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IDENTITY THEFT AND ROUTINE ACTIVITIES: A TEST OF VICTIMIZATION
USING COLLEGE STUDENTS

By

Brian Dean Fell
B.A./B.S., University of Louisville, 2004

A Thesis
Submitted to the Faculty of the
Graduate School of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Master of Science

Department of Justice Administration
University of Louisville
Louisville, Kentucky

May 2006

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A Thesis Approved on

April 14, 2006

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Thesis Director

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ABSTRACT

IDENTITY THEFT AND ROUTINE ACTIVITIES: A TEST OF VICTIMIZATION USING COLLEGE STUDENTS

Brian D. Fell

April 14, 2006

This thesis examines the link between routine activity theory and identity theft victimization using college students. Using data collected from 308 undergraduate students attending a southeastern university, this study seeks to present the likelihood that college students will become a victim to identity theft in the future. In doing so, the study also seeks to present the college student's perception that they could become a victim of identity theft in the future. Overall, this study has the main objective of determining if a link exists between college student's routine activities and the risk of them becoming victims of identity theft. The results specifically showed that how college students guard their credit card information (i.e., receipts) directly affects their likelihood of identity theft victimization. Additionally, support was found for two elements of routine activity theory, suggesting routine activity theory is important to the study of identity theft victimization. Policy implications for these findings are discussed.

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INTRODUCTION

While identity theft has been in existence since the creation of identity, its prevalence in our society has grown in recent years. Identity theft is quickly becoming what Hoar (2001) has called the “crime of the new millennium” (p. 1). Although identity theft is a newly studied criminal behavior, (Milne, 2003; Sharp, Shreve-Neiger, Fremouw, Kane, & Hutton, 2004; Allison, Schuck, & Lersch, 2005) identity theft is one of the fastest growing white-collar crimes in the United States today (Hoar, 2001). For instance, the U.S. General Accounting Office (USGAO, 2002) reported that the actual losses associated with identity theft were totaled at \$442 million in fiscal year 1995 and by the fiscal year 1997 they had increased to \$745 million.

The Federal Trade Commission (FTC, 2004) reported 31,000 complaints of identity theft in the year 2000. By the end of 2004, the FTC had reported 246,570 complaints of identity theft. In September 2003, the FTC conducted a phone survey in the United States on identity theft victimization. The results showed that 1.5 percent of survey participants reported that within the last year they had been victims of some type of identity theft not including credit cards. 2.4 percent of the participants said they were victims of someone misusing their existing credit cards or card numbers in the last year. A total of 12.7 percent said that they were victims of some type of identity theft within the last five years. While these do not appear to be huge percentages, when analyzing these results on a National level, the FTC (2003) concluded that their results suggested

that ten million Americans had discovered that they were the victim of some form of identity theft within the last year. In another study involving a large municipal police department in Florida, Allison et al. (2005) found that the number of incidents of identity theft that were reported to the police appeared to be rising at a greater rate than other theft-related offenses. To put the growth of identity theft into perspective, Lopucki (2001) reported that the best estimates of the damage that identity theft had created in our society was in excess of 100,000 victims in one year for a grand total of more than two billion dollars lost per year.

The purpose of this study is to link routine activity theory to identity theft using college students. This study is important because the criminal behavior of identity theft is growing in our society and research is needed to combat this growing trend. The following paper proceeds in five chapters. Chapter one defines identity theft, reviews identity theft legislation, presents methods of identity theft, forms of identity theft, and current literature on identity theft. Chapter two presents Cohen and Felson's (1979) routine activity theory, a review of the relevant literature on this theory, and how the present study applies routine activity theory to the criminal behavior of identity theft. Chapter three lists and discusses the study's sample, procedures, measures, and method of data analysis. Chapter four presents the data analysis and results of the study. Chapter five provides a discussion of the findings, included are policy implications and study's limitations.

CHAPTER 1 IDENTITY THEFT

Several different definitions of identity theft are present in the literature, all of which maintain that identity theft is the unlawful use of another person's personal information for illegal purposes. For the purposes of this study, Perl's (2003) definition summarizes the rest of the literature by maintaining identity theft as:

[T]he theft of identity information such as a name, date of birth, social security number, credit card number, or any other personal identification in order to obtain loans in the victim's name, steal money from the victim's bank accounts, illegally secure professional licenses, and birth certificates, or other unauthorized use of the victim's personal information for financial or other activity (p.170).

Identity theft is classified as a white-collar crime. According to the Federal Bureau of Investigation, white collar crimes are

"...those illegal acts which are categorized by deceit, concealment, or violation of trust and are not dependent on the application or threat of physical force or violence. Such acts are committed by individuals and organizations to obtain money, property, or services, to avoid the payment or loss of money or services, or to secure a personal or business advantage." (USDOJ, 1989, p.3)

Identity Theft Legislation

This section outlines two pieces of legislation that deal with identity theft: the Identity Theft and Assumption Deterrence Act of 1998 and the Fair and Accurate Credit Transactions Act. These statutes establish the behavior of identity theft as illegal, reinforcing that it is a white-collar crime. Over the last decade, the task of creating legislation that would counterbalance the growing trend of identity theft was undertaken

by lawmakers. Identity theft is a difficult offense to detect and punish because often offenders work in multiple locations.

The majority of victims do not realize they have been targeted until months after the crime has been committed (Hoar, 2001). Thus, federal prosecution has been limited, offenders have been going unpunished and the numbers of offenses have been consistently on the rise. Nevertheless, since 1998, several pieces of legislature have been passed to deter identity theft. The first major piece of legislation was the Identity Theft and Assumption Deterrence Act of 1998 (ITADA). This federal law specifically defines identity theft, the severity of punishment for each offense, and the circumstances surrounding the incident. Specifically, the Identity Theft Act in section 1028(a)(7) states that it is illegal for anyone who:

knowingly transfers or uses, without lawful authority, a means of identification of another person with the intent to commit, or to aid or abet, any unlawful activity that constitutes a violation of Federal law, or that constitutes a felony under any applicable State or local law.

The ITADA of 1998 goes on to identify and define the sections of the law that are broken when identity theft occurs. For example, document-making implements, identification documents, and means of identification, are all defined by ITADA when punishments are to be set in place where the law has been broken. ITADA defines document-making implements as any device used to create a false identification document. ITADA defines identification documents as any document issued under the authority of a state, government or country that is intended or commonly accepted for the purpose of identifying an individual. ITADA defines means of identification as a name or number that may be used independently or together that identify a specific individual. Hoar (2003) points out other federal statutes such as, computer fraud, mail fraud, and credit

card fraud are offenses that include identity theft and are punished accordingly. For instance, when in the process of stealing another individual's identity you use their credit card to purchase anything you are not just committing identity theft, but you have also committed credit card fraud. By punished accordingly, a person convicted of identity theft can receive no more than fifteen years if that individual commits an offense that involves the use of another person's means of identification and the result is anything of value aggregating \$1,000 or more in a one year period. ITADA also established the Federal Trade Commission (FTC) as a National Clearinghouse for identity theft. That is, the FTC is in charge of collecting and keeping track of identity theft complaints across the United States, while also providing educational programs to deter future identity theft victimization.

The second major piece of legislation to combat identity theft is the Fair and Accurate Credit Transactions Act (FACT Act) developed in 2003. The FACT Act's sole purpose was to protect consumers against identity theft while improving the quality of credit information. Thus, the FACT Act differs from ITADA in that it focuses on agencies rather than individuals. The FACT Act held credit reporting agencies to higher standards. Under the Act, credit reporting agencies are required to provide consumers with one free credit report a year to help guard them against identity theft.

AnnualCreditReport.com is the official site to help consumers to obtain their free credit report. Further, the FACT Act requires these agencies to report credit scores at more reasonable fees; usually credit reports are available from four to eight dollars (FTC, 2004). In combating identity theft before it occurs, the Act also required merchants are required to leave all but the last five digits of a credit card number off store receipts. The

FACT Act also made reporting identity theft easier by narrowing the number of phone calls people have to make in order to alert companies their identity has been compromised. Because of the Act, when consumers detect that their identities have been stolen, they can make one phone call to an established nationwide system of fraud alerts. By calling this nationwide system people can receive free advice, set off a nationwide alert that their information is being misused, and protect their credit standing. The FACT Act requires credit reporting institutions to establish certain procedures for dealing with reports of identity theft. The FACT Act may also influence law enforcement agencies, due to the fact that identity theft complaints must now be reported to local law enforcement for official record documentation.

Along with the Federal government, states have made significant advancements in identity theft legislation. Perl (2003) contends that forty-eight states currently have laws protecting their citizens from identity theft. Arizona was the first state to have an identity theft law set in place in 1996 (Allison et al., 2005; Perl, 2003). Currently, state laws vary among three categories (Perl, 2003). The first category is very narrow, classifying identity theft as “financial identity fraud” which only punishes those identity theft offenders who commit with the intention of financial gain (Perl, 2003, 174), for example, Idaho. The second category of state identity theft statutes is broader, considering both financial purpose and punishment for those who commit any unlawful acts through identity theft (Perl, 2003), for example, Arizona. The difference between these two categories of state identity theft legislation is that the second category encompasses the behavior as being more than just financial gain, suggesting that it is illegal regardless of the motive. The final category of state identity theft legislation collectively punishes for

criminal identity theft, something overlooked by the majority of states. This type of statute includes using a victim's identity "to commit a crime, avoid identification, apprehension, or prosecution for a crime" (Perl, 2003, P. 174), for example, Maryland. In most state Identity theft is a felony (Pearl, 2003). Clearly, there is variation in state laws dealing with identity theft.

Identity Theft Methods

This section illustrates the different methods by which identity thieves steal an individual's personal identifying information. Identity theft physical and non-physical methods are examined using the elements of the Department of Justice's definition of a white collar crime.

