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LOSS PREVENTION RESEARCH COUNCIL

TRIAL RESULTS OF SENNCO'S *SWING GATE™* TECHNOLOGY: *PHASE 1*

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Introduction

According to results from the National Retail Security Survey (2020a), shrink rates were at an all-time high in 2020, accounting for 1.62% of a retailer's bottom line and costing the industry an estimated $61.7 billion. Accordingly, retailers have embraced product protection through *target hardening*, where the "targets", or products, are made more difficult to steal or less attractive to shoplifters. Examples include locking down products, limiting the amount of units on-shelf, using protective wraps or tags, or increasing surveillance in that aisle or department. Amongst the strongest of these product protection solutions are closed merchandising showcases, which require employee assistance to unlock the product. However, while this potentially makes theft more difficult for offenders, closed merchandising practices may create other challenges and inconveniences for legitimate shoppers.

Results from a mass consumer survey found that shopping convenience is more important now compared to just five years ago (NRF, 2020b). As a result, retailers must walk the delicate line between implementing solutions that are strong deterrents to crime, while at the same time maximizing the ability for shoppers to see, touch, and ultimately purchase a product. In fact, according to a 2017 *Retail Dive* survey, 62% of customers said that the ability to touch and try our items was the single most important consideration for choosing an in-person shopping experience (Skrovan, 2017). Evidence also shows that the average customer prefers to be left alone while shopping and to only engage with employees when they need assistance or to checkout (HRC, 2018). While there is no "one size fits all" solution to crime, these insights indicate that, for some locations, closed merchandising may ultimately do more harm than good overall.

While research on closed merchandising is scarce, researchers in 2011 sought to better understand the impacts of locking condoms on sales and theft (Ashwood, Farris, & Campo, 2011). In their study, previously locked condom displays were unlocked across eight grocery pharmacies for a three-month trial. During this time, the stores provided monthly reports and sales numbers, as well as comparable data from the year before. While the results did show an increase in theft (up 7.33 units per month), there was also a significant impact on sales (up 9.37 units per month). Overall, the authors determined that the increased sales rate

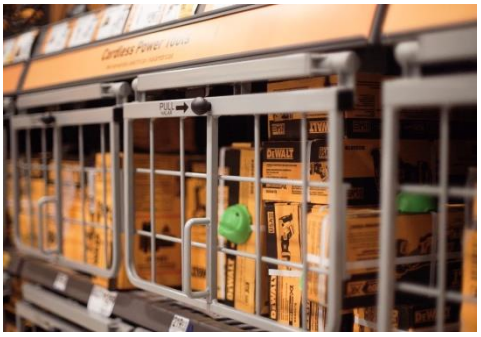
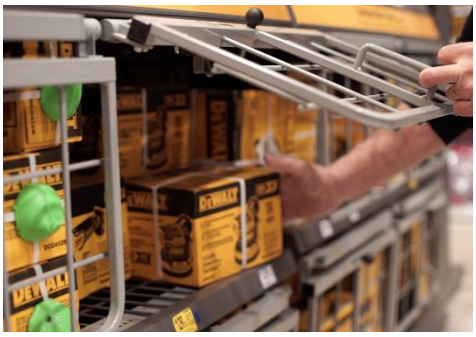
exceeded the increase in theft. As a result, six of the eight stores decided to keep the product unlocked permanently (Ashwood et al., 2011).

In an attempt to combat theft while maximizing product availability, Sennco Solutions Inc. has developed an anti-sweep technology designed to act as a visual deterrent while also making it more difficult for offenders to access large amounts of product at once. The Loss Prevention Research Council, in collaboration with Sennco and Walmart, sought to better understand the implications of a retailer adopting the Sennco *Swing Gate* technology through the assessment of sales and inventory adjustment rates across two store locations. This is the first phase of an ongoing project, and in Phase II Walmart has agreed to expand testing from two store locations to 50 to better assess the overall impact of the technology.

Sennco's *Swing Gate*™ Technology

The Sennco *Swing Gate* is an anti-theft technology, designed to create a strong visual deterrent against theft while maximizing product accessibility for consumers. The technology requires shoppers to use two hands to access the product, keeping it accessible while also making it more difficult for offenders to sweep multiple products off the shelf. When the gate is opened, the localized sensors will alert employees when someone is in that department via several notification options (SMS, email, and audible). CCTV options are also available, with the ability to go back and track data. The *Swing Gate* is available in multiple size options and features soft close hinges for added durability. According to Sennco, the *Swing Gate* is a good option for businesses that:

- Sell products that are difficult to track once they are stolen
- Sell products that have a high re-sell value
- Sell products that are easy to turn around in a non-retail environment for easy cash
- Desire to increase sales on products that are merchandised in a lock-up
- Use other *Zebra* devices in-store for easy integration

Images 1-2. *Promotional Photos of Sennco's Swing Gate*

Methodology

Research Design

In 2020, Walmart began trialing Sennco's *Swing Gate* technologies in two "test store" locations in two states. The store locations were chosen mainly for convenience, as it allowed both parties to monitor the progress of the project and perform any necessary fidelity checks within close proximity of their respective headquarters. For this trial, the technology was used to protect two brands of power tools: *HART* and *Hyper Tough*[1]. The solution was installed in-store between September and October of 2020, and the following results reflect the changes in sales and loss rates during the trial period.

