Package Theft: Prevention Products and Procedures

by
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Dedication

To my parents, who always push me to be the best man I can be.

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Abstract

Theft of packages left unattended at residence is a problem that is becoming more significant as online shopping continues to increase, with approximately a 40% increase since the pandemic. This study aimed to examine products and procedures commonly available to the public based on price, convenience, and crime prevention techniques to provide consumers with a clearer understanding of how to protect against package theft. Twenty-two products and nine procedures were included in the study. The products and procedures were scored with a combination of situational crime prevention (SCP) techniques to observe how many each used, costs associated (if any) and received a scored based on convenience of daily use and installation. The results revealed, procedures (e.g., Amazon Hub) have more SCP techniques products (e.g., Danby Parcel Guard Smart Mailbox). However, products could score higher than procedures when layered with different types of products (i.e., using a doorbell camera with a lockable box), since they use more unique techniques. The price and amount of SCP techniques used showed little relationship. However, the higher the price, the less convenient the product was going to be. More techniques could be used in security layering, which could make a less expensive alternative to some of the most expensive anti-package theft products on the market while incorporating more protection. The convenience of each product and procedure was scored with being most convenient, medium, and least convenient. The prices of the products and procedures ranged from $0-$596.00.

Keywords: package theft, situational crime prevention, security layering, willingness to pay, willingness to do

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Package Theft: Prevention Products & Procedures

Package Theft

Package theft, or porch piracy, is an alarming trend that has steadily increased with the growing worldwide increase of online shopping. A study conducted in 2016 found that around 1 in 10 adults said that they had been affected by package theft and had a package stolen before they had a chance to open it (Campo, 2017). While this is a relatively high number, the problem has only gotten worse. In a more recent survey conducted in 2019, 36% of 2,000 customers surveyed indicated they had been victims of porch piracy, and the average price to replace the stolen items was around $109 (C + R Research, 2019). Furthermore, during COVID, crime types and rates have shifted dramatically (Stickle & Felson, 2020), with package theft increasing dramatically. The most recent study identified a 40% increase in package thefts during the first six months of the pandemic (Hurst, 2021). These studies highlight the problem of package theft and the increased number of people affected by it each year, but it also confirms that retailers and consumers are paying a high amount of money to replace the stolen items. What these studies do not reveal is the cost victims are paying for security measures to keep porch pirates at bay.

The Problem of Package Theft

Currently, no US police agencies track package theft and release data to the public, as they mostly label it as larceny-theft (Carlsen, 2021). Therefore, the studies identified thus far and many after are based on public surveys. However, several police agencies in the UK keep data on package theft. Select police forces across the UK

revealed that package theft was up by 22% from the financial year 2016-2017 to 2018-2019 (*Amazon Crime*, 2019). In 2016-2017, the number of thefts was 786 before it rose to 830 police reports in 2017-2018. In 2018-2019, the final number was 962. The number could likely be higher, considering only about half of the police forces in the United Kingdom gave formal responses, and this data does not include the dramatic increase in package delivery during COVID. Regardless of the lack of current data, the UK trend is troublesome because of the significant increase each year.

The Impact of COVID on Package Theft

On the other side of the world, an Australian study conducted at the time of COVID found a 55.6% increase in online shopping when comparing November 2019 to November 2020 (Australia Post, 2020). Further, the dollar difference between pre-pandemic Australia and pandemic online shopping was around $1,600 a year more (Berthon, 2021). More people were shopping online due to the pandemic and increasing value of purchases. Combined, this is a perfect storm of increasing opportunities for offenders to steal packages from homes and increase value. Out of 1,069 Australians surveyed, 14% had experienced package theft (Berthon, 2021). Another interesting aspect of this crime is the disparate impact on victims. For example, package theft in Australia impacted victims differently by age. On average, baby boomers (born 1946-1964) lost $108.30 per theft. Losses increased with each generation and peaked with Gen Z (born 1997-2012), who lost $189.60 per stolen package (Berthon, 2021). Such a large gap, a 75% increase between the value of packages stolen for baby boomers to Generation Z, could be occurring for multiple reasons, such as younger generations buying more high dollar items or even different housing arrangements such as living in apartments. While

the reasons are not clear, different prevention methods will likely be required across ages, buying habits, and even based on home locations.

Australia was not the only country that experienced an impact on theft rates due to COVID. In the summer of 2020, package theft incidents reached a high only rivaled by the average winter holiday season, as an estimated 25 million US households, or one in five, fell victim to porch pirates (Vigderman, 2021). These numbers were consistent throughout the pandemic up through August 2020. The driving factor for the rapid increase in porch piracy was likely the spike in-home deliveries. For example, the retail chain, Target saw a jump in e-commerce of 141%, Walmart increased 74%, and Amazon had to hire 175,000 extra people to keep up with the rapid orders (Vigderman, 2021).

In 2021, SafeWise published a report with a dedicated list of US cities where package theft happens the most. The data in this study were collected over four years, from 2018 to 2021. The list contained ten cities, with each ranking based on the amount of larceny-theft per 100,000 recorded by the FBI in each city and the amount of google searches involving the terms “missing package” and “stolen package” (Carlsen, 2021). Each variable (Larceny-Theft and Google searches) accounted for 50% of the total scoring resulting in a rough estimate of package theft rates. Denver, CO, had the most package theft by rate, followed by San Francisco, CA, and Salt Lake City, UT. Based on the data, Denver, CO has been steadily rising in package theft since 2018; it was ranked 11, moving up to 8 in 2019, and finally number 1 in 2021. The ranking for 2020 is not applicable since they were unable to collect data on larceny theft from the FBI for this city. The rankings on this list are significant since they can show the public if they might

be more at risk depending on the city they are in and whether or not they need to take more precautions to keep packages from getting stolen.

Why Criminals Choose Package Theft?

Home delivery rates have increased in the last decade and skyrocketed during the pandemic, which has resulted in increased opportunities for thieves as packages are often left unattended on a front porch. However, the opportunity is not the only factor to consider when examining package theft. It is also essential to understand what attracts porch pirates. Stickle et al. (2019) examined 67 package thefts and concluded 63 were uninterrupted, while four of the thefts involved someone (e.g., a resident or neighbor) intervening in the theft. Of these 67 incidents, 62 (93%) occurred where the package was visible from the road. The numbers detailed in Stickle et al.'s study indicate that package theft will happen more often if a package is easily seen and readily accessible. Many forms of property theft are based on opportunity, and package theft is no exception to the rule. Criminals may find it appealing since when a package is visible from the road, it creates an opportunity for crime (Stickle et al., 2019), or it may also be due to package theft being a lucrative crime, with individual packages stolen averaging from $108.30 to $189.60 (Berthon, 2021). It also might be easier to steal a package than burglarize a house, causing many burglars to switch the type of crimes they commit (Vigderman, 2021).

How Package Theft Impacts Victims

Understanding fear of crime is necessary to identify what factors contribute to a consumer's behavioral responses. In a study published in 2021, a survey consisting of both open-ended and multiple-choice questions about package theft was completed by

562 individuals in 49 states. The study showed that females were typically more fearful than males despite males being victimized more. Further, people in rural areas were less fearful than people who lived in urban or suburban areas, and people who had been victimized previously had higher rates of fear than their counterparts (Hicks et al., 2021). The survey also asked both victims and non-victims what they would be willing to do to stop package theft from occurring. Previous victims were willing to do more than others to stop package theft by showing risk mitigation behaviors such as requiring a signature for package delivery or installing a porch box for deliveries to be placed in. Factors such as gender, location, and previous victimization are essential to know since they can show who is more fearful of package theft and is more likely to take precautions.