Identity theft falls properly under the definition of a white-collar crime committed mostly without the use or threat of physical force. The majority of identity theft victims do not realize that their information has been stolen. Identity offenders conceal their criminal intentions and actions from their victims using many different methods (Slosarik, 2002). There are three primary ways in which identity thieves get their data. Arguably the easiest method of identity theft chosen by identity thieves is "dumpster diving." This method is accomplished by going through a company's or individual's trash or recycling in search of documents displaying personal information, for example one may look for credit card or debit card receipts (Allison, Schuck, & Lersch, 2005). Another popular example of identity theft is "shoulder surfing" (Hoar, 2001). This method involves a person looking over one's shoulder when punching in credit card information over the phone or just listening to your response in conversations with credit unions. A slightly craftier means of obtaining someone else's identity is called "pretext

calling.” “Pretext calling” involves a person calling a bank pretending to be a “victim,” while asking questions and using deceptive techniques to solicit another person’s account information (Slosarik, 2002). Perl (2003) refers to another method as an “inside job.” This occurs when information is collected by a fellow employee at a person’s place of employment and then used to carry out some form of identity theft (Perl, 2003).

There are more technologically savvy methods of obtaining another’s personal information. For instance, victims of identity theft have personal information stolen from their computers and even company databases, by thieves who “hack” (break into their network) into their system via the internet (Newman, 2004). Another common method of identity theft made popular with internet and technology is “phishing.” “Phishing” occurs when criminals go on-line and pose as corporations requesting personal information (O’Sullivan, 2003). For example, the criminal may pose as a bank corporation needing certain information before sending the consumer (or victim if successful) their bank statement. More advanced techniques of identity theft are used by cashiers (i.e., at retail stores or restaurants). A method used by cashiers specifically, involves a small device that allows the person who swipes the card to store all of the credit card holder’s information (Dadisho, 2005). This information can then be downloaded directly into a false credit card (Slosarik, 2002). “Skimming” occurs when employees such as waitresses and cashiers use scanners sold on the internet to steal personal information (Slosarik, 2002).

All of the above methods of stealing another’s identity involve forms of deception, concealment, and the violation of trust while not directly having the criminal come into contact with the victim. The physical method of stealing a person’s identifying

information involves an offender physically taking or forcing a victim's possession away from him or her. Therefore, the victim's identity is their possession or property. The offender does not conceal his or her identity when engaging in the majority of physical methods used for stealing another person's identity. Probably, the most obvious physical method of identity theft is the stealing of one's wallet or purse for the purpose of obtaining their personal information. Other methods of stealing personal identification would be removing one's mail from their mailbox (Slosarik, 2002), stealing their cell-phone, or illegally using another's name to obtain a land-line phone or utilities by tapping into or getting it turned on without a threat from the individual.

Forms of Identity Theft

This section illustrates the forms used by criminals committing the behavior of identity theft. The identity theft methods are shown to be consistent with the methods defined by the Department of Justice concerning white-collar criminals.

The criminal's reasoning for using another's identity is for financial gain or concealment purposes (Newman, 2004). Both forms of identity theft involve different levels of commitment on behalf of the offender. Newman (2004) maintains that a high commitment level requires a lot of planning on the criminal's behalf (i.e., phishing). A low level of commitment would then be contributed to an opportunistic moment, such as giving an officer a different identity when pulled over for a traffic stop (Newman, 2004). The first form of financial identity theft occurs when the motive behind stealing a person's identity is financial gain. This form is similar to financial-driven white-collar criminals seeking to not only gain financial advantage, but to avoid payments or loss of money. This financial gain comes from withdrawing money from the victim's account,

opening a new account, or opening a credit card. The second form is concealment of either one's true identity or of the crime in general (Newman, 2004). Concealing one's identity or the crime from their victims, these identity theft criminals commit this illegal behavior to, for example, get out of legal sanctions, get a job, or get into the country. This form of identity theft is similar with the white-collar criminal's motives of securing a personal advantage, securing some form of property, get out of legal sanctions or cover up previous legal sanctions, and to avoid loss of services. Obtaining a job under someone else's identity allows them to gain advantage into the employment world at a higher status than their own background would allow. Concealing identity criminals use the stolen identification to keep their criminal record clean, while the victim gets penalized or troubled with the problem of expunging his or her record.

Both of these forms of identity theft are synonymous with the Department of Justice's classification of white-collar criminals. Monetary gain and concealment are motives behind identity theft and white-collar criminals. The majority of identity theft methods are non-physical. Therefore, the criminal behavior of identity theft is not necessarily dependent upon the use of force. However, because deceit, concealment, or violations of trust are always present in the behaviors concerning identity theft, it can be classified as an illegal white-collar crime.

Identity Theft Literature

Current research on identity theft is primarily theoretical, for example most studies report on legal statutes and methods of identity theft (Lopucki, 2001; Hoar, 2001; Perl, 2003; Slosarik, 2002). Identity theft is an empirically understudied criminal behavior (Allison, et al., 2005). The majority of literature on identity theft victims

focuses on preventative and protection strategies. For instance, Milne (2003) has examined the self-protective behaviors of identity theft. Using a sample size of college students (N=61) and non-college students (N=59), Milne (2003) examined the behaviors from the Federal Trade Commission's (2001) publication "When Bad Things Happen to Your Name." Milne (2003) found that for college students specifically, the education on identity theft was working for behaviors such as shredding credit card receipts. Both students and non-students did utilize identity theft education by not carrying pin numbers and passwords in their wallets. However, Milne (2003) also found that non-students were less likely to provide their social security than students when cashing checks and that students more often than not created less obvious passwords in protecting their information. Milne (2003) examined these self-protective measures and concluded that both groups lacked the necessary education to ultimately conceal their identities.

Although few studies have looked at the impact on one's identity theft victimization, Sharp et al.'s (2004) research examined psychological symptoms and the overall health impact effects of identity theft on its victims. Additionally, they identified common coping methods of the identity theft victims. Sharp et al. (2004) used a victim impact questionnaire in recruiting thirty-seven victims of identity theft from six different police departments and victim assistance agencies from five different states. Sharp et al. (2004) found that the majority of victims experienced feelings of anxiety and anger resulting in sleep deprivation accompanied by nervousness directly after their victimization was discovered. Those victims whose cases had not yet been resolved obviously exhibited elevated levels of these feelings (Sharp et al., 2004). Helpful coping strategies were talking about the issue with friends and family, and of course taking some

sort of action to rectify their situation (Sharp et al., 2004). Sharp et al. (2004) advanced identity theft research by studying the potential impact it has on its victims.

The purpose of Allison et al.'s (2005) study was to examine the magnitude and characteristics of identity theft in comparison with today's media portrayal. Using a case study research methodology, Allison et al. (2005) used two data sets from a large municipal police department's centralized database for almost a three year period: one set including the number of calls for service and arrests for the crimes of identity theft (N=662), credit card fraud (N=575), check fraud (N=852), robbery (N=4,924), and motor vehicle theft (N=18,992), while the other set included the characteristics for both victims and offenders involved with identity theft resulting in an arrest. Allison et al. (2005) found that there was an increasing trend for identity theft cases when compared with other relative types of theft offenses. Further, they found in their data that most offenders were African-American females, unemployed, and working alone, while most victims tended to be white males.

As research on identity theft continues to expand, different groups of victims are being studied. The FTC (2006) reported that the age range of 18-29 year olds reported the most complaints of identity theft from January 1st to December 31st in the year 2005. This places college students in the number one category of people reporting identity theft complaints. Milne (2003) maintained that students are more likely to share their social security numbers and create passwords that are easily compromised, which could account for the high number of complaints reported by the FTC.

The purpose of Higgins et al.'s study (2005) was to gain a better understanding of college students overall perceptions of identity theft. Higgins et al. (2005) used self-

report surveys at a southeastern University in obtaining a sample size of 243 respondents. Higgins et al. (2005) measured students' perceptions and understandings of identity theft while also looking at the different kinds of fraud that accompany it (credit card fraud, utility fraud, mail fraud, telecommunications fraud, bank fraud, and fraudulent loans). Higgins et al. (2005) found that college students do not have a very clear understanding of identity theft. In fact, they reported that college students overestimated the percentages of identity theft in all categories except when identifying the typical identity theft victim's age.

The studies above have advanced identity theft research in many ways. Research has shown that the current identity theft trend is growing at a faster rate than all other cases involving fraud (Allison et al., 2005). Milne (2003) found that both college students and non-college students are lacking knowledge about protecting their identities from victimization. In other words, the education methods used in our society are not working to prevent identity theft. Sharp et al. (2004) showed that identity theft victims exhibited physical and/or psychological problems as a direct result of their victimization. Higgins et al. (2005) found that while college students do not have a clear understanding of the behavior of identity theft in general. While these empirical studies have advanced identity theft research, there are many areas that have yet to be studied. One specific area is whether or not people contribute to their own victimization of identity theft from specific routine behaviors -- or the lack thereof. For instance, people, in our society, may be taking risks in their daily routines that could contribute to their own identity theft victimization. To date, behaviors in an individual's life that ultimately contribute to their victimization have yet to be studied. The use of theory to help explain the behavior of

identity theft could be useful in shedding some light on these types of behaviors. By illustrating behaviors that lead to victimization of identity theft, perhaps better educational tools could become available to our society that could better protect our identities.

CHAPTER 2 ROUTINE ACTIVITY THEORY

Theory is a cornerstone in the field of criminology. Theory is used to gain an understanding of criminal activity by allowing criminologists to organize data in a certain way. By creating, studying, and testing theory, criminologists gain knowledge about different crimes in order to develop policies in hopes of reducing the behavior. The purpose of this chapter is to examine Cohen and Felson's (1979) routine activity approach. This theory was chosen because it provides a means of understanding an individual's daily routines and lives. Additionally, routine activities theory relates well to identity theft because from a victimization standpoint, identity theft can be contributed to how the victim manages their identification documents. The chapter proceeds in two sections: (1) a detailed summary of the major assumptions in the original work, (2) and a literature review on studies using this approach.