In the final data analysis, each test store was paired with 30 "control stores" (locations that did not have the *Swing Gate* installed) which had similar risk and sales levels, thus allowing us to better assess the impact of the technology. To add further richness to the data, 15 of the control stores had their power tools completely unlocked, while 15 had the product locked behind a glass showcase. Sales and loss data were collected 30 weeks prior to the installation of the solution and throughout the testing. In the final analyses, the baseline data were compared with the data collected during the trial period and used to calculate the percentage change in sales and loss.

[1] While the *Hyper Tough* brand has been out for several years, the *HART* line was introduced in late 2019 and early 2020. Therefore, it is likely that any observed decreases in sales or loss may be attributable, in part, to changes in consumer hype around the line.

Results: *Test Store A*

Trial Context

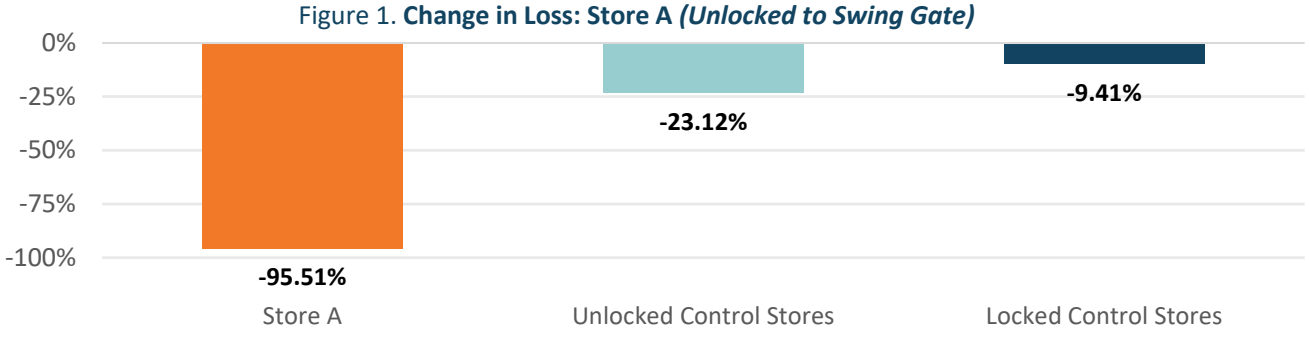
As with most "real-world" tests, there were several variables that could not be controlled for in this trial; therefore, we will provide much-needed context for the store locations testing the *Swing Gate* technology. Before installation, the power tools in Store A were **not locked** behind any showcases or using any other product protection solutions. Notably, the power tools were *understocked* in Store A during the duration of the testing, which likely reduced the sales numbers below their potential.

Images 3-4. *The merchandise in Store A was completely unprotected (left) before installation of the Swing Gate technology (right).*

Swing Gate Impact on Loss and Sales: *Store A*

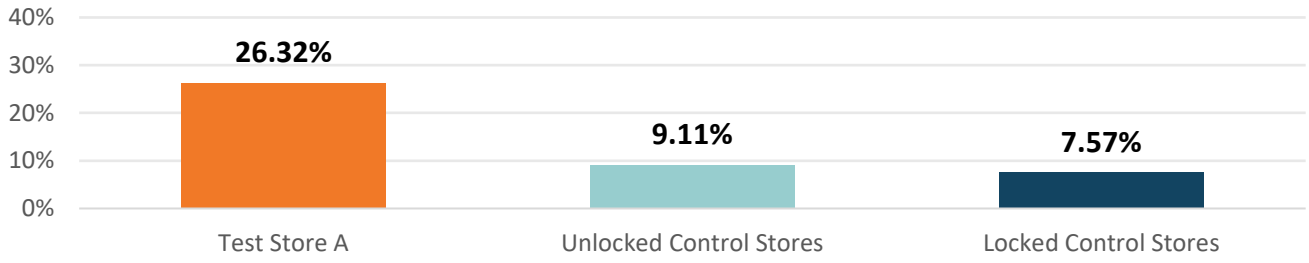
First, to better understand the impact of Sennco's *Swing Gate* technology, loss rates from the baseline period (before installation) were compared to the rates collected during the 38-week trial period for the test store and its paired control stores. Overall, Store A saw a substantial 95.5% decrease in loss during the *Swing Gate* trial. In comparison, the "unlocked" control stores saw a loss reduction of 23.1% while the "locked" control stores saw an average reduction of 9.4% overall. Therefore, the loss reduction for Store A (where the *Swing Gate* was installed) was 72.4% and 86.1% *greater* compared to the "unlocked" and "locked" control stores, respectively.

Figure 1. **Change in Loss: Store A *(Unlocked to Swing Gate)***



Next, we compared baseline sales data to the data collected during the trial period. Again, this data was collected for both the test store locations and its' paired control stores. According to the results, Store A saw a rise in sales which was comparatively higher than the control stores. Despite being understocked during the trial period, the location trialing Sennco's *Swing Gate* saw a sales increase of 26.3% during the trial period, which was about 17.2% higher than the "unlocked" control stores and 18.8% higher than the "locked" control stores (see *Figure 2* below).