One other important issue regarding fear of crime is what types of products create the most fear of getting stolen. In a survey of 1,000 people, 41% of them did not want to buy electronics for fear of package theft, which is by far the most significant number of other categories, including collectibles (17%), clothing (2.4%), jewelry (1.4%), tools (1.3%), art (1%), shoes (.8%), toys (.2%), and books (.2%) (Shorr Packaging Corp., 2017). Consumer fear of ordering and shipping electronics to their home makes sense since electronics are typically a high-dollar item, and they could cost significantly if lost or stolen. Shorr Packaging Corp. went on to ask respondents if they believe online retailers are doing enough to prevent porch piracy. Of the respondents, 61% said no. The following were the measures the respondents wanted to put in place: 29% wanted discreet packaging, 16% wanted package theft insurance, and 9% wanted the ability to track packages with GPS (Shorr Packaging Corp., 2017). These measures would help to put customers at ease and reduce package theft. The research developed by Hicks et al.

(2021) and Shorr Packaging Corp. (2017) is critical to examine since it can show manufacturers need preventative measures to stop porch pirates from taking packages.

Summary on Package Theft

Package theft is on the rise, and its incidents grow in numbers every year with the rise of retailers using e-commerce. As little as five years ago, around 1 in 10 households had been victims of porch piracy (Campo, 2017), but after COVID, the number is closer to 43% of all Americans. (Hurst, 2021). Once COVID hit, crime changed radically; certain crimes declined, while others increased; likely due to the lockdowns (Stickle & Felson, 2020), and package theft is not an exception to this (Stickle, 2020). As a result, fear of package theft impacts consumers (Hicks et al. 2020), and the public is taking responsibility to strengthen their security to keep packages out of the hands of offenders.

Situational Crime Prevention

Situational crime prevention, or SCP, is a highly effective way to combat crime, and it was conceptualized by Ron Clarke, who chose to look at crime as a result of human situations and opportunity. He sought to reduce offenders' opportunities to commit a crime (Clarke, 1995). As it is known today, SCP consists of 25 prevention techniques for crime, but it was not always a concrete set of 25. The first list of SCP techniques conceptualized by Clarke (1997) continued only 16 techniques centered upon opportunity reduction (See Appendix C). It was not until later that more techniques were added. The additional techniques came from a critique from Richard Wortley (2001), in which he remarked that reducing opportunities was only half of what needed to be done and opted for "softer" crime prevention methods. He said that an individual's emotional state could trigger criminal behavior in a way similar to the opportunities they are given. These

emotional states could be in reaction to an environmental precipitator. For example, the smell of food making a person hungry would be an everyday example of an environmental precipitator, as when someone is hungry, they will seek out food. A similar analogy would be if someone saw a package in plain sight, they would have more of a craving to steal it. After seeing the critique, Clarke updated his research to include the 25 techniques commonly used today (Cornish & Clarke, 2003).

The 25 techniques are divided into five broad methods, with five techniques listed within each method. The five methods are increasing the effort, increasing the risks, reducing the rewards, reducing provocations, and removing excuses (Felson & Eckert, 2016). The last two methods have limited applicability to package theft, so the focus in the present study will be on increasing effort, increasing the risks, and reducing rewards.

The first method involves increasing the offender's effort to commit the crime. A glimpse of this in action was laid out in Clarke's natural experiment, which involved suicide rates in the United States. In the past, a popular form of suicide was to park a car in a garage, leave it running, and close the garage door. The emissions would lead to death by the fumes getting into the person's lungs. Suicide rates of this form drastically declined when auto-emission laws changed, which reduced the amount of lead that a car could give off through the exhaust (Clarke & Lester, 1987). The laws made the suicide process longer, reducing the opportunity and increasing the effort it took for a person to commit suicide by inhaling the fumes.

The second method increases the offender's risk of committing the crime. A simple example of this is the motorcycle helmet laws. Helmet laws would force anyone who rode a motorcycle to wear a helmet. While inconvenient to the ordinary biker, these

laws were detrimental to the joyriders who would steal the motorcycles. When they stole the bikes, they often did not have helmets, which would provide an opportunity for authorities to make a traffic stop and result in learning the motorcycle was stolen. As a result, a considerable drop in motorcycle thefts occurred (Mayhew et al., 1989). After the laws were put into place, the risk of getting caught was too great for most motorcycle thieves.

Reducing the rewards for the offender is the third method in SCP. An example of this would be covering up graffiti as soon as a structure is tagged (Cornish & Clarke, 2003). Covering up the graffiti immediately denies the benefits for the graffiti artists since no one sees the graffiti. It could drop the morale of the offenders if it were removed quickly, making them not want to go through the trouble of such a time-consuming crime.

To reduce package theft, it is important to use the three methods of SCP described before, including increasing the effort needed to commit a crime, increasing the risk of the offender getting caught, and reducing the rewards for the offender. In short, SCP is a blanket of crime prevention methods. With at least one of these methods used, an offender may reconsider committing a crime. The effectiveness increases when multiple or all methods are introduced in crime prevention strategies.

Crime Prevention Through Environmental Design

A key idea that compliments SCP is crime prevention through environmental design, commonly known as CPTED. The groundwork for CPTED came from Oscar Newman in his book titled *Defensible Space* (1972). Newman argued that four factors were essential to defining clear defensible space through CPTED. The first was

territoriality, or to establish clear ownership. The second was surveillance of territory with clear sightlines, such as windows on a structure. The third was ensuring that buildings are maintained to keep onlookers from seeing potential isolation or vulnerability. The last was the residential layout of buildings, which is to say the surrounding buildings all influenced the security of one another (Newman, 1972). Newman concluded that crime would drop if at least one of these were used in environmental design. C. Ray Jeffery (1977) expanded upon the research from Newman (1972) and stated that effective use of the environment could reduce fear of crime.

An example of how effective CPTED can be is seen in a study published in 2021 from Australia where CPTED was applied to issues of sexual offenses. Researchers asked the offenders which techniques made them hesitate before committing the crime and which were ineffective (Chiu et al., 2021). For example, guardianship involved how many people were around, and victim self-protected behavior involved how much the victim struggled through physical and verbal strife or self-protection devices. Many offenders stated that the most significant deterrent was an adult guardian nearby (92.9%), with the next highest being when a security officer patrolled a nearby location (91.4%). The other deterrents that were effective were forceful verbal resistance (87.3%), speaking on the phone (85%), physical resistance (84.5%), and when a child was nearby in a private setting (84.3%). When potential offenders knew people were around, they were less likely to offend. CPTED was measured by increasing natural surveillance target hardening efforts such as alarms. Out of 140 offenders, they had three scenarios that they had to rate the effectiveness of, with the main factors being varying levels of guardianship, victim self-protected behavior, and CPTED. The three scenarios were an

acquaintance rape at an offender's house, a partner rape at the offender's home, and stranger rape in a public alley. Chiu et al. (2021) suggested that victim self-protected behavior was the most effective in the first two scenarios in the offender's home, but guardianship and CPTED were rated significantly higher for the last scenario in the alley. The data shows that in an outside setting where guardians are more readily available, situational crime prevention is generally more reliable than other ways of deterring crime.

Barrooms are another example of how CPTED can be beneficial. Many different groups of people will gather in barrooms, and this factor, combined with the fact that they can be in very close proximity with one another in the bar while consuming alcohol, can lead to problems. The use of space in a barroom is critical for understanding barroom violence. Spacing is important since the closer people are to others, the more they risk spilling a drink on another patron or bumping into another person, increasing the risk of a conflict (Macintyre & Homel, 1997). Altering the area, such as allowing more room for isles or making clear dance floors, can make better use of the space, ensuring the crime is less likely to happen.