Routine Activities Theory

Cohen and Felson (1979) developed this approach in order to evaluate the value of opportunity in people's daily activities that contributed to their becoming victims of predatory crime. Routine activities theory (RAT), like all theories, was developed with the purpose of understanding criminal acts so that they could be controlled. In understanding these criminal acts, we can help to diminish members of our society being injured, as well as, understanding possibly the criminals themselves (Felson & Clarke, 1998). In understanding this approach to criminal activity, the elements must be clearly defined and understood. A motivated offender, a suitable target, and the absence of a

capable guardian are the three minimal elements for predatory crime to occur (Cohen and Felson, 1979). This infers that with the loss of any of these elements, the outcome of predatory crime would become less likely. Routine activities theory was born from this approach. Routine activities theory stresses the same three elements as those understood for predatory crime, but more contemporarily mentions a fourth element (that is understood although not specifically clarified as an element) of all of them converging at the same space and time. The first element of routine activities theory is a motivated offender, which refers to a person's willingness to commit the illegal activity (Felson & Clarke, 1998). According to Cohen and Felson (1979) most offenders are going to choose the victim that requires the least amount of effort. In other words, offenders choose the most obvious victims that are going to provide the results they seek, by the easiest and quickest means possible. Often times the offender seeks economic gain, self-defined fun, or the power of dominating someone or something (Felson & Clarke, 1998).

The next element of a successful commission of a predatory crime is target suitability. A suitable target is a person or object that is likely to be taken or attacked by an offender (Felson & Clarke, 1998). Offenders are going to choose the target that shows the least amount of challenge. An assumption that can be drawn from routine activities theory then is that the offender makes a rational choice to choose the target that is least restrictive to achieving his or her criminal goal. This might be the person who walks with their eyes to the ground unaware of their surroundings, or the person that makes the availability of crime seem that the chance of them succeeding is highly possible to a criminal adversary (Felson & Clarke, 1998). A person's routine activities contribute a great deal to their becoming potential targets. For instance, if a person goes to work early

in the morning and comes home late in the evening as part of their job, then they leave their house, possessions, or themselves at risk. Routine activities theory says that this type of person is more suitable to become victimized, than someone whose work hours vary each week, or work from home. In other words, a person's work hours if always changing, never create a pattern for a motivated offender to take advantage of specifically because when they will be home is unpredictable.

The third element required for predatory crime to occur is the absence of capable guardianship. In creating this approach, Felson and Clarke (1998) did not mean for capable guardianship to only include official figures. In fact, Felson and Clarke (1998) defined guardians as "anybody whose presence or proximity would discourage a crime from happening" (p. 4). Capable guardians are defined as neighbors, friends, relatives, bystanders, or even property owners that are present, their physique and job title are of no consequence (Felson & Clarke, 1998). A capable guardian represents what Blumstein, Cohen, Roth, and Visser (2001) call the "symbolic threat" that dissuades a potential offender due to the punishment imposed by being recognized by someone in the vicinity (p. 48). Capable guardianship in this sense could mean any person that by their presence alone could reduce and even deter an offender from obtaining his or her illegal goal.

An additional aspect that is always mentioned, yet not specifically seen as an element, is that all three of the other elements must converge at the same time and space. This element brings the other elements together in creating a specific time frame of when a predatory crime is more likely to occur. Hence, successful predatory crime more consistently occurs when a motivated offender, a suitable target, and the absence of capable guardianship all present themselves at the same time and space (Felson & Clarke,

1998). One element missing reduces the opportunity for a person to become a victim. For instance, Cohen and Felson (1979) maintained that suitable targets and lack of guardianship at the same time in a community could increase, yet the crime rates in that area would remain the same. That is, without the motivated offender the crime rates would not increase. Further, changes in routine activities could bring these elements together or alter the likelihood of them coming together at the same time in space, thus increasing the chance of predatory crime to occur (Cohen & Felson, 1979).

Cohen and Felson (1979) defined predatory crime to mean “illegal acts in which someone definitely and intentionally takes or damages the person or property of another” (p.589). Identity theft is an example of a predatory crime because the offender intentionally uses the identification of another in directly affecting that person’s credit or character. The routine activities approach applies to predatory crime, contending that most crime that is committed is ordinary and non-serious. However, as it was only intended to apply to predatory crimes, the literature has shown that the theory has been applied to all crimes.

Routine Activities theory can help researchers understand victimization. Felson and Clarke (1979) commonly refer to the victim as a target. In fact, Felson and Clarke (1998) maintained that there are four main elements that influence a target’s risk of being taken advantage of by a likely offender. The four elements are value, inertia, visibility, and access (Felson & Clarke, 1998). Value is defined as the target’s worth, monetary value, or the gain acquired by taking the given object, as assessed by the offender. The key to this element is that different offenders will be interested in different targets. For instance, on one hand, a new CD at the mall may be enticing to a shoplifter, but on the

other hand a long-term burglar would be more likely to target a home for jewelry. The underlying principle is that targets are of different value to different offenders. The second element of inertia is put simply by Felson and Clarke (1998) as the physical weight of the item or target. Just like targets have different value, each target is evaluated by appeal based on its accessibility to be removed from its owner. For instance, a burglar could look less conspicuous carrying jewelry in his pocket down the street as opposed to a thirty-two inch television. The physical weight of the target can prevent the opportunity for it to be stolen, as heavy objects are not as mobile as light objects.

Visibility of the target is another key element that becomes important when assessed by the offender. If the target is in plain sight and apparently easy to obtain, then it is at more risk of being taken than something hidden from view. Likely offenders are not always looking for their next target. A target hidden from plain sight does not draw the attention of a motivated offender, in which case the item is considerably less at risk. Accessibility is the final element that offenders might look for when assessing a target (Felson & Clarke, 1998). The availability or opportunity for the offender to achieve his goal without being caught makes the target more attractive. Remember, a likely offender is someone who wants to target an object or person but with the least amount of effort.

Routine activities theory, while primarily focused on victims, may also present evidence that the offender goes through a rational process before offending. Rational choice theory, like routine activities, is also an opportunity theory. Felson and Clarke (1998) maintain that the major assumption of rational choice theory “is that offending is a purposive behavior, designed to benefit the offender in some way” (p. 7). The motivated offender element used by routine activities theory, in many ways, assesses the situation

before offending. For instance, he or she assesses the target and the availability of a guardian that could identify him or her at a later period or stop the act. This assessment, as maintained by the rational choice perspective, “is a modified version of classical theory, in that it suggests that criminal behavior is predicated on the use of calculations, reasoning, and ‘rational’ considerations of choices” (Shoemaker, 2000, p. 16). Therefore, the assumption can be made that embedded in routine activities theory, is an assumption of the offender making a rational choice when choosing his or her target.

Review of Relevant Literature

This next section provides a review of the literature on routine activities theory. Studies using routine activities theory are presented in order to determine its empirical validity and versatility in explaining different crimes while showing its impact to the field of criminology.

Several studies have used the assumptions found under routine activities theory, in their attempts to further test its applicability in assessing the likelihood of people becoming victims of various types of predatory crime. Generally, most studies specifically examine victimization and property crime. This literature review presents property crime studies as the most relevant because identity is considered one’s personal property. However, others have examined routine activities theory from the aspect of peer groups affecting one’s daily routines by making them more likely to participate in criminal behaviors. For instance, Bernburg and Thorlindsson’s (2001) research focused on an extension of routine activities theory, by arguing that the effect of routine activities theory on deviant behavior is dependent on people’s differential social relations. Using a cross-sectional research design Bernburg and Thorlindsson (2001) analyzed a sample size

of 3,260 Icelandic students between ages fifteen and sixteen. They found that the effect of unstructured peer interaction on deviant behavior varies positively with deviant peer associations, but with definitions that are favorable to deviant behavior. So, one's peers on a routine basis, if deviant in nature, could influence that person to routinely committing deviant behaviors. One's peer group and their cultural preferences do create situations that provide rewards for deviant behavior. Bernburg and Thorlindsson (2001) showed that "social context conditions the degree to which a specific pattern of routine activities increases the likelihood that youths will use violence and commit crime" (p. 563). Other researchers studying peer groups instead of the individual have also shown that the effects of routine activities on individual offending decrease when their peer's behavior is controlled (Hawdon, 1996) and that criminal victimization risks are greater for college students who spend time with others who do drugs (Mustaine & Tewksbury, 1998a).

Research has shown that routine activities theory has also been beneficial when studying violent and property crimes. Hipp, Bauer, Curran, and Bollen (2004) advanced routine activities theory by comparing it with a temperature/aggression theory in order to explain correlations involving seasonal changes and crime. Temperature/aggression theory basically suggests that frustration is simply a biological response to uncomfortable conditions (Hipp et al., 2004). Using community data collected from 8, 460 police units from 1990 to 1992 by the U.C.R., Hipp et al. (2004) found that there were periods of time when the weather was favorable, and the rates of property crime would go up in most communities, which is consistent with routine activities theory's assumptions. Specifically, the favorable weather meant more people were away from home, thus

leaving themselves more at risk to property victimization. Support was also found involving routine activities theory when temperature variations in moderate climate areas increased the seasonal effect for both property and violent crime rates, and that areas with a larger number of entertainment establishments had increased levels of annual crime rates. These findings by no means imply that communities with less drinking or entertainment establishments are safer than a community with more drinking establishments. However, these conditions of more establishments and more pleasant weather are conducive to showing higher rates of crime, but this does not mean that individuals are possibly at more risk because of these specific conditions.