Figure 2. **Change in Sales: Store A *(Unlocked to Swing Gate)***



Results: *Test Store B*

Trial Context

Context is also needed to discuss the trial results more accurately for Test Store B. The second test store ran a 31-week trial of the technology, and before installing the *Swing Gate* solution, the power tools were completely **locked down** behind a glass showcase (*see Images 5-6*). With this in mind, it was anticipated that there would be an increase in both sales and loss in *Store B.* Again, while closed merchandising is arguably a stronger deterrent than other more accessible options, it may also discourage legitimate customers interested in purchasing the product as exemplified in the study by Ashwood et al. (2011).

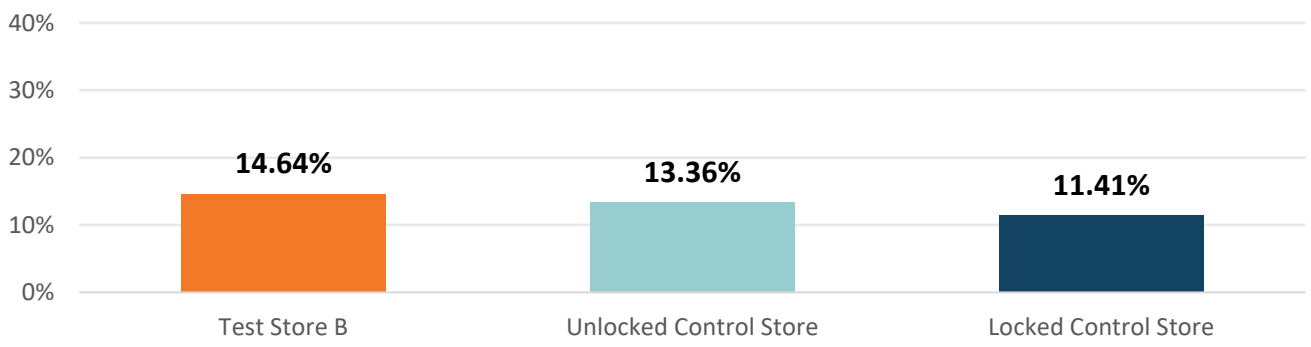
Images 5-6. *The merchandise in Store B was protected behind a closed showcase (left) before installation of the Swing Gate technology (right).*

Swing Gate Impact on Loss and Sales: *Store B*

When assessing the overall change in loss, Store B saw a small increase in loss after transitioning from the closed merchandise showcase. Compared to the baseline period, Store B saw an increase of 367.11%. This percentage was based on Test Store B having adjustments of $15 during the test period and $3 in the baseline period. A representative from the participating retailer noted that in comparison to the control locations not trialing the *Swing Gate* technology the loss by **dollar amount** was **substantially lower**, indicating that offenders may have been displaced to lower-dollar products and away from the protected power tools. By comparison, the "unlocked" control store also saw an increase in loss of 5.82%, and the locked control store saw an increase of 4.21% overall.

In terms of sales, the power tools protected by the *Swing Gate* technology performed just as well, even a bit better, compared to the control stores after the transition away from the closed merchandise showcases. Store B saw a sales increase of 14.64% over the 31-week trial period, 1.2% greater than the "unlocked" control store (14.6% vs. 13.4%), and 3.2% greater than the "locked" control store (14.6% vs. 11.4%).

Figure 3. **Change in Sales: Store B *(Locked to Swing Gate)***



Conclusions and Next Steps

As the results have shown, the Sennco *Swing Gate* is a promising product protection solution. Store A performed significantly better in terms of loss reduction when compared to the control stores, and despite a higher rate of loss, Store B saw a dollar amount that was substantially lower than its paired control stores. Furthermore, both locations saw comparable sales rates to the control stores, indicating that customers were not negatively impacted by the presence of the product protection solution.

As with all research, there were limitations to this study. **To conduct a more robust test of Sennco's *Swing Gate,* Walmart has agreed to *expand* the trial to 50 different store locations.** First and foremost, the trial itself was relatively small, only including two test stores in the final analysis. As a result, the data is more susceptible to "outlier events", and our ability to draw conclusions about the effectiveness of the *Swing Gate* technology is limited. Future research should include a larger, random selection of test stores and products. Furthermore, prior to installation, the power tools were not uniformly protected; one store had the product in locked showcases, while one had the product completely unprotected. This limited the "true" effect of installing the technology in a completely unprotected environment. Finally, the trial occurred during the COVID-19 pandemic and in two states. Given that different locations had vastly different lockdown procedures, we cannot accurately assess the impact of the pandemic on the data. Following feedback provided by Walmart, Sennco has been diligently working on additional developments to the Swing Gate platform. They are in the final stages of launching a wireless electronic locking option to the Swing Gate, which would allow each Gate to be locked or unlocked remotely, on a scheduled timer or after a sweep event is triggered.

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