Crime Triangle

Another key aspect of SCP is the problem analysis triangle, commonly referred to as the crime triangle (Eck, 2003). The crime triangle is a simplified way to understand crime by considering three requirements of a crime: the offender, the target, and the place in which they meet. The relationship between the three elements is visually depicted in the crime triangle. This idea was improved upon by Eck (1994) and tested (Eck & Wartell, 1998) with controllers, which would be place managers, guardians, and handlers. This is often visualized as a double-layered triangle (see Appendix B). The place

manager monitors the behavior at the given space. Guardians protect targets and deter criminal activity. The handlers are the people connected to the potential offender, which can intervene to keep that person from committing a crime. If any elements from the outside triangle are weak (place managers, guardians, or handlers), crime prevention is less likely. In simple terms, a child could walk into a candy store with his mother. In this case, the child would be the offender, and the mother would be the handler. The place would be the candy store, and the manager could be the store clerk. The target would be the candy, and the guardian could be a person walking by who might deter the child from taking the candy. If either the mother, the store manager, or the bystander were absent, the child could quickly put candy in his pocket without paying, whereas if all three were present, it would make it much less likely for the child to steal.

Situational Crime Prevention Conclusion

Situational crime prevention is versatile and can cover a wide array of crimes. SCP also encompasses many techniques, such as CPTED and the problem analysis triangle. These have been used to solve a wide variety of crimes, from parking garage theft (Poyner, 1991), convenience store theft (Exum et al., 2009), theft of metals (Stickle, 2017), and mass violence terrorist attacks (Freilich et al., 2019). Due to the nature of package theft, the SCP perceptive can likely address this crime as well.

Willingness-to-Pay

The ability to be safe from crime often comes at a price, whether it be an alarm system for a house, surveillance equipment, hiring security personnel, or simply a porchlight to help deter criminal activity. The question is, how much of a price is too high, and what is the public willing to pay for a product or service to get peace of mind

and be at less risk for crime. Willingness-to-pay (WTP) helps answer this question by measuring the dollar amount an individual is willing to pay to accomplish a task. Contingent valuation (CV) is also an important subject when examining willingness to pay, as it involves giving surveys to estimate how much someone would be willing to pay to keep something the same or make it better. CV is often used for public programs that do not have an exact price; for example, what are you willing to pay to reduce environmental pollution. CV is important because it enables policymakers to conduct a cost-benefit analysis and make an informed decision based on what the public says it wants and can afford and what the policymakers can afford (McCollister et al., 2010).

Using CV to understand the public's WTP for a resource was first proposed by Ciriacy-Wantrup (1947), with an initial study about soil conservation for farming. He proposed that when looking at benefit/cost ratios in public projects, value classes are put in place to examine the project's priority. In order to examine benefit/cost ratios, a social group must be questioned on how much they are willing to pay for an intangible value. While it started with environmental policies, this concept has been applied to crime control programs.

In Europe, Brenig and Proeger (2016) evaluated the amount of money the public would be willing to pay for crime reduction across the continent. In order to find an estimate, they used information about crime gathered by the European Social Survey, which had a sample size of 200,000 people, and specifically looked at life satisfaction, victimization experience, and fear of crime. According to the data in the survey, all of these factors were significant to the amount people were willing to pay for a total crime reduction. In most cases, those who have been victimized before and have a higher fear

of crime have a higher value on crime prevention than those who have not been victimized before.

Another study in the WTP for violent crime reduction was published by Soeiro and Teixeira (2013). In this study, a survey was sent out to high crime rate areas in Portugal and was completed by 1,122 higher education students. Of these students, 33% had been victims of crime in the past with no psychological or physical injuries. The percentage of students who were very worried about being victims of a crime was 40%, whereas the moderately worried was 52.8%. The significant factors that made someone less WTP for violent crime reduction were low education levels and locking doors at home. The factors that suggested people were more WTP were high family income, previous victimization, high fear of crime, and a high number of dependents in a family (Soeiro & Teixeira, 2013). The data closely matches the data later found by Brenig and Proeger (2016), where the fear of crime and prior victimization significantly impacted WTP for crime prevention.

Another study that used WTP to understand crime control efforts was published in 2013 regarding youth crime and whether the public was willing to pay more on punishing or rehabilitating the youth (Baker et al., 2013). The researchers interviewed 400 people and asked questions about race, sex, age, fear of crime, prior victimization, education levels, and political leanings. Out of the interviewees, 66% said they were WTP for a youth program, and 50% were willing to pay for youth rehabilitation programs, while the remaining 16% were willing to pay for youth punishment programs (Baker et al., 2013). From this data, males, conservatives, lower-level education, and those with a high fear of

crime were more likely to support more punitive measures for youth offenders instead of rehabilitation.

In 2004, Cohen et al. examined WTP regarding crime reduction. To do this, they conducted a telephone survey of 1,300 residents using random-digit dialing. The survey was developed with questions about five types of crimes: burglary, serious assault, armed robbery, rape or sexual assault, and murder. The respondents were asked yes or no questions about whether they would support particular crime-prevention programs with various amounts of money that were randomized between $25 and $225. After the initial response, they would then be asked why they would or would not be WTP for the crime prevention programs. The study found that most households would be willing to pay between $100 and $150 per year for crime control programs that reduced specific crimes by 10% (Cohen et al., 2004). If all participants in the study said they were WTP did so, $25,000 would be spent on burglary, $70,000 per serious assault, $232,000 per armed robbery, $237,000 per rape or sexual assault, and $9.7 million per murder.

However, there are concerns over the accuracy of WTP studies. In 2015, a study (Stickle, 2015) followed up on the survey given by Cohen et al. (2004) and reviewed the statements given by each of the interviewees to assess the overall attitude of WTP for burglary prevention. The methodology involved evaluating the open-ended statements of why the respondents were willing or unwilling to pay. Of the 1,300 people who completed the survey, 786 people answered the question of WTP for residential burglary crime prevention programs and left an explanatory response. Roughly 25% (169) of people had a favorable view of burglary prevention and were WTP, but 22% expressed doubts about the program's statements (Stickle, 2015). According to their statements,

approximately 75% (515) of respondents were not WTP. The largest portion of them explained that they did not have the money or mistrusted their tax dollars if the government was not already solving the issue. The data in this report was in contrast with the original survey conducted by Cohen et al. (2004), which said that 25,000 dollars would collectively be spent to reduce burglaries since, in the original survey, 51% said that they would be WTP an average of $104 based on their yes or no answers. Stickle (2015) proposed that the overall WTP would be much lower due to the statements that were made after the initial yes or no answer, implying that instead of 51% WTP (Cohen et al., 2004), it would only be 25% WTP (Stickle, 2015). When comparing these two studies, it seems clear that factors other than a simple "yes or no" to paying to reduce crime are relevant in individuals' actual views and behaviors.

Willingness-to-Do

There is disagreement on WTP studies as they relate to crime. While they have value, other factors should be considered when trying to prevent crime, such as crime prevention efforts that do not involve spending money. Many crime prevention efforts may involve a financial cost and a potential victim acting (that does not cost anything financially) to reduce crime and for example, locking a car or home, walking on a well-lit sidewalk, asking for identification before allowing a repair person inside your home, and more. The efforts listed previously can reduce crime victimization, while they do not cost a tangible amount; however, they may take time and effort. The time and effort of crime prevention have not been firmly established in the literature. However, developing a method to evaluate what people are willing to do should be helpful for crime prevention. Therefore, this study introduces the concept of Willingness-to-do (WTD) to assess the

behaviors people are willing to do (that have no clear financial costs associated) to prevent crime. WTD is not contrary to WTP, but a supplement to the concept that allows researchers to understand what people are willing to do that may not cost any tangible amount.