Research has shown that routine activities theory has also been useful for understanding domestic and intimate violence, specifically life-style factors that make men victims of sexual assault (Tewksbury & Mustaine, 2001), women victims of non-spousal multiple victimization (Rodgers & Roberts, 1995), and victimization of college women by stalkers (Fisher, Cullen, & Turner, 2002). The purpose of Tewksbury and Mustaine's (2001) research was to assess the routine activities and lifestyle factors that predict the sexual assault victimization in men. In their investigation of male sexual assault victimization, Tewksbury and Mustaine (2001) used self-administered surveys at 12 southern post-secondary institutions in 8 states, obtaining a sample size of 1,215 college/university students. Tewksbury and Mustaine (2001) found that lifestyles arising from different contexts involving one's routine activities were important in determining male sexual assault victimization. Tewksbury and Mustaine (2001) showed that men who frequently visited bars and frequently used drugs at parties were increasing their suitability as targets of sexual assault victimization which was consistent with routine

activities theory. In addition, research has shown that routine activities theory is useful for understanding physical and sexual assault victimization for women (Mustaine and Tewksbury, 1999).

Rodgers and Roberts (1995) examined the utility of routine activities theory in explaining women's multiple victimization. Based on three different types of victimization (personal victimizations of any kind, personal victimization by a person the woman knew, and personal victimization by a stranger), Rodgers and Roberts (1995) used data collected by the Statistics Canada's Violence Against Women Survey. This survey, conducted in Canada, measured violence by strangers, date/boyfriends, and acquaintances specifically analyzing those reports of unwanted sexual touching, sexual attack, and physical assault. The lifestyle indicators that were chosen for the study included age, income, main activity, and marital status. The final behavior measured by the survey was indication of social guardianship. This included techniques in which women protect themselves from being harmed by any violators, such as self defense classes or walking with pepper spray. Rodgers and Roberts (1995) showed that the majority of this study's findings were inconsistent with routine activities theory, but found that going to school or working did increase women's chances of victimization which is partial support for routine activities theory. The woman's job in particular though, could affect her chance of being victimized if it involved a high risk, like working at a bar or restaurant. From this particular study, routine activities theory did little to explain women's multiple victimization, but that routine activities can narrow the identifiable variables to which women are at most risk of victimization.

The purpose of Fisher, Cullen, and Turner's (2002) research was to show that lifestyle-routine activities, prior sexual victimization, and demographic characteristics affected the risk of victimization for stalking among college women. In 1997, a National Crime Victimization Survey was administered by telephone to a sample comprised of 4,446 female college students currently enrolled in either 2-year colleges or 4-year colleges around the country. Fisher et al. (2002) found that of the female students interviewed, there were 581 incidents of stalking reported to have happened in that academic year, which was a period of seven months. Fisher et al. (2002) also found that exposure to certain situations, lack of capable guardianship, and the fact that they had a motivated offender did increase the likelihood that they were at risk of being a stalking victim, which is consistent with routine activities theory. Researchers showed that certain situations were found to increase this risk of being stalked. For example, those women who often visited establishments where alcohol was served, those women who lived alone, those who had certain demographic characteristics, and those who dated or were in shorter than 1 year relationships experienced elevated levels of risk (Fisher et al., 2003). Consistent with the four assumptions of routine activity theory, the research provides evidence that this theory is credible.

In addition to the numerous studies advocating for routine activities theory in explaining physical victimization and stalking, many other researchers have focused on property victimization. The purpose of Mustaine and Tewksbury's (1998) research on larceny theft victimization is important for theoretical advancement because it emphasized the role of community-related factors in showing the risks for victimization of individuals. The focus of their study was on two different types of larceny theft: theft

of something valued at less than fifty dollars and theft of something valued at more than fifty dollars. Mustaine and Tewksbury (1998) used self-administered surveys collected in nine postsecondary institutions, from eight states to obtain a sample size of 1,513 college/university students. Mustaine and Tewksbury (1998) found that participation in illegal behaviors, the type of situation in which they were involved, unpleasant neighborhood conditions, the self-protective measures they take (i.e., owning a dog), and their demographic characteristics all strongly influenced college students minor theft (under fifty dollars) victimization. For major theft (over fifty dollars) victimization, Mustaine and Tewksbury (1998) found that the same behaviors also strongly influenced their risk of larceny theft victimization. More specifically, Mustaine and Tewksbury (1998) found that frequently playing on public basketball courts and tennis courts was a significant predictor of minor theft victimization, while studying out frequently was a significant predictor of major theft victimization. The significance of this study is that they found support for routine activity theory in measuring victimization of theft for specific lifestyle behaviors that are influential making demographic characteristics less informative predictors of theft victimization.

The purpose of Cohen and Cantor's (1980) study was to use routine activity theory in analyzing the 1975-76 National Crime Survey victimization data for the entire United States. Specifically, they analyzed the effects of age, race, income, major activity, and the number of person's in each household to explain larceny victimization. Cohen and Cantor (1980) found that family income of \$20,000 or more a year, persons sixteen through twenty-nine years of age, people who live alone, and persons who are unemployed, have a greater likelihood of being victimized by personal larceny. The

strongest determinant for larceny victimization was age, which could be contributed to the victim's social life. In other words, younger adults frequently spend more time outside of the home than older adults.

Not all studies examining routine activities and property crime victimization strongly supported all the parts of the theory. The purpose of Moriarty and William's (1996) study was to test the premises of both the routine activities and social disorganization theories as they contribute to the likelihood of property crime victimization on an individual level. Using a property crime victimization survey for low and high crime neighborhoods in one southern city, Moriarty and Williams (1996) found moderate support for routine activity theory. Routine activities theory explained more of the property crime victimization variance in the socially disorganized neighborhoods than the socially organized areas. Moriarty and William's (1996) maintained that the variables used for measuring suitable targets (i.e., race and property ownership) and guardianship (i.e., home at night and interaction with neighbors) were the best in terms of explaining the property crime variance. This study found support for using routine activity theory in explaining property crime victimization, however it was not a strong.

The purpose of Miethe, Stafford, and Long's (1987) study was to determine whether some individuals have higher victimization rates because of their lifestyles, their physical proximity to a high crime neighborhood, or some combination of factors. Further, Miethe et al. (1987) examined if routine activities was equally applicable to violent and property crime victimization. Using a sample size of 107,678 residents in thirteen U.S. cities, Miethe et al. (1987) found that routine activities and life-style variables have a relatively strong direct and mediational effect on an individual's risk of

property victimization, but not for violent victimization. Specifically, life-style variable of nighttime activity outside the home was associated with a greater exposure to risk of property crime. Miethe et al. (1987) maintained that routine activities theory is more valuable and applicable in providing explanations for property crimes as opposed to violent crime victimization risks.

Bennett (1991) found similar results when exploring the macro-structural approach of routine activities theory upon a sample of 52 nations from 1960-1984. While attempting to advance routine activity theory's efficacy in explaining the risk of crime, Bennett (1991) investigated the effect of structural change on crime rates while assuming for the intervening effects of routine activities. Bennett's (1991) cross-national sample showed that the macro-structural approach of routine activities theory applied more to property crime than personal crime. Specifically, Bennett (1991) found the element of guardianship from routine activities theory played no role in explaining personal crime, but did explain property crime.

While the review of the literature is not exhaustive, the studies presented show that routine activities theory is a versatile criminological theory and a commonly used approach for explaining criminal victimization. The studies above show that the theory's assumptions of a motivated offender, a suitable target, and lack of capable guardianship all converging at one time and space, are generally consistent with explaining various predatory crimes concerning victimization. Therefore, the literature suggests that routine activity theory has been beneficial to studying multiple crimes by studying the risks of people being victims of these crimes. The consistent limitation of these studies was a suggestion for future research to consider studying different forms of crimes, like

identity. Routine activities theory encompasses the assumptions that allow researchers to gain a better knowledge of different crimes, by not just studying the crimes themselves, but by looking in-depth at the victims of these crimes. However, the theory has not been applied to identity theft.

The Present Study

The present study uses routine activities theory to understand the risk of identity theft victimization of college students. The present study advances routine activities by applying its assumptions to an understudied emerging white-collar crime. In general, Cohen and Felson (1979) maintained that the actions taken in a person's daily lives actually contribute to them becoming victims of a predatory crime. Predatory crime was defined as illegal acts in which someone definitely and intentionally takes or damages the person or property of another (Cohen & Felson, 1979). Therefore, by Perl's and the Department of Justice's definition, the white-collar crime of identity theft clearly can be labeled a predatory crime (Perl, 2003; USDOJ, 1989). The present study contributes to the identity literature by providing a potential theoretical explanation to risks of victimization. The main purpose of this study is to examine the link between an individual's routine activities and the risk of them becoming a victim of identity theft. In addition, to investigating this link and assessing college student's level of risk, the study seeks to present the likelihood that college students will become a victim to identity theft in the future. In doing so, the study also seeks to present the college student's perception that they could become a victim of identity theft in the future. Therefore, this study has one main objective: to determine if a link exists between college student's routine activities and the risk of them becoming victims of identity theft.

From this objective, policies to reduce the instances of identity theft victimization may be developed. For instance, if a link exists between college student's daily routines and their own victimization of identity theft occurs, then preventative steps may be taken to remedy their routine behaviors.

CHAPTER 3 METHODS

This chapter presents the research methods used to achieve the objectives. Specifically, the sample, procedures, measures, and data analysis are presented.

Sample

A self-report survey questionnaire containing items intended to measure the major elements of routine activities theory and identity theft risk of victimization was administered to a non-random sample of college students during the spring 2006 semester.

Self-report surveys are widely used methods of obtaining research in the criminological and criminal justice fields. According to Maxfield & Babbie (2000), self-report surveys are the dominant method for studying the causation of crime. Self-report surveys are questionnaires, or a way of asking questions that allow the individual to report on their own behaviors, or report on the behavior of others. For instance, a general use of self-report surveys would be the questioning of incarcerated individuals about the crimes that they have committed. One advantage to this type of survey is that it captures the individual's response. By giving researchers a portrayal of crime through the offender's experiences, explanations of causation can lead to why the crime occurred in the first place. Cantor and Lynch (2000) contend that the advantage to this type of survey is that it allows the respondent to report on a crime that may or may not have been officially reported to the police department for example. By anonymously reporting one's own criminal behavior, light could be shed on the dark figure of crime that goes

unreported for various reasons. Another advantage to this type of survey is that there is not always a clearly identifiable victim to be interviewed, and if the police are not there to observe it how else are we going to know a crime occurred without asking a respondent to report if he or she has committed that behavior (Maxfield & Babbie, 2000).

