Missing merchandise results in lost sales as inventory systems will not trigger orders for goods that according to the inventory control systems report as having merchandise on hand.

The third step in addressing inventory shrinkage is to implement better merchandise-receiving control processes. When merchandise is received from vendors, the order must be thoroughly checked to verify that the right merchandise is received in the correct quantity and at the correct price. For example, assume you order twenty-four dress shirts at $40 each for sale in your store. The inventory value at retail is $960. If you receive twenty-two shirts at $30 ($660), your business will have an inventory shrink of $300 on this order alone. Employees need to be trained to thoroughly check merchandise receipts.

The Three-Step Model to Reduce Inventory Shrinkage



Legislative measures

In 2014, California passed Proposition 47, which reclassified most shoplifting offenses (under $950) as misdemeanors. In recent years, major cities have had retail shoplifting soar and now experiencing "flash mob" style organized crime. Retailers have resorted to closing stores in high-crime areas, while many smaller businesses choose to relocate to suburban areas or close their businesses. In response to this new wave of shoplifting, California recently adopted Proposition 36, which reclassifies some shoplifting offenses as felonies (Proposition 36, California, Secretary of State. Retrieved 01/27/2025). This proposition provides for prosecutorial discretion in deciding whether to charge the shoplifter with a misdemeanor or a felony. So, for example, a first-time shoplifter would receive a misdemeanor, whereas a repeat offender would be charged with a felony.

SUMMARY AND CONCLUSION

Inventory shrinkage seriously impacts business profits and can be the determining factor in whether a business makes a profit or closes. The $132 billion dollar figure is very significant and impacts on the overall economy in several ways (Capital One Shopping Research, 2024). First, reduced profitability means that businesses and individuals will not be able to put that money back into the economy as a multiplying factor. Second, states lose millions of dollars in sales tax revenue that could otherwise be spent on local needs.

Inventory loss, a major component of retail shrinkage, includes theft, accounting errors, and other operational issues, all of which have substantial financial implications for retailers. These financial implications underscore the critical importance of investing in security measures and loss prevention technologies.

Retailers must adopt data-driven approaches, better leverage analytics and predictive technologies, and detect and deter theft before it impacts profitability. By integrating advanced security solutions into their operations, businesses can enhance resilience against the evolving landscape of retail crime.

In this paper, the author proposes a three-step approach to combat inventory shrinkage, which includes reducing internal theft through better pre-employment assessments such as honesty testing and police background checks, reducing external theft by implementing AI and other technologies, and improving employee training. Finally, inventory management software and improved merchandise-receiving processes can address process and control errors.

REFERENCES

Capital One Shopping Research, October 25, 2024. Retrieved 01/10/2025 from https://capitaloneshopping.com/research/shoplifting-statistics/#me

Ginsburg, B. (2023) 6 Efficient Ways to Prevent Inventory Shrinkage and 40+ Background Check Statistics in 2024, Shortlister. Retrieved 01/16/2025 from https://www.myshortlister.com/insights/background-check-statistics

Jack Hayes International, 35TH Annual Retail Theft Survey, Jack L. Hayes, International. Retrieved 12/31/2024 from https://hayesinternational.com/news/annual-retail-theft-survey/

Lin, T. (2010). Shoplifting from American apparel, a Taiwanese American author, published in 2010. Retrieved 01/10/2025 from https://www.bookey.app/quote-book/shoplifting-from-american-apparel

Maruf, R. & Kavilanz, C. (2023, September 27). Target says it will close nine stores in major cities across four states because of theft and organized crime. CNN. Retrieved 01/21/2025 from Target says it will close nine stores in major cities across four states because of theft and organized crime | CNN Business

Proposition thirty-six. Secretary of State, State of California. Retrieved 01/27/2025 from Qualified Statewide Ballot Measures :: California Secretary of State.

Retail Theft Shoplifting Statistics, October 2024 Retrieved December 30, 2024 from https://capitaloneshopping.com/research/shoplifting-statistics/

Retail Theft in the United States. *Statistia*. Retrieved 01/15/2025 from Retail theft in the United States - statistics & facts | Statista

Retail Theft in America 2024. PRIVIN Consulting Network, January 11, 2024. Retrieved 01/16/2024 from https://privin.net/retail-theft-statistics-america/

Springgate, J. (August 8, 2024). CBS News. Retail owners using artificial intelligence to detect shoplifting in real-time. Retrieved 01/15/2024 from (https://www.cbsnews.com/detroit/news/retail-owners-using-artificial-intelligence-to-detect-shoplifting-in-real-time/).

Target annual revenue. Retrieved December 30, 2024, from https://www.macrotrends.net/stocks/charts/TGT/target/revenue.

Unleashed Software. Inventory Software Guide. Retrieved 01/28/2025 from Inventory Accounting Guide: Methods, Formulas, & How it Works.

Why People Steal, August 1, 2022. Retrieved December 30, 2024, from https://veryinformed.com/why-do-people-steal/.

30 Best Shoplifting From American Apparel Quotes With Image. BooKey. Retrieved 01/22/2025 from https://www.bookey.app/quote-book/shoplifting-from-american-apparel.