A study conducted by Shorr Packaging Corp. (2017) hints at WTD concept, as described in this study, may prevent package theft. The researchers sent surveys to 1,000 people to assess their views on package theft to gather the information. Of the respondents, 53% changed plans to be at home when a package arrived. 71% of people said they would be willing to have their packages sent to secure locations with lockers instead of their homes, and 35% said they had already had a package delivered to a different address other than their home to avoid theft. These are the types of behaviors that WTD addresses, and the Shorr Packaging Corp. study indicate that people are WTD things that may have no monetary costs to prevent package theft.

A similar survey by Canary (2019), distributed to 1,238 adults in the United States, indicated that 49% of people were concerned with being a victim of package theft during the holiday season. Further, 18% had already been victims in 2018 (Canary, 2019). As a result of this fear, 22% of people chose to work from home when they expected packages. Furthermore, 38% of people were willing to opt for a less convenient delivery option, such as having the package delivered to their workplace or even stopping at the post office to pick it up.

Examining the impact of fear of crime is a substantial factor in WTD. Survey results of a research article by Hicks et al. (2021) examined the impact fear of package theft has on victim behavior. The survey consisted of 38 questions that were a mixture of

multiple-choice and open-ended questions regarding the factors that made people fearful of package theft and what they were willing to do to protect their packages. Of 562 participants across 49 states, two groups were distinguished. One was the previous victims (134), while the others were never victimized (427). Eighty-eight percent of the victims said they would be willing to get an electronic notification that their package had arrived, 57% would require a signature for a package to be delivered, and 53% would opt to have the package delivered to a separate location where someone could receive it. However, of those who had never been a victim of package theft, 90% would have an electronic notification, 49% would require a signature, and 49% would send the package to a separate location. The data indicated that previous victims of package theft were more willing to modify their behavior than non-victims.

Convenience is likely a significant factor in WTD. For example, it may be inconvenient for a person to retrieve a package from a USPS Post Office Box compared to retrieving the package from their front porch, and thus convenience is an important consideration in WTD. However, not all consumers were willing to modify their behavior to reduce theft.

While willingness-to-do does not require a monetary value, specific scenarios can be inconvenient for some people depending on what they decide is worth their time and what they would deem to be effective. For example, staying at home when expecting a package and requiring a signature for it to be delivered may be inconvenient, but it eliminates the potential for package theft. Another example would be to deliver the package to a drop-off point where the consumer would drive to get it.

WTD can give researchers an idea as to what crime prevention strategies could be the most effective for the time and effort that people have to spend. Certain factors such as fear of crime can add to what a person is willing to do, as noted in the report by Hicks et al. (2021), along with the article by Canary (2019). It is important to ensure that before any reform occurs to stop certain crimes, there is precise data that the public would be interested in enacting these changes themselves. If not, the strategies that researchers come up with might be in vain.

Security Layering

Security layering involves making a foundation of security devices and procedures to protect oneself better. The number of security measures taken is significant because one security measure may not be as effective as multiple layers of security across a wide range of items. For example, stores generally have Electronic Article Surveillance (EAS) tags hidden in clothing, which can deter theft, especially if they are hidden in the pockets or the soles of shoes. These sound an alarm when someone attempts to take an item out of the door with an EAS tag. This helps prevent theft in the stores and the warehouses (Hayes, 2007). However, these are not the only security steps taken, as there are usually CCTV cameras to detect theft, and retailers keep high-loss overstock items such as electronics in locked cages with a record of who accesses the cages. All steps taken make it less likely that theft will occur since three methods of SCP are in use. The cages increase the effort needed to take the item out, the CCTV cameras increase the risk, and the EAS tags increase risk and reduce the reward since a special item is needed to remove them, usually at a register. Having all three is more effective instead of only having just one. An example would be having only a CCTV camera system, which only

deters crime and increases the risk of getting caught. CCTV cameras do not make stealing the item physically harder, like having high-dollar items locked in cages.

If a retail-based security system is best implemented through different layers of security, then perhaps the same can be said of package theft. One technique may not be enough to stop a crime from happening, but if multiple techniques were to be layered, it could make it indefinitely harder for an offender to steal a package. There are three main methods to prevent package theft using SCP. These are increasing the effort, increasing the risks, and reducing the rewards. A lockable box placed on a residential porch would make the item physically harder to get to, thus increasing the product's effort. This means that one method is being used, but the others are not. If a doorbell camera were added, another layer would increase the risks. The final method, reducing the rewards, could be achieved by having a lockable box that looks like an ordinary bench from a distance, concealing the fact that a package is unattended. With all three of these methods of SCP layered, the chances of a crime happening would be drastically reduced.

Thesis Statement

Package theft is rising, causing significant impacts to consumers, retailers, and delivery services. This study aimed to apply the concepts of situational crime prevention, WTP, WTD, and security layering to analyze available package theft prevention techniques and procedures available to consumers. There are four main questions:

Question 1- What products exist to prevent porch piracy?

Question 2- What procedures exist to prevent porch piracy?

Question 3- What are the monetary costs and convenience costs to implement these efforts?

Question 4 – Which aspects of the SCP does each product/procedure use, and how are these compared?

The study is beneficial since little research is available to the public about package theft deterrence and prevention. The fear of package theft is a real issue that many people must deal with every time they order items online. If the public knows how much they would need to spend on deterrence, both in money and convenience, and the potential SCP score of these products and procedures, they can decide what works the best based on their risks and what they are willing to do and spend.

Methodology/Approach

Locating Procedures and Products

Many of the products evaluated in the present study were identified by an internet search for the "products to prevent package theft." Primarily, products were linked to Amazon, one of the most used online marketplaces. However, there were occasions when a company had a website dedicated to a product or several products that they produced designed to prevent package theft.

Two resources were consulted to identify the procedures used to prevent package theft. The first sources were scholarly studies and practitioner-oriented reports, which suggested procedures to reduce theft (see Stickle et al., 2020; Hicks et al., 2020; and Stickle, 2020). These documents consisted of procedural suggestions such as hiding a package or requiring a signature to obtain it. Additional procedures were found by looking at various online services that allowed consumers to store packages in secure areas like FedEx, Amazon, and USPS.

Evaluating Costs

Once identified, the price of the products and procedures were added to a database. Some products only require a one-time purchase. In these cases, the dollar amount required no calculation and was taken directly from the store page. Other products and procedures required a one-time purchase and a recurring monthly fee. Still, others have no starting cost but require a standard monthly bill to continue operation. For example, the Ring Video Doorbell required a one-time purchase of $199.99 and an additional monthly fee of $3 to save videos for future playback, receive picture notifications and customize the alerts received. To establish the cost of this product, the monthly amount was multiplied by 12 to get the yearly cost for operation and added onto the payment for the original item, making the total cost for the first year of use $235.99. The yearly cost was established since it allowed an even comparison of the price of products and procedures.

Evaluating Convenience

Convenience is also essential as it involves how easy a product or procedure is to use and install, which is consequential in whether a person is willing to use a product or procedure. However, it is not easy to define and measure convenience across different places, products, procedures, and people. What might be convenient to one person could be inconvenient to another. A convenience scale was developed to allow for consistent ranking to address this issue. Two distinct concepts were used to measure convenience. The first was the ease of installation. Ease of installation mainly applied to products, and it involved how difficult the product was to install onto the property. The second concept

was the ease of use. Ease of use had to do with what the consumer will consistently need to do to receive packages.

The convenience scale was developed by identifying a list of common installation or usage methods across all products. Each effort was placed into one of three categories; most convenient, medium convenient, and least convenient (see Table 1). The most convenient included a package delivered inside the house or delivered on the consumers' porch. Further, the product or procedure did not require installation or had an email or text notification for when a package was delivered to be considered most convenient.