Because the behavior is self-reported there are issues with using self-report surveys that cause validity and reliability problems. These limitations to using such a survey are that the person being surveyed may not be able to recall the information concerning an event in great detail or even that they fabricate the number of crimes committed completely (Maxfield & Babbie, 2000). Therefore, information obtained from such surveys could easily be skewed by the person reporting on the crime in question.

For the purpose of this study, self-report surveys are logical because the crime from which the population is asked to report is from a victimization perspective. In this capacity, self-report surveys are a great way of obtaining information because of the sensitivity of the topic and typically surveys make large samples feasible (Maxfield & Babbie, 2000).

For the present study, the researcher gave a self-report questionnaire to undergraduate students from a southeastern university in the United States. A convenience sample of students from general education courses in which every student at the university could enroll. Overall, five instructors were asked and agreed to allow the study in their courses. Undergraduate students enrolled in general educational requirement classes were sampled with the intent of obtaining a cross-section of the student population at this university. Using college students for self-report questionnaires, is advantageous because of their educational background and experience

in completing questionnaires. Because of their knowledge and contact with such questionnaires, the assumption can be made that this improved the overall completion rate of the questionnaire and reduced the measurement error. Further, the FTC (2004) maintains that eighteen to twenty-nine year olds are in the number one age range for reporting the highest number of identity theft complaints. Reasonably, college students are included within this age range. College students could present themselves as a suitable target due to their lack of knowledge on the subject of identity theft (Higgins et al., 2005).

The sample does have limitations. First, because of the sample's convenience and that it is a non-random sample, external validity is a concern. If the sample is not representative of the university's population, the results of the study may not be generalized to the actual representative population of the university. In this case, the generalizability of the sample would be restricted to a sub-population of the university. In other words, the sample would not fully represent the population of the university.

A second limitation of this sample is that the students by experience or financial immaturity may not fully be able to comprehend or relate to all criminal behaviors of identity theft. For instance, phone/utility fraud may not be fully understood by the students as being an identity theft behavior. If the students do not realize that another person using their personal information to obtain utilities in their household is an identity theft problem, their answers to the questionnaire could produce some error. Additionally, Higgins et al.'s (2005) study showed that college students are not very knowledgeable when it comes to identity theft crimes. Their lack of knowledge concerning identity theft could produce some problems in the results of this study.

A third limitation of this sample is that even though college age students make up the highest group for filing complaints of identity theft according to the FTC (2004), the likelihood of them having first-hand victimization experience is low. Variations in their responses could be directly correlated to how their friends and family members perceive identity theft victimization (i.e., indirect victimization). If the college students in the study have not been affected by identity theft on a personal level or have another individual's perception of the problem, then their answers may reflect the other person's perceptions of the crime. This could also cause problems in the results of the study due to the fact that the answers they provide to certain items may not represent their own thoughts and experiences.

Despite these limitations, the sample still represents the number one age group complaining about identity theft according to the FTC (2006). The use of college students is a necessary first step towards understanding and preventing identity theft and creating policies to limit identity theft growth in the future. This first step is one that could shed light on a topic that to date involves little research. The study of college students has already been illustrated as being instrumental in learning more about identity theft (Milne, 2003; Higgins et al., 2005). By being easily accessible participants, college students provide the necessary start that could point needed future research in several directions.

Procedure

After approval was granted from the Human Subject's Protection office at the southeastern university, the questionnaire was administered to groups of students in classes that the instructors agreed to allow the study. The College of Arts and Sciences in

this southeastern university was chosen for this study because the general student population is required to be enrolled in a number of these core courses. Five faculty members from two departments (sociology and Justice Administration) agreed to allow the study in their classes. A total of nine classes participated: five from justice administration and four from the sociology department. Inside the classroom, the researcher asked students present the day of survey administration to volunteer to take part in the study during the class period.

Before the students took part in the study, the researcher read aloud a cover letter informing the students of their rights guaranteed by the Human Subjects Protection Office. The student's completion of the survey meant informed consent and an understanding of their rights to participate in the study. Following this, emphasis was placed on the fact that their answers or responses were to be anonymous and held in the strictest of confidence. To ensure anonymity, the researcher asked the students to not put any identifying marks (e.g., social security number, initials, or course number) on the questionnaire. To protect the surveys, they were stored in a locked filing cabinet at the Department of Justice Administration. Also, the students were made aware that they may end their participation in the study by simply stopping at any time during their time completing the questionnaire. Their participation in this study was completely voluntary and no rewards or benefits were guaranteed for their completion of the survey. Further, the students who wished not to participate or had already participated in the survey were asked to sit quietly while the rest of the students completed the survey. From these procedures, of the 319 approached students, a total of 308 students agreed to participate

in the study. In other words, of all the students asked to participate, ninety-seven percent of the students approached agreed to take part in the survey.

Measures

This section presents the measures that make up the three-part questionnaire for this study. In developing the questionnaire, the items came from 3 primary sources: Milne (2003), FTC (2004), and Higgins et al. (2005). Milne's (2003) self-protective behavioral tool along with the FTC's (2003) report, provided the framework for identity theft victimization items needed to test the four elements of Cohen and Felson's (1979) routine activities theory (motivated offender, suitable target, absence of capable guardianship, and these coming together at one space and time). The scenarios in the present study's questionnaire were derived based on the FTC's (2005) report of the top two most complained about identity theft methods in the surrounding states of the southeastern university being studied. The measures are presented in four sections: independent measures, dependent measures, victimization measures, and demographics.

Independent Measures

The independent measures captured two parts of routine activities theory. The first section of the questionnaire measured the routine activities theory elements of capable guardianship and target suitability. Cohen and Felson (1979) defined capable guardianship as basically anyone in close proximity that could by being present deter someone from obtaining an illegal goal. By this general definition a college student could capably guard his or her identity by taking certain precautions. The study measured capable guardianship by asking the students about how they protected their identities. Specifically, three yes or no items focused on college student's behavior in

guarding their personal information in various aspects of their personal information: (1) have they ordered a credit report in the last year, (2) do they check each item on their billing statement, and (3) do they shred or tear up any credit card information they receive before throwing it away (Milne, 2003; FTC, 2003; Higgins et al., 2005)?

The first section of the questionnaire also captured target suitability by asking questions about college student's habits concerning their personal information. Target suitability is by Cohen and Felson's (1979) definition a person or object that is likely to be taken by or attacked by an offender. Suitable targets are those targets that present the least amount of risk for an offender. Three yes or no items measured how students could possibly make themselves a suitable target: (1) I carry more credit cards than I need in my wallet, (2) I sometimes toss my credit card receipts in a public trash container without shredding them into tiny pieces, and (3) I keep a copy of my pin number and passwords in my wallet or purse in case I forget them.

Dependent Measures

The second part of the questionnaire used responses to scenarios focusing on two different forms of identity theft. These are the top two offenses that guided the study's scenario development. The two scenarios focused on credit card fraud and ATM fraud. These specific types of identity theft were chosen based on the FTC's (2003) National and State Trends in Fraud and Identity Theft findings. The FTC (2003) found that in the states of Kentucky, Ohio, and Indiana, the top three types of identity theft victimization complained about, included credit card fraud, bank fraud, and phone or utilities fraud. Scenarios focusing on two out of the three types of identity theft were created that represented potentially common ways that identity theft could occur for college students.

By using scenarios, the convergence of time and space and motivated offender were held constant for all the participants.

Scenarios were used to capture the student's perceived risk of the behavior in the scenario actually happening to them. Klepper and Nagin (1989) found that by using scenarios to study income tax, that respondents would weigh the benefits and costs of their actions in filing their taxes, and if criminal prosecution was perceived they would be deterred from noncompliance. This finding is important because the scenarios forced the respondents to assess the risk of the situation fully before deciding on their actions. Pogarsky (2004) pointed out that "the projection of criminal behavior itself is designed to reflect how individuals intend to behave under certain circumstances" (p. 114). Further, Pogarsky (2004) maintains that prospective measurement (i.e., what they intend to do) techniques (i.e., scenarios and self-reporting) offer a reliable method for testing theoretical propositions because they capture the respondent's actual proneness to nonconformity. Some researchers have found a strong connection between intentions and actual behavior (Sutton, 1998; Godin & Kok, 1996).

Each scenario was followed by two questions measuring the student's perception of the scenario capturing their actions had they been faced with the same conditions: (1) what is the likelihood that this will happen to you in the next 30 days, and (2) what is the likelihood that this will happen to you while in college. Each scenario then had two other specific items that measured their responses to the criminal behavior in question as if it had happened to them. The student's were asked to mark the percentage (from 0 being zero percent or no chance to 10 being one hundred percent chance) of the likelihood that best fit what they would do if they were the person in the scenario.

Victimization¹

Four items in section one of the questionnaire were used to measure several different areas of identity theft victimization. Prior victimization may play a role in routine activities theory because if a respondent had experienced identity theft victimization in the past, their protective behaviors may have changed. These items like required yes or no responses. The design of the questions measured whether or not the student had already experienced or been a victim of some form of identity theft in the past: (1) has anyone ever misused your credit card to place charges on your account without your permission, (2) has anyone misused your credit card number to place charges on your account without your permission, (3) Has anyone ever misused any of your existing bank accounts without your permission to run up charges or to take money from your accounts (this included fraud concerning checking accounts, savings accounts, loans, and electronic fund transfers), and (4) Has anyone ever misused any of your existing phone or utility accounts without your permission to run up charges or to take money from your utility accounts.

