

WHITE PAPER

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How to Protect Retail Margins Using the Science of Statistics

The economics of retailing is changing, and with it the role of Loss Prevention/Asset Protection. The responsibility to identify the root causes of loss due to procedures, policies, or systemic errors is being shifted to this department. As LP/AP shoulders these responsibilities along with the more traditional duties of preventing theft and fraud, combating organized retail crime, and ensuring safety, the department's focus shifts to a goal of reducing total loss.

As volatile as this climate appears, it also presents an ideal opportunity for loss prevention professionals. By monitoring transactions over time and bringing statistics to bear, loss prevention analytics is reshaping operations and policies to protect bottom lines. This process often begins with "data mining"—a catch-all term for the methods analysts use to make sense of vast quantities of information. By sifting through millions of data points, analytics professionals are able to tease out relationships that would otherwise be undetectable. The result is that today's retailers have a number of loss prevention tools that were unavailable only a few years ago.

Techniques to Maximize Retailer Margins

CHALLENGE ASSUMPTIONS TO UNDERSTAND MORE OF THE BUSINESS

Most retailers' current accounting programs do not accurately reflect their real return rates; they often overlook exchange transactions and therefore understate the value and quantity of merchandise returning to the store. The return rates for 10 different retailers were tallied to analyze how they viewed the impact of merchandise returns. All were underestimating their return rate—one by as much as 150 percent. In fact, the 10 retailers studied saw an average return rate discrepancy of more than 80 percent.

Why is this important? Items and cash that get returned within exchange transactions are unexpectedly hidden, masking retailers' opportunities to rescue sales, prevent fraud, reduce shrink, and more.

PREDICTIVE MODELING TO IDENTIFY HIGH-RISK CONSUMERS

As a retailer, imagine that each consumer who returns a product hands you a slip of paper. On the paper is written a number between 0 and 100 percent and a note that says, "This number represents the probability that my return is fraudulent." Although not this simple, this is the end result of predictive modeling. By tracking and analyzing consumers' purchases, exchanges, and return behaviors over time, loss prevention statisticians are able to develop real-time mathematical models that accurately estimate the chances of a return being legitimate or fraudulent. Recognizing high-risk consumers is important, as it often leads to broader networks of return fraud.

"TELL ME WHAT I DON'T KNOW"—BEYOND EXCEPTION REPORTING

Bringing computing power and statistics to the process of exception reporting is a key means of reducing fraud. Today, almost all retailers' loss prevention departments use some form of exception reporting to identify suspicious transactions, individuals or employees. This process usually involves a complex set of rules to flag certain situations that "seem" problematic.

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Taking this scenario one step further, the complex rules for flagging transactions can be reduced to a set of risk variables, each of which can be correlated to known outcomes. By determining the relationship between risk variables and known outcomes (such as correlating a certain employee's behavior with his/her ultimate termination for fraud), retailers can learn which risk attributes are most important and what weight to assign each. Feeding these variables into predictive models then yields composite risk scores for evaluating transactions, employees, stores, or other units of interest. This transition from complex rules to predictive models for identifying fraudulent transactions is analogous to a transition that occurred in the 1990s in the credit card industry: Improved ROI and greater loss prevention efficacy let that market do more with less.

FRAUD RING ANALYSIS HELPS YOU INVESTIGATE MORE EFFICIENTLY

Social analysts find that people tend to group together based on similarities, and that this is particularly true among criminals. A key method of identifying (and ultimately cracking) organized retail crime rings is by first identifying high-risk consumers, and then mapping out clusters of similar consumers and analyzing their transaction behavior. Using sophisticated linking algorithms such as "fuzzy matching," loss prevention analysts can connect known fraudsters to other questionable consumers, often uncovering clusters of identities that constitute either crime networks or aliases of the same criminal.

ROI ANALYSIS SHOWS NEW WAYS TO IMPACT THE BUSINESS

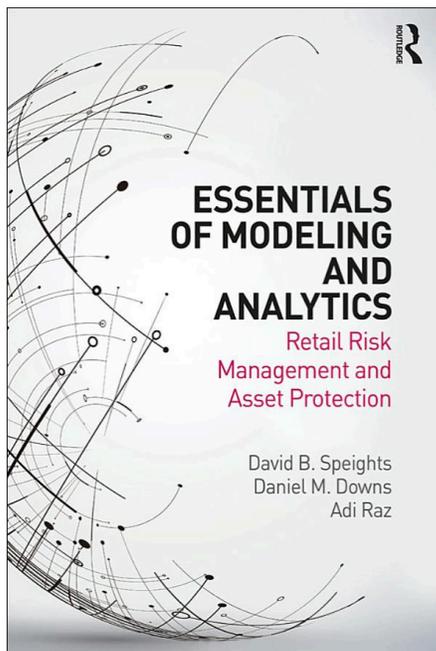
Before implementing any loss prevention strategy or solution, retailers should understand both the costs and associated benefits. Controlled tests, followed by statistical analyses, aid this understanding. By using "experimental" and "control" groups of stores—and tracking key metrics such as shrink, sales, return rates, or other important outcomes in before-during-after analyses—LP/AP professionals can accurately calculate a given strategy's ROI. Controlled trials also let analysts manipulate elements that make up an overall strategy. By correlating changes in strategy with changes in ROI, statisticians can optimize loss prevention policies.

PHD STATISTICIANS TELL HOW TO USE ANALYTICS TO DO MORE WITH LESS

To help retail analysts develop their understanding of statistics, in 2017 three data scientists from Appriss Retail (David Speights, PhD; Daniel Downs, PhD; and Adi Raz, PhD) published a guide for retail risk management and asset protection. The book, *Essentials of Modeling and Analytics*, offers an in-depth view of analytics, illustrating how they are used to solve business problems.

Summary

Clearly, statistics play a growing role in retailers' approach to loss prevention issues and solutions. This is important in any economic climate; but in a mixed economy where profit margins are uncertain, it is imperative for retailers to have an unambiguous picture of their businesses that is rooted in solid statistical analysis. 📖



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