Table 1

Convenience Scale

Most Convenience	Medium Convenience	Least Convenience
In the House	At Mailbox/On Property	Off Property
On the Porch	Minor Installation (Basic Tools)	Expert Installation
No Installation	Notification via Special App or Account	Large/Uncommon Tools Required
Email/Text Notification	Unlocking Device to Retrieve Package	
	Monitoring Required	

To qualify as medium convenience, products and procedures included the package being delivered at the mailbox or some other part of the property not directly outside the door. Further, the products and procedures themselves had to have a minor installation with basic tools, require a particular account or app required to use the monitoring notifications, require the user to unlock the product to retrieve a package

manually, or need to consistently monitor to ensure that the package was delivered and was not disturbed.

The least convenient procedures and products involved delivering the package off property, requiring heavy/uncommon equipment (e.g., concrete drill), or products that recommended expert assistance installation. Delivering a package off property may have required going out of the way to retrieve a package instead of having it delivered to a regular location. Expert installation required coordination between the consumer and the company that is installing the product, which could have taken time to plan out. The heavy/uncommon tools may not have been readily available to everyone, making it more difficult to find the tools and install the product.

Evaluating SCP Ranking

While actual product and procedure testing in real-world situations with active porch pirates is preferred, it was not feasible for the present study to accomplish this. Therefore, the score of each product and procedure was theoretically measured with the SCP techniques developed by Cornish and Clarke (2003). Three of the original five methods were used in the present study: increasing the effort, increasing the risk, and reducing the rewards. The other two methods, reducing provocations and removing excuses, were excluded since they were unlikely to be widely applicable to package theft, as they mainly included techniques that attempted to control the offender. All the products and procedures listed in the present study involved controlling the area where packages are delivered instead of controlling the offender. Each method consisted of 5 techniques, for a total of fifteen. Following the example set forth by the creation of the SCP, a chart was developed with examples based specifically on package theft to aid the

scoring process. The chart allowed for a consistent understanding of each technique and a consistent SCP ranking (see Table 2).

Table 2

SCP Scale

Increase Effort	Increase Risk	Reduce Rewards
Target Harden •Locked Box •PO/PUDO Box/Amazon Hub	**Extend Guardianship** •Unmonitored Cameras •No Trespassing Signs •Establish Neighborhood Watch	**Conceal Targets** •Hide Package out of View of Street •Locked Box •Smart Locks •Discreet Packaging
Control Access to Facilities •Smart Lock for Gate •Smart Lock for Building •Workplace Delivery •Fence •Locked Box	**Assist Natural Surveillance** •Spotlights •Have Package Delivered in Sight of Window •Defensible Space	**Remove Targets** •Smart Locks •Locked Boxes •Delivery Inside (house, garage, trunk)
Screen Exits •Workplace Delivery •Cameras	**Reduce Anonymity** •Camera •Package Pick-up from Drop Off Point •Workplace Delivery •Uniformed Delivery Driver	**Identify Property** •Record Serial Number
Deflect Offenders •Removed from Sight upon Delivery •Street Closures, Gated Entry, ect.	**Utilize Place Managers** •Monitored Cameras/AI Response •Establish Neighborhood Watch	**Disrupt Markets** •Report Seemingly Stolen Items on Online Retailers
Control Tools •Unable to Scan Barcode for Contents	**Strengthen Formal Surveillance** •Cameras •Alarm Systems	**Deny Benefits** •Product Only Works upon Customer Activation

Each product and procedure were scored based on the three different methods using the descriptions of the products on the websites they were sold on. The score could range between one and five, depending on how many SCP techniques were identified as being present by the product or procedure. The scores were then summed across all methods totaling a possible score of 15, where zero indicated that the product or procedure did not have any identifiable SCP techniques and 15 indicated all 15 SCP techniques were present in one product or procedure.

Question 1- What products exist to prevent porch piracy?

A product was any physical item purchased to help decrease the risk of package theft directly. There were 22 (71%) products evaluated in this study. These products were divided into three main groups for easier analysis, understanding, and presentation. The first group consisted of cameras (n = 8). Out of these, there were four doorbell cameras with motion-activated recording and three dedicated security cameras with some alarm functionality, such as a loud siren or spotlight. The last camera was a fake camera designed to give the impression that the area was being monitored.

The second group consisted of locked containers (n = 7) installed or left outside a residence and allowed deliveries inside the container. Four containers had a keypad lock. An additional two could be unlocked with a phone, ensuring that the code was never lost and accessible to delivery services. One box came with a tamper-proof key lock.

The last group of products included miscellaneous items (n = 7) which did not fit well into another group. Three of the items were smart locks that could allow the delivery carrier to store a package in the garage or house of the customer. Two of the other items

were sensors that would detect movement, which primarily fit on a garage door and a mailbox hatch; if opened, an alert would be sent to the user reporting a potentially unauthorized entry. The last items (n = 2) were signs with a message indicating that a security system was in place.

Question 2- What procedures exist to prevent porch privacy?

A procedure was any practice that does not need a physical product but may require a consumer behavior modification or a purchasable service to prevent package theft. There were nine (29%) procedures in the present study. The procedures were broken down into three main groups. The first group involves delivery to a package drop-off point outside the customer's neighborhood. Three services (n =3) allowed this: FedEx Store Pickup, Amazon Hub, and USPS PO Box.

The second group was two (n = 2) drop-off points relative to where a person spends most of their time in the workplace or neighborhood. One of these points was workplace delivery. Workplace delivery consists of picking up a package that an online shopper sends to be delivered to their workplace to take it home with them. The second point was at a neighbor’s house when they were home, requiring coordination but usually not far out of the way.

The last group was delivered to the house. Delivery to the house included four procedures (n =4): requiring a signature, requesting the delivery company conceal the package, telling the delivery company to put the package in the mailbox, and using Amazon Key. Requiring a signature, requesting the delivery company to conceal the package, or requesting the delivery company to put the package in the mailbox are all directions that can be given upon ordering a package from certain online retailers.

Amazon key is a service that allows Amazon delivery drivers access to interior spaces on the property, such as inside the front door, in a garage, or inside a gate through a smart lock. By using this, parcels can be safely stored in the home by the delivery company, even when the consumer is not home.

Question 3- What are the monetary costs and convenience costs to implement these efforts?

Costs. The total costs of each item were found by taking the initial cost (e.g., buying the product) and adding the cost of operation (e.g., a monthly fee, if applicable) together. Of all the products and procedures, 24 (77%) had a monetary cost associated with them. The average price of all products and procedures listed in the present study was $161.80, with a median of $129.99. The highest cost of a product or procedure was $596.00, and the lowest cost was $0. Of the procedures, two (22%) had a cost with an average of $79.44. All the products had a cost associated with them, and the average for these was $195.40.

The products that had a one-time cost and no recurring payment accounted for 19 (61%) out of all products and procedures in the database. The average price of these was $190.89. The median was $169.00. The highest one-time cost of a product was $549.99, whereas the lowest was $8.99.

The products and procedures that required a yearly fee totaled 5 (16%) of all products and procedures reviewed. The average yearly cost was $171.80. The median cost was $72.00. The highest yearly cost was $596.00, and the lowest was $36.00. Two (22%) of all procedures had a yearly cost, and three (14%) products had a recurring fee.

Convenience. Convenience is challenging to quantify objectively, but a baseline was established by developing a convenience scale. The convenience scale was primarily targeted towards the consumers of the various products and procedures. Multiple qualifiers were developed for the scale, such as delivery inside the house, delivery on the property, and off-property delivery. They indicated whether an item would have the most convenience, medium convenience, or least convenience. Of all products and procedures, four (13%) were the most convenient items possible. An additional 13 (42%) were scored at medium convenience. The last group consisted of 14 (45%) and was considered the least convenient.