Demographics

Demographic measures were taken from the first four questions on the self-report questionnaire. Students were asked to indicate by placing a check mark in the appropriate blank: (1) what is your sex (0 = female and 1 = male), (2) what is your ethnicity (0 = non-white and 1 = white), (3) what is your age in years, and (4) what is your class rank (1 = Freshman, 2 = Sophomore, 3 = Junior, and 4 = Senior). These

¹The victimization scale was used to examine the direct effect of identity theft on the likelihood of becoming a victim. The results of this analysis did indicate a link. Therefore, the scale was kept in the thesis, but is not presented in the results.

measures captured the demographics of the sample, which were then compared to the demographic statistics of the population at the southeastern university.

Data Analysis

Table 1 describes the analytical plan for testing the objectives of this study. Phase I presents the procedure for how the sample will be analyzed. Phase II presents the procedure for how the full sample and split sample estimations were analyzed.

Table 1: Analytical Plan

Nature of Analysis	Hypothesis or Proposition Tested	Procedure
Phase I		
Demographics	What does the sample look like?	Examine the descriptive statistics of the sample
Reliability of Measures	Internal consistency of items for scales. The proportion of common variance, non-error variance.	Cronbach's alpha or correlations
Descriptive Statistics	Understand the central tendency and dispersion of the measures.	Descriptive Statistics, means, and standard deviations.
Phase II		
Full Sample Estimation	The extent the measures are significant. To determine if a link exists between college student's routine activities and the risk of them becoming victims of identity theft.	Multiple Regression; collinearity diagnostics

The procedure in Table 1 of the analytical plan uses reliability, correlation, and multiple regression to determine how the variables and sample will be analyzed in the study's findings. An understanding of these procedures is necessary before the results are presented. Reliability refers to the extent that the measure of the behavior is consistent or a constant indicator of the level of behavior in society over time (Vito & Blankenship, 2002). Cronbach's alpha is a measure of reliability that measures the internal consistency of the two items that captures reliability from cross-sectional research. Cronbach's alpha

measures how well a set of items inter-correlate. If the inter-item correlations are high, then there is evidence that the items are measuring the same underlying construct meaning they have good reliability. However, this is best used when you have three or more items. Correlations were used for the reliability of variables measuring the same thing. Devellis (1991) found that correlations can be used for only two items as a measure of internal consistency. Correlation is a measure of association between two variables (Vito & Blankenship, 2002). If the strength of the two items is high, then the assumption can be made that they are measuring the same thing. The bivariate Pearson correlation coefficient (r), assumes that the two variables are measured on at least interval scales. This determines the extent to which values of the two variables are "proportional" to each other (Levin & Fox, 2006).

The purpose of multiple regression is to learn more about the relation between several independent or predictor measures and a dependent measure. For example, multiple regression allows social scientists to analyze the affects of several independent measures (e.g., more credit cards in wallet, throwing away of credit card receipts without shredding them, and carrying one's social security card) in explaining the dependent measure (becoming a target for identity theft). When using multiple regression, several statistics are important. Correlation is usually reported in terms of its square (r^2), interpreted as percent of variance explained. For instance, the r^2 is represented in a decimal (.50) that is converted into the independent measure's percentage (50%) that explains the variance in the dependent measure. The independent measures test the null hypothesis that the regression coefficient is zero. The f-statistic or f-test is used to test the significance of R or R^2 , which is the same as testing the significance of the regression

model as a whole. If $(F) < .05$, then the model is considered significantly better than would be expected by chance and we reject the null hypothesis of no linear relationship of the dependent measures to the independents. The slope “b” is the average amount the dependent measure increases or decreases when the independent measure increases or decreases one unit and other independents are held constant (Levin & Fox, 2006). The beta weights are the standard regression (B) coefficients. Beta is the average amount the dependent increases or decreases when the independent increases or decreases one standard deviation and other independent variables are held constant. The t-statistic or t-tests are used to assess the significance of individual b (slope) coefficients.

Tolerance and VIF (Variance Inflation Factor) are the indicators of collinearity. Collinearity means that the independent variables are measuring the same thing (Levin & Fox, 2006). Multicollinearity means that you have two variables that are highly correlated measuring the same thing. Tolerance is the regression of the independent variable on all the other independent variables. VIF measures the inflation of the variance of the measure’s regression coefficient relative to a regression where all the explanatory measures are independent (Landau & Everitt, 2004). If your VIF is 10 or above, multicollinearity exists and if tolerance is .2 or below you also have multicollinearity (Field, 2000). Dummy measures are a way of adding the values of a nominal or ordinal measure to a regression equation (Levin & Fox, 2006). They are interpreted to prevent multicollinearity by removing one category. In other words, dummy measures will reflect changes in the dependent with respect to the reference group, which is the left-out group.

CHAPTER 4 ANALYSIS AND RESULTS

Representativeness of the Sample

A total of 308 students participated in this study. Table 2 presents the sample comparison of the southeastern university.

Table 2

Comparison of the Sample and Population at the Southeastern University

Demographics	Southeastern University Student Population (N= 21, 725) Percent	Study Sample (N=308) Percent
<u>Age</u> Average Age of Student Body	N.A.	21.17
<u>Gender</u> Male	46.8 (N=10,164)	40.6 (N=125)
Female	53.2 (N=11,561)	59.4 (N=183)
<u>Race</u> White	78.2 (N=17,006)	79.9 (N=246)
Non-White	21.8 (N=4,719)	20.1 (N=62)
<u>Class</u> Freshman	29.8 (N=4,055)	24.7 (N=76)
Sophomore	21.8 (N=2,970)	25.6 (N=79)
Junior	21.8 (N=2,973)	28.6 (N=88)
Senior	26.5 (N=3,612)	21.1 (N=65)

Table 2 presents the comparison between the sample and the population.² The table demonstrates that there are differences between the sample and population in gender, race, and class. The average age of the respondents for the population was not calculated by the southeastern university which then cannot be compared to the average age representative of the sample. Although there are more females than males in the sample, the sample had a higher female to male ratio than the population. The percentage of respondents in the sample that were white and non-white were within one percent point of the population. The sample is unevenly distributed between classes when compared with the population. The sample is not representative of the university's population based on the above demographic variables in which they were compared. Therefore, the results of the study may not be generalized to the population of students at the university. While not generalizeable to the population, this is a first step in understanding the link between routine activities and identity theft. The literature has shown the generality of routine activity theory and identity theft. While the sample is not completely representative, this first step is important to the literature on the theory and identity theft.

Table 3 presents the bivariate correlations for the dependent variables in the credit card fraud scenario. Bivariate Pearson correlations measure the internal consistency of the two items for each dependent measure.

² All Southeastern university demographic numbers were taken from their website in the reference section. Their current demographical facts were from 2004. (www.louisville.edu)

Table 3

Bivariate Correlations for Dependent Variables “Credit Card Fraud”

Measure	What is the likelihood of you disposing credit card proposals within the next 30 days.	What is the likelihood that you will dispose of credit card proposals while in college.
What is the likelihood of you disposing credit card proposals within the next 30 days.	1.00	
What is the likelihood that you will dispose of credit card proposals while in college.	.833*	1.00

*P= .05

The correlations in table 3 shows that there is high internal consistency or association ($r = .833$) for the two dependent variables. The two items that make up the dependent measures are: (1) what is the likelihood of you disposing credit card proposals within the next 30 days and (2) what is the likelihood that you will dispose of credit card proposals while in college measure the same underlying construct. In other words, the measure of how a respondent disposes of their credit card information in the next thirty days has a strong correlation and can be combined with the measure of how they will dispose of

credit card information while in college because they are strongly associated. In other words, the high correlation suggests that the two items measure the same thing.

Table 4 shows the bivariate correlations for the dependent variables in the ATM fraud scenario.

Table 4

Bivariate Correlations For Dependent Variables “ATM Fraud”

Measure	What is the likelihood of ATM Fraud happening to you in the next 30 days.	What is the likelihood of ATM Fraud happening to you in college.
What is the likelihood of ATM Fraud happening to you in the next 30 days.	1.00	
What is the likelihood of ATM Fraud happening to you in college.	.894*	1.00

*P= .05

Again, the bivariate Pearson correlation ($r = .894$) is showing a high internal consistency for the two dependent variables. Therefore, the likelihood of ATM fraud happening to you in the next thirty days is internally consistent or associated with the likelihood of ATM fraud happening to you in college.

Table five shows the descriptive statistics.

Table 5

Measures	<u>“Descriptive Statistics”</u>		Minimum	Maximum
	Mean	Standard Deviation		
I keep a copy of my pin number and passwords in my wallet or purse in case I forget them.	.0651	.2472	0	1
I always check each item in my billing statements for mistakes and report these immediately.	.6071	.4892	0	1
I have ordered a copy of my credit report in the last year.	.3127	.4644	0	1
I carry more credit cards than I need in my wallet.	.1759	.3813	0	1
I sometimes toss my credit card receipts in a public trash container without shredding them into tiny pieces.	.3713	.4840	0	1
I always shred or tear up the credit card offers I receive in the mail before throwing them in the trash.	.7107	.4545	0	1
Scenario 1: Credit Card Fraud	7.339	6.155	0	20
Scenario 2: ATM Fraud	6.712	5.410	0	20

Table 5 showed that the average for scenario one was 7.3. This indicates that the students had a low likelihood of identity theft victimization. Table five showed that the average for scenario two was 6.7. This indicates that the students had a low likelihood of identity theft victimization. Sixty-one percent (N=187) of respondents indicated that they checked each item in their billing statements for mistakes and reported these immediately. Thirty-seven percent (N=114) of students indicated that they sometimes toss their credit card receipts in a public trash container without shredding them into tiny pieces. Seventy-one percent (N=218) of students indicated that they always shred or tear up the credit card offer they received in the mail before throwing them in the trash. Eighteen percent (N=54) of students indicated that they carried more credit cards in their wallet than they needed. Thirty-one percent (N=96) of students indicated that they had ordered a copy of their credit report in the last year. Seven percent (N=20) of students indicated that they kept a copy of their pin numbers and passwords in their wallet or purse in case they forgot them.