Procedures (e.g., Amazon Key) were ranked as more convenient than products (e.g., Ring Spotlight Camera), with two (22%) being ranked as most convenient, whereas only two (9%) products were considered most convenient (see Table 3). Eleven (50%) products scored medium convenience versus two (22%) of procedures. The least convenient products added up to nine (41%), while the procedures added up to five (56%).

Table 3

Convenience	**Products**	**Procedures**	**Total**
Most Convenient	9%	22%	13%
Medium Convenience	50%	22%	42%
Least Convenient	41%	56%	45%

Question 4- Which aspects of the SCP does each product/procedure use, and how are these compared?

SCP was evaluated using three methods from the original five, each with five techniques. After identifying the most applicable 15 SCP techniques and developing examples to help guide the scoring process (see table 2), each product and method was scored. The minimum score could be zero, indicating no techniques were present, and the maximum could be 15, indicating the product or procedure used all possible techniques. The scores will be presented within each method to allow for better explanation (see Table 4 and Table 5).

Table 4

Products	Increase Effort	Increase Risk	Reduce Reward	Techniques Used
Argus 3 Spotlight Camera	1	5	0	6
Ring Spotlight Camera	1	5	0	6
Nest Doorbell	1	4	0	5
Vivint Doorbell Camera Pro	1	4	0	5
Vivint Outdoor Camera Pro	1	4	0	5
SimpliSafe Doorbell Pro	1	3	0	4
Ring Video Doorbell 4	1	3	0	4
WALI TC-S2 Bullet Fake Camera	0	1	0	1
Danby Parcel Guard Smart Mailbox	5	3	2	10
DoorBox Weatherproof Package Delivery Box	4	1	2	7
Yale Smart Delivery Box	4	1	2	7
BenchSentry Porch Box	4	1	2	7
CleverMade Parcel LockBox S100 Series	4	0	2	6

6900B Elephantrunk Parcel Drop Box	4	0	2	6
DeliverySafe Lockable Box	4	0	2	6
Vivint Garage Door Sensor	4	2	2	8
Sifely Keyless Entry Door Lock	4	2	2	8
Hornbill Smart Door Lock	4	2	2	8
Ring Access Controller Pro 2	2	0	2	4
Ring Mailbox Sensor	1	1	1	3
No Trespassing Camera Signs	0	1	0	1
Ring Solar Security Sign	0	1	0	1

Table 5

Procedures	**Increase Effort**	**Increase Risk**	**Reduce Reward**	**Techniques Used**
FedEx Store Pickup	5	4	2	11
Amazon Hub	5	4	2	11
USPS PO Box	5	4	2	11
Neighbor Delivery	4	2	2	8
Workplace Delivery	2	1	0	3
Signature	4	2	2	8
Amazon Key	4	2	2	8
Conceal Package	1	0	1	2
Mailbox Delivery	1	0	1	2

Increasing the Effort. Increasing the effort involved techniques that made an item physically harder for an offender to access. These included (1) target hardening, (2) controlling access to facilities, (3) screening exits, (4) deflecting offenders, and (5) controlling tools. The types of products that used the most techniques in this method were

parcel boxes. The top product that scored the highest for the increasing effort was the Danby Parcel Guard Smart Mailbox which scored a five. It succeeded in target hardening since the offender would have difficulty opening the box to get the package. It controlled access to facilities since only the person with the code for the box could get in. The locked box also has a camera on it, so it screened exits. Also, when a delivery driver puts a package in it, the package is removed from the sight of the road, thus deflecting offenders. Lastly, the box also controlled tools since the offender cannot use a barcode scanner to see what the item is when the item is locked in a box.

The top procedure for increasing the effort was tied between FedEx Store Pickup, Amazon Hub, and having a USPS PO Box. All three of these procedures received a score of five in this method. They were similar procedures, each in a defensible space. They could target harden, deflect offenders, and control tools since all packages are either in a box or in an employee-only area, limiting the exposure to other people. The three also controlled access to facilities by only letting the person with the special code or key acquire the parcels. Finally, they screened areas due to cameras being in the area. As such, they scored evenly.

Increasing the Risk. Increasing the Risk involves techniques that raise the risk level for an offender. Specifically, for package theft, these involved (1) extending guardianship, (2) assisting natural surveillance, (3) reducing anonymity, (4) utilizing place managers, and (5) strengthening formal surveillance. Products scoring the highest in this area of SCP were cameras since they incorporated most or all of these techniques. For example, the highest-ranking product for increasing the risk was the Argus 3 Spotlight Camera, with a score of five. It extended guardianship since the consumer can

look at their package at any time while assisting natural surveillance since spotlights are on the product. Anonymity was also reduced since the offender can be recorded and identified later. The camera utilized place managers since it had a prerecorded message that could play to whoever tried to steal the package. The last technique was accomplished by the alarm playing when an intruder is on the property.

The highest-scoring procedures for increasing the risk were the FedEx Store Pickup, Amazon Hub, and a USPS PO Box, which scored a four. The three were tied since they extended guardianship, utilized place managers, and strengthened formal surveillance through various cameras or people in the area. Anonymity is also reduced since the likelihood of catching an offender on camera is high, and most of the workers in the areas are in dedicated areas where only staff are allowed access.

Reducing the Reward. Reducing the reward involved making the crime not worth the effort or risk the offender needs to take to steal the package. The techniques in this method were (1) concealing targets, (2) removing targets, (3) identifying property, (4) disrupting markets, and (5) denying benefits. The main products for reducing rewards were lockable boxes, smart locks, and the Vivint Garage Door Sensor. Many different products matched because the highest score for any product was two out of five. These were concealing targets and removing targets. The offender is unlikely to think a crime is worth committing if they cannot see a physical reward. All products listed here locked the reward out of sight, whether in the home or a lockable box on the porch.

The highest scoring procedure for reducing the rewards was tied between the FedEx Store Pickup, Amazon Hub, Amazon Key, and having a USPS PO Box. They all succeeded in the first two techniques: concealing and removing targets. These procedures

keep the package out of sight from potential offenders, making them equal in the number of techniques used.

Summary. Overall, the product that used the most techniques was the Danby Parcel Guard Smart Mailbox, with a score of 10 out of a possible 15. The highest scores came from the Vivint Garage Door Sensor, Safely Keyless Entry Door Lock, and Hornbill Smart Door Lock, which totaled 8 out of 15. These are compared to the highest number of techniques measured on a procedure tied between the FedEx Store Pickup, Amazon Hub, and a USPS PO box. These all scored an 11 out of 15, meaning the procedures used more techniques overall.

Relationship between Price and SCP Scores

While the products and procedures included in the study scored differently across SCP principles, they all came at different prices. The present study revealed little relationship between the cost of a procedure or product and the number of SCP techniques associated. One example is the FedEx Store Pickup and Amazon Hub, which had no financial cost and scored high on the SCP scale. Conversely, USPS PO Boxes had a cost associated yet had an identical SCP score. Further, USPS Boxes can cost significantly, depending on the location. For example, getting a USPS PO Box in San Francisco, CA, would cost $596.00 per year, which happens to be the second-highest-ranking city in the US for package theft incidents (Carlsen, 2021). In other words, the price was not a proxy for increased SCP techniques. A similar relationship was found with products, as with the top five products that used the most techniques; Danby Parcel Guard Smart Mailbox ($349.00), Vivint Garage Door Sensor ($50.00), Sifely Keyless

Entry Door Lock ($129.99), and the Hornbill Smart Door Lock (136.99), all scored eight out of 15, yet the costs were significantly different.

Relationship between Price and Convenience

In contrast with the results of price on SCP techniques, the relationship between cost and convenience was notable. An example of this was the five most expensive products, DeliverySafe Lockable Box ($549.99), Vivint Outdoor Camera Pro ($399.99), Danby Parcel Guard Smart Mailbox ($349.99), Ring Access Controller Pro 2 ($299.99), and the BenchSentry Porch Box ($299.00). Each of these was ranked least convenient due to the difficulty of installation. Comparatively, three of the five least expensive items: No Trespassing Camera Signs ($8.99), WALI TC-S2 Bullet Fake Camera ($11.99), and the Vivint Garage Door Sensor ($50.00) all were ranked as medium on the convenience scale. Further, the other two least expensive products were ranked most convenient: the Ring Mailbox Sensor ($29.99) and the Ring Solar Security Sign ($49.99). Based on the current study, it appears that expense may not equate to convenience.

Conclusion

Package theft is a significant problem in a world where online shopping is increasing. Moreover, this unique crime is not recorded in an official capacity, making studying this unique and emerging crime difficult. In 2017, Campo suggested that 1 in 10 households had fallen victim to porch piracy. Some data show package theft is increasing rapidly as each year passes. According to C+R Research (2019), 36% of 2,000 consumers said they had previously been victims of porch piracy. The data indicates that the amount of crime is increasing, and the financial impact on victims and retailers is rising as well.

According to a consumer survey, the price to replace the items stolen averaged $109 (C+R Research, 2019).

The COVID pandemic has also affected crime, more specifically package theft. With many people at home, the number of people who chose to shop online has never been higher and is a trend that may maintain even after COVID. Multiple retailers have significantly increased online sales, such as Target, which increased eCommerce by 141% (Vigderman, 2021). Likewise, Walmart has had an increase of 74%, and Amazon had to hire an additional 175,000 people to keep up with rapid orders of online consumers (Vigderman, 2021). This spike in online shopping is likely the driving factor behind incidents of package theft increasing.

At this time, package theft research is not common, leaving many people unsure how to protect themselves. This study aimed to examine products and procedures commonly available to the public based on price, convenience, and crime prevention techniques to provide consumers with a clearer understanding of how to protect against package theft.

The products were found online by searching "products to prevent package theft," Many were linked to the Amazon webpage, with a few being found on manufacturer websites. The procedures were found in two ways: various scholarly studies such as Stickle et al., 2020; Hicks et al., 2020; and Stickle, 2020. The second way was through looking at various services that give the option to store packages such as FedEx, Amazon, and USPS. All products and procedures were scored by examining how many techniques of SCP were used with each product or method, with the lowest score being zero and the highest being a 15.

To address the purpose of this research, the author developed four questions. The first was “What products exist to prevent porch piracy.” There were multiple products on the market, including cameras, lockable boxes, and other miscellaneous items such as smart locks, motion sensors, and signs that stated security measures were in place.

The second question was “What procedures exist to prevent porch piracy,” The study found that multiple groups of procedures existed. The first main group was pickup points located outside the consumer’s neighborhood, the second involved pickup points near where a person spent most of their time, such as a workplace or neighborhood. The final group was a pickup point on the consumer's property.

The third question was, “What are the monetary costs and convenience costs to implement these efforts.” The average price for a product or procedure in the study was $161.80. The study found that procedures ($79.44) had a lower average price than products ($195.40). It is also important to note that 61% of all products and methods had a one-time purchase price, while 16% had a recurring monthly fee. The last 23% required no cost whatsoever.

The final question was, “Which aspects of the SCP does each product/procedure use, and how are these compared.” The best type of product for increasing the effort was the porch boxes. Specifically, the Danby Parcel Guard Smart Mailbox scored the highest five. The highest scoring procedures were the FedEx Store Pickup, Amazon Hub, and USPS PO Boxes, scoring five. The cameras excelled in increasing the risk, with the highest-scoring camera being the Argus 3 Spotlight Camera. The FedEx Store Pickup, Amazon Hub, and USPS PO Boxes were the highest scoring procedures, each scoring a four. The main products for reducing rewards were lockable boxes, smart locks, and the

Vivint Garage Door Sensor, as these all scored a two. The procedures were the FedEx Store Pickup, Amazon Hub, Amazon Key, and having a USPS PO Box, all scoring a two.

Discussion

Consumer needs to assess their current level of risk for package theft and what they need to do or purchase to protect their packages. Once the risk level is identified, the consumer must decide what is right for them, based on factors such as convenience, price, and perceived effectiveness of the product. For example, someone who lives in a rural area may not have to worry about package theft as much as someone near a busy street (Stickle et al., 2019).

However, employing a single security measure may be insufficient. A better way to ensure sufficient protection against porch pirates is by using multiple methods to layer security. However, it is not easy to know what layers of security should be used if consumers do not fully understand what each product or procedures do to protect a package. For example, two cameras (while layered) do not provide the same situational crime prevention (SCP) as a camera and a lockable porch box. By evaluating many of the everyday products and procedures used to thwart package thieves, consumers can learn how to layer their security for more effective protection.

However, the layers of security and SCP techniques are not the only things to consider, as the costs associated with protection are also impacted. A consumer could purchase a Danby Parcel Guard Smart Mailbox for $349.99, which scored a ten in total SCP techniques since it used all five techniques to increase the effort, three in increasing the risk, and two in reducing the reward. Alternatively, a consumer could purchase an Argus 3 Spotlight Camera ($109.99) and a CleverMade Parcel LockBox S100 Series

($85) for a total of $194.99, which is considerably less expensive than the Danby Parcel Guard Smart Mailbox ($349.99), while also scoring two points higher in techniques at a 12 since both products combined used all five techniques in increasing the effort and increasing the risk while scoring a two in reducing the rewards.

It is important to mix different products and procedures to get the best protection and ensure that it is as convenient as needed for the consumer. One consumer might say that they would be willing to sacrifice convenience for a better price. That person could have their packages delivered to an Amazon Hub for free, albeit less convenient, while still scoring high in the amount of SCP techniques it uses. Another might live in an unpopulated area and might not need much protection. Choosing to have a sign warning of a security system and installing fake cameras could sacrifice the amount of crime prevention techniques they are using but maximize convenience and price. The consumer needs to ask what protection they need before potentially buying these products or going through the procedures. It is also important to note that convenience is directly related to willingness to do (WTD), which is often neglected as a factor in crime prevention but is just as important as WTP. When a procedure or crime prevention strategy has little to no cost, consumers must ask themselves if they are willing to do the procedure or crime prevention strategy. If they are not, then it likely will not work.

Limitations

There were certain limitations in this study, and many of these limitations were unavoidable. The most prominent limitation of this research is that the products and procedures were not tested in real-world scenarios. Due to the nature of this study, many products were costly. Due to the number, all of them could not be purchased, so instead,

all of the information was found in their online descriptions. These descriptions describe how they are supposed to work, but no confirmation could be made. Testing with real porch pirates would also prove difficult and incredibly time-consuming because of the number of products that would have to be tested. Another limitation is that some of the scores on convenience are biased, as convenience is incredibly subjective from person to person.

These limitations could be rectified through future research on anti-package theft products and procedures. Since the present study primarily used descriptions of websites to score the products and procedures on SCP and convenience, perhaps examining reviews could yield additional insight on how the product works. Reviews could help in comparing the proposed SCP with the actual SCP.

Going further, surveys could be sent out to the buyers to inquire why the consumers bought package theft prevention measures. These surveys could also ask where the consumer lives (rural or urban) and if they primarily want the products for personal or business use. Surveys could help determine who may be at more risk of package theft and how much money they spend to prevent it.