Table 6 shows the regression analysis for scenario one, is credit card fraud.

Table 6

Regression Analysis for Scenario 1 Credit Card Fraud

	B	Std. Error	Beta	Confidence Interval	Tolerance	VIF
Measures						
(Constant)	9.673	2.233		5.278, 14.068		
Sex/ Gender	.139	.640	.011	-1.121, 1.400	.929	1.076
Ethnicity	.177	.789	.011	-1.375, 1.730	.941	1.963
Age (in years)	.027	.111	.015	-.191, .245	.661	1.513
Class Rank	.117	.340	.020	-.553, .787	.687	1.456
I carry more credit cards than I need in my wallet.	-.075	.848	-.005	-1.744, 1.595	.897	1.115
I sometimes toss my credit card receipts in a public trash container without shredding them.	2.783*	.675	.225	1.554, 4.202	.865	1.156
I have ordered a copy of my credit report in the last year.	-.099	.710	-.007	-1.496, 1.298	.852	1.174
I always shred or tear up the credit card offers I receive in the mail before throwing them in the trash.	-5.078*	.726	-.420	-7.137, -4.280	.852	1.174
I keep a copy of my pin number and passwords in my wallet or purse in case I forget them.	.521	1.264	.021	-1.967, 3.009	.931	1.074
I always check each item in my billing statements for mistakes and report these immediately	-.580	.663	-.046	-1.885, .725	.877	1.141

*P= .05 F= 12.157 p= .000 R²= .295 N= 302

The regression analysis for scenario 1, Credit Card Fraud, suggests that two measures were significant. "I sometimes toss my credit card receipts in a public trash container without shredding them" ($b = 2.783$, $B = .225$, $t = .865$, $R^2 = .295$, $F = 12.157$) had a positive link with the behavior of identity theft occurring. When individuals toss their credit card receipts in a public trash container without shredding them, the likelihood of identity theft victimization increases by 2.783. In addition, when this occurs, the standard deviation increase is .225. When individuals always shred or tear up the credit card offers they receive in the mail before throwing them in the trash ($b = -5.078$, $B = -.420$, $t = .852$) they decrease their likelihood of identity theft occurring. In addition, when this occurs, the standard deviation decrease is -.420 in the likelihood of identity theft.

This model explained .295 or 29.5 percent of the variance in the likelihood of being a victim of credit card fraud. Overall, this explanation of variance is statistically significant (i.e., the explanation of variance is statistically relevant). These results show support for routine activity theory's assumption of all of the elements coming together at one time and space and the component of the college students putting themselves at risk for a motivated offender.

Table 7 shows the regression analysis for scenario two, ATM fraud.

Table 7

Regression Analysis for Scenario 2 ATM Fraud

	B	Std. Error	Beta	Confidence Interval	Tolerance	VIF
(Constant)	11.779	2.030		7.784, 15.774		
Sex/ Gender	-.731	.582	-.069	-1.876, .415	.929	1.076
Ethnicity	-1.375	.717	-.132	-3.146, -.325	.941	1.063
Age (in years)	-.196	.101	-.127	-.394, .002	.661	1.513
Class Rank	.112	.309	.023	-.497, .721	.687	1.456
I keep a copy of my pin number and passwords in my wallet or purse in case I forget them.	.240	1.149	.011	-2.021, 2.502	.931	1.074
I always check each item in my billing statements for mistakes and report these immediately.	-1.351*	.061	-.127	-2.537, -.165	.877	1.141
I have ordered a copy of my credit report in the last year.	.571	.645	.051	-.698, 1.841	.852	1.174
I carry more credit cards than I need in my wallet.	1.414	.771	.103	-.104, 2.931	.897	1.115
I sometimes toss my credit card receipts in a public trash container without shredding them into tiny pieces.	1.802*	.614	.167	.594, 3.009	.865	1.156
I always shred or tear up the credit card offers I receive in the mail before throwing them in the trash.	-1.957*	.660	-.171	-3.256, -.659	.852	1.174

*P= .05 F= .426 p=.000 R²= .181 N= 302

The regression analysis for scenario 2, ATM fraud, suggested that three variables were significant. When individuals always check each item in my billing statements for mistakes and report these immediately ($b = -1.351$, $B = -.127$, $t = .877$, $R^2 = .181$, $F = .426$) this reduced their likelihood of identity theft occurring by -1.351 . In addition, when this occurred, there was a $-.127$ relative impact. When individuals sometimes toss their credit card receipts in a public trash container without shredding them into tiny pieces ($b = 1.802$, $B = .167$, $t = .865$) this increased the likelihood of identity theft occurring by 1.802 . In addition, when this occurred there was $.167$ impact. Finally, when individuals always shred or tear up the credit card offers they receive in the mail before throwing them in the trash ($b = -1.957$, $B = -.171$, $t = .852$) this reduced the likelihood of identity theft occurring by -1.957 . In addition, when this occurred, there was $-.171$ relative impact on identity theft occurring. These results also provided support for routine activity theory addressing the objective of the present study.

This model explained $.18$ or 18 percent of the variance in the likelihood of being a victim of ATM fraud. Overall, this explanation of variance is statistically significant (i.e., the explanation of variance is statistically relevant). Finally, these results show support for routine activity theory's assumption of all of the elements coming together at one time and space and the component of the college students putting themselves at risk for a motivated offender.

The regression analysis for both scenarios showed that for the variable of "I sometimes toss my credit card receipts in a public trash container without shredding them into tiny pieces" there was a positive link or increase in the likelihood of the behavior of identity theft occurring. The regression analysis for both scenarios did not provide

evidence of multicollinearity through the use of VIFs and tolerance. Typically, researchers have viewed VIFs above ten and tolerance coefficients below .20 as problematic (Field, 2000). In analysis of this study, none of the VIFs were above 1.9 and none of the tolerance measures approached or were below .20.

CHAPTER 5 DISCUSSION

The main purpose of this study was to examine the link between an individual's routine activities and the risk of them becoming victims of identity theft. In addition, to investigating this link and assessing college student's level of risk, the study seeks to present the likelihood that college students will fall victim, as well as, the perception that they could fall victim of identity theft in the future.

Cohen and Felson's (1979) routine activity theory was intended to evaluate the value of opportunity in people's daily activities that contributed to their becoming victims of predatory crime. A likely offender, a suitable target, and the absence of a capable guardian, all occurring at the same time and space are the main elements that routine activities theory advocates are necessary when a crime takes place. The loss of any of these elements represents a decrease in the likelihood of the criminal behavior taking place. Routine activities theory has been shown to be very beneficial in studying many different crimes. Over the years, several studies have found support for routine activities theory. Several researchers even maintained that routine activities theory is more valuable and applicable in providing explanations for property crimes as opposed to violent crime victimization risks (Bennett, 1991; Miethe et al., 1987; Mustaine & Tewksbury, 1998). Researchers have shown that identity theft falls under the heading of a white-collar crime. Dashido (2005) contends that like a traditional thief, the identity thief steals property from the victim; hence identity is a person's most personal property. So, routine activity theory applies to the criminal behavior of identity theft.

The study's results have indicated that several behaviors of an individual's routine in college can increase or decrease the likelihood of identity theft victimization. The regression results showed significance for several different measures. Specifically, for scenarios 1 and 2, the measure of "I always shred or tear up the credit card offers I receive in the mail before throwing them in the trash" suggested a decrease in the likelihood of identity theft behavior occurring. By always shredding credit card offers in the mail, the likelihood of identity theft victimization through credit card fraud was reduced for this sample of college students. For the second scenario, ATM fraud, the measure of "I always check each item in my billing statements for mistakes and report these immediately" showed a decrease in the likelihood of the behavior of identity theft occurring. This behavior of always checking their billing statements and reporting mistakes immediately showed for this sample that the respondents were guarding their personal information, while reducing their likelihood of becoming suitable targets.

Both scenarios also showed that the measure of "I sometimes toss my credit card receipts in a public trash container without shredding them" led to an increase in the likelihood of the respondents becoming victims of identity theft. This measure again also captured two elements of routine activities theory. In other words, by not shredding one's credit card receipts before disposing them in the trash, an individual's target suitability increases and a lack of capable guardianship exists, thus contributing to an individual's overall likelihood of identity theft victimization. Theoretically, these findings are consistent with other studies using routine activities theory (Bennett, 1991; Miethe et al., 1987; Moriarty & Williams, 1996; Mustaine & Tewksbury, 1998). This

suggests that college students can impact the likelihood of their own identity theft victimization.

Policy Implications

The findings of the current study provide several policy implications that universities should consider. The results from this study suggested that students were more likely to be victimized if they did not shred credit card receipts before throwing them away in public trash receptacles. However, the findings may indicate that college students are not aware of or educated enough to realize how easily their identity can be stolen similar to other studies (Higgins et al., 2005). In an effort to combat college student identity theft victimization, universities should consider creating an awareness educating session during college orientation. The idea of an orientation-type course in identity theft prevention is similar to the suggestion of Higgins et al. (2005). A way of educating students as to the repercussions and other preventative techniques of identity theft before they step foot on campus as a student, could be an excellent tool in identity theft victimization prevention. The findings of this study maintain that a course should include topics, such as, proper management of credit card receipts and other identifying documents. Additionally, students could also be made aware of other preventative techniques, such as checking each item in their billing statement, for this was found to be an indicator for reducing the likelihood of identity theft victimization in this study. An orientation and educational class should also include the types of identity theft that are more common given the university's geographical location. For instance, in the state of the southeastern university in this study, credit card fraud, ATM fraud, and utility fraud

are most problematic (FTC, 2004). Courses should focus on the problematic areas given their location.