Despite the limitations, this study is important since it helps consumers defend themselves from package theft in a world where online shopping is the new normal. As package theft increases, consumers need to identify products and procedures that fit their budget and lifestyle to protect their products. This study can help the consumer decide on many different products and methods and find out what is best for them regardless of whether they live in a busy neighborhood or a more rural area. Whether prioritizing price or convenience, a clear set of options is a priority. Lastly, the data accumulated in this

study also shows that money does not have to be the deciding factor to protect from crime. In fact, spending wisely and layering different products could result in better protection for less money than some of the most expensive anti-package theft products and services.

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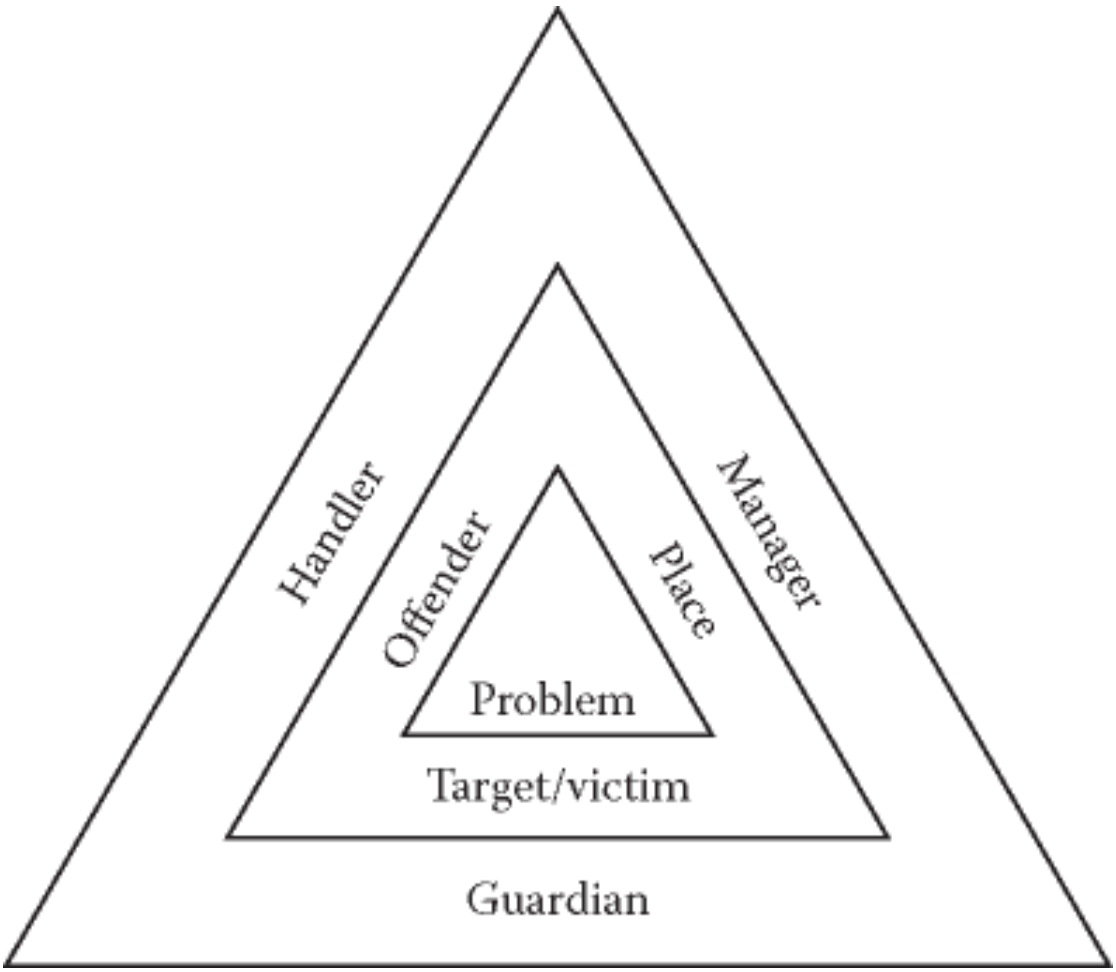
Appendices

Appendix A

Increase the effort	Increase the risks	Reduce the rewards	Reduce provocations	Remove the excuses
1. Target Harden • immobilizers in cars • anti-robbery screens	*6. Extend guardianship* • Routine precautions: go out in groups at night • 'Cocoon' neighborhood watch	*11. Conceal targets* • gender-neutral phone directories • off-street parking	*16. Reduce frustrationsand stress* • efficient queuing • soothing lighting/music	*21. Set rules* • rental agreements • hotel registration
2. Control access • alley-gating • entry phones	*7. Assist natural surveillance* • improved street lighting • support whistleblowers	*12. Remove targets* • removable car radios • pre-paid public phone cards	*17. Avoid disputes* • fixed cab fares • reduce crowding in pubs	*22. Post instructions* • 'No parking' • 'Private property'
3. Screen exits • tickets needed for exit • electronic merchandise tags	*8. Reduce anonymity* • taxi driver ID's • school uniforms	*13. Identify property* • property marking • vehicle licensing	*18. Reduce emotional arousal* • controls on violent porn • prohibit paedophiles working with children	*23. Alert conscience* • roadside speed display signs • 'Shoplifting is stealing'
4. Deflect offenders • street closures • separate bathrooms for women	*9. Utilise place managers* • CCTV for double-decker buses • Two clerks in liquor stores	*14. Disrupt markets* • monitor pawn brokers • licensed street vendors	*19. Neutralise peer pressure* • 'idiots drink and drive' • 'it's OK to say NO'	*24. Assistcompliance* • litterbins • public lavatories
5. Control tools/weapons • toughened beer glasses • disabling stolen cell phones	*10. Strengthen formal surveillance* • security guards • CCTV in town centres	*15. Deny benefits* • ink merchandise tags • graffiti cleaning	*20. Discourage imitation* • rapid vandalism repair • V-chips in TV's	*25. Control drugs and alcohol* • breathalysers in pubs • alcohol-free events

Appendix B


Handler
Offender
Place
Manager
Problem
Target/victim
Guardian

Appendix C

Increasing Perceived Effort	Increasing Perceived Risks	Reducing Anticipated Rewards	Removing Excuses
1. Target hardening	*5. Entry/exit screening*	*9. Target removal*	*13. Rule setting*
Slug rejecter device	Automatic ticket gates	Removable car radio	Customs declaration
Steering locks	Baggage screening	Women's refuges	Harassment codes
Bandit screens	Merchandise tags	Phonecard	Hotel registration
2. Access control	*6. Formal surveillance*	*10. Identifying property*	*14. Stimulating conscience*
Parking lot barriers	Red light cameras	Property marking	Roadside speedometers
Fenced yards	Burglar alarms	Vehicle licensing	"Shoplifting is stealing"
Entry phones	Security guards	Cattle branding	"Idiots drink and drive"
3. Deflecting offenders	*7. Surveillance by employees*	*11. Reducing temptation*	*15. Controlling disinhibitors*
Bus stop placement	Pay phone location	Gender-neutral listings	Drinking-age laws
Tavern location	Park attendants	Off-street parking	Ignition interlock
Street closures	CCTV systems	Rapid repair	V-chip
4. Controlling facilitators	*8. Natural surveillance*	*12. Denying benefits*	*16. Facilitating compliance*
Credit card photo	Defensible space	Ink merchandise tags	Easy library checkout
Gun controls	Street lighting	PIN for car radios	Public lavatories
Caller-ID	Cab driver I.D.	Graffiti cleaning	Trash bins

Source: Adapted from Clarke and Homel (1997)