An orientation class on identity theft prevention techniques is a start but other ideas should be considered when developing policy. Before people come to college, their biggest behavioral influences are parents and peers. Students could be made aware of the problem from the beginning of their academic career. Being educated before they are faced with the college-life routines could help them prevent identity theft from the very start. The orientation course could be specialized for both parents and children at orientation to show both individuals how to prevent identity theft. Because identity theft influences all ages, an orientation for both groups could provide the educational tools needed to reduce their overall likelihood of becoming identity theft victims. Students and their parents could then receive the preventative techniques necessary, the forms by which their identities could be stolen, and other factual information about the growth and prevalence of identity theft in the future. The information presented in the course should not be an educational seminar for students wishing to learn how to become identity theft-criminals. Instead, the focus should be on prevention and only the information necessary to help the students successfully reduce their likelihood of victimization. Detailed descriptions of how to identities are stolen should not be covered in such a class.

Orientation seems the logical choice, however, refresher preventative technique courses and information could be located somewhere on the frequently used part of campus for those students who are upper classman. To be successful, a central location and free food would influence the turnout of the students. A central location is ideal because the typical college student is not going to be proactive in searching for any

educational courses. Identity theft prevention classes or seminars could be held throughout the semester and advertised in a variety of places. For example, there are multiple message boards around college campuses and mass e-mails sent out by the administration departments. These message boards, college newspapers, and e-mails could continually update students on identity theft prevention strategies and other factual information that could better educate the student population as to the danger that identity theft imposes. There is a danger of these message boards being overlooked, but if informational booths were set up at student activity areas, the message may be successfully conveyed. These refresher courses could be beneficial in helping students maintain their knowledge of identity theft and help them to prevent identity theft in the future as the criminal behavior changes.

Another avenue of policy could relate to university or campus police departments. University or campus police departments provide a number of services on college campuses. When someone is robbed or burglarized the campus police usually send out some kind of notice. Campus police could be instrumental in taking part in these identity theft preventative courses, which would not only be beneficial to their department but would help the students. For instance, preventative strategies could be discussed by the campus police officers who are now responsible for taking reports on individuals who have their identities stolen. The FACT Act requires identity theft complaints be filed by police departments. The campus police departments, as well as, local police departments benefit from the experience of taking reports on identity theft. The more police file these complaints, the more knowledge and insight they gain about the identity theft victimization taking place in, on, and around the campus. The students will directly

benefit from the police departments coming to their campus and suggesting preventative techniques. Students can utilize the knowledge being presented to them by the police because of the police's experience in dealing with identity theft complaints. This direct passing of information from professional to student could lead to students implementing preventative techniques to reduce their own victimization.

The U.S. Department of Justice (2004) made several suggestions for identity theft prevention strategies in their "Problem-Oriented Guide for Police Problem-Specific Guides Series." The U.S. Department of Justice (2004) maintains that there are certain preventative strategies that can be taken by an individual concerning identity theft. Along with the FTC's (2004) recommendations, the U.S.D.O.J. (2004) mentions simple methods of preventing identity theft. For example, they both mention not leaving credit card statements in trashcans without shredding them similar to the suggestions of this study. Based on these recommendations and the study's findings there is a link advocating for Felson and Cohen's routine activity theory. Capably guarding their credit card information by shredding credit card statements and receipts could reduce the likelihood of becoming an identity theft victim. By being educated to shred such materials, individuals could lessen their suitability as an easy target thus, also reducing their likelihood of victimization.

Additionally, the FTC (2004) recommended guarding mail and trash from theft, not carrying social security cards, ordering multiple copies of credit report, not giving out personal information over the phone, mail, or internet, and paying attention to billing cycles. This study did test for ordering a copy of credit reports, revealing personal identifying information, and checking billing statements regularly and reporting mistakes

immediately. Checking billing statements and reporting mistakes was a guardianship measure that did show a decrease in the likelihood of identity theft victimization. The other preventative techniques were measured, but did not show significance in this study.

Limitations

While the present study has found support for routine activity theory in explaining identity theft victimization, the study has limits. In particular, the study's design is cross-sectional meaning it just examined a small section of an entire population at one specific time. Cross-sectional studies represent only suggestive evidence of a causal connection between the variables. A longitudinal study could be best suited for this type of research because it could capture how the respondent's behaviors change over time when protecting their identifying information.

A second limitation to this study is that the sample was taken from one university. The study's sample was taken from a southeastern university, in a state that according to the FTC (2004) had three major identity theft complaints (credit card fraud, ATM fraud, and utility fraud). States surrounding the university suffered from the same top three identity theft complaints. However, universities in different regions are affected more by other types of identity theft. The study can therefore not be generalized to college universities in other regions where the prevalent methods of identity theft are different.

A third limitation to this study is that it only surveyed college students. While college students are in the age range with the highest number of identity theft complaints (FTC, 2004), all aged people can become victims of identity theft. Because all age ranges can be affected by identity theft, the study's results appear to be generalizeable to only one group of people affected by identity theft. A fourth limitation to this study is

that only one theory is used to try and explain this behavior. Identity theft can be explained by more than one criminological theory. For instance, other theory's such as social learning theory could be beneficial in analyzing identity theft from another perspective. One final limitation of this study is that only two parts of routine activity theory were examined and showed significance. Guardianship and target suitability are shown to be important, however, a motivated offender and all of the elements occurring at one time and space if shown to be more significant, could provide a better theoretical explanation of the behavior. These limitations provide avenues for future research.

Conclusions

Despite these limitations, routine activities theory is important to the study of identity theft because it brings to light knowledge of what daily factors actually constitute a person's victimization and what could reduce identity theft. While some things (a longitudinal study, more than one university, other theories, and other age groups) may be helpful in better understanding identity theft, this study showed that there are behaviors in college student's daily lives that affect their likelihood of falling victim to identity theft. The results specifically showed that how college students guard their credit card information (i.e., receipts) directly affects their likelihood of identity theft victimization.

REFERENCES

- Allison, S., Schuck, A., & Lersch, K. (2005). Exploring the Crime of Identity Theft: Prevalence, clearance rates, and victim/offender characteristics. *Journal of Criminal Justice*, 33, 19-29.
- Bennett, R. R. (1991). Routine Activities: A Cross-National Assessment of a Criminological Perspective. *Social Forces*, 70, 147-164.
- Bernburg, J.G., & Thorlindsson, T. (2001). Routine Activities in social context: A closer look at the role of opportunity in deviant behavior. *Justice Quarterly*, 18, 543-568.
- Blumstein, A., Cohen, J., Roth, J., & Visher, C. (2001). Introduction: Studying Criminal Careers. In A. R. Piquero & P. Mazerolle (Eds.), *Life-Course Criminology: Contemporary and Classical Readings* (pp. 45-66). California: Wadsworth/Thompson Learning.
- Cantor, D., & Lynch, J. P. (2000). Self Report Surveys as Measures of Crime and Criminal Victimization. *Criminal Justice*, 4, 85-138.
- Cohen, J., & Cohen, P. (1983). *Multiple Regression/Correlation for the Behavioral Sciences* 2nd ed. Hillsdale, NJ: Erlbaum Associates, 67-69, 490-497.
- Cohen, L. E., & Cantor, D. (1980). The Determinants of Larceny: An empirical and theoretical study. *Journal of Research in Crime and Delinquency*, 17, 140-159.
- Cohen, L. E., & Felson, M. (1979). Social Change and Crime Rate Trends: A routine activity approach. *American sociological Review*, 44, 588-608.

- Dadisho, E. (2005). Identity Theft and the Police Response: The Problem. *The Police Chief*, January, 25-29.
- Devellis, R. F. (1991). *Scale Development: Theory and Applications*, Sage, Newbury Park, CA.
- Fair and Accurate Credit Transactions Act. (2003). Retrieved on January 12, 2006 from http://www.factact.us/factact_002.htm.
- Federal Trade Commission. (2001). ID Theft: When Bad Things Happen To your Good Name, retrieved on February 13, 2004 from www.consumer.gov/idtheft/.
- Federal Trade Commission. (2003). Identity theft Victimization Survey.
- Federal Trade Commission. (2004). National and State Trends in Fraud and Identity Theft, January-December 2004. *Identity Theft Data Clearinghouse*.
- Federal Trade Commission. (2006). Consumer Fraud and Identity Theft Complaint Data, January – December 2005. Source: Data from Consumer Sentinel and the Identity Theft Data Clearinghouse.
- Felson, M., & Clarke, R.V. (1998). Opportunity Makes the Thief: Crime Detection and prevention series, Paper 98. *Police Research Series*. London: Home Office.
- Field, A. (2000). *Discovering Statistics using SPSS for windows*. Thousand Oaks, CA: Sage Publications.
- Fisher, B. S., Cullen, F. T., & Turner, M. G. (2002). Being Pursued: Stalking Victimization in a National Study of College Women. *Criminology and Public Policy*, 1, 257-308.

- Godin, G., & Kok, G. (1996). The Theory of Planned Behavior: A Review of its Applications to health-related behaviors. *American Journal of Health Promotion*, 11, 87-98.
- Hawdon, J. E. (1996). Deviant Lifestyles: The Social Control of Routine Activities.” *Youth and Society*, 28, 162-188.
- Higgins, G. E., Hughes, T., Ricketts, M., & Fell, B. D. (2005). Student Perception and Understanding of Identity Theft: “We’re just dancing in the dark,” *Law Enforcement Executive Forum*, 5, (5): 163-178.
- Hipp, J. R., Bauer, D. J., Curran, P. J., & Bollen, K. A. (2004). Crimes of Opportunity or Crimes of Emotion? Testing Two Explanations of Seasonal Change in Crime. *Social Forces*, 82, 1333-1373.
- Hoar, S. B. (2001). Identity Theft: The Crime of the New Millenium, *USA Bulletin March 2001* 49 (2), retrieved on January 24, 2005 from http://www.usdoj.gov/criminal/cybercrime/usamarch2001_3.htm.
- Just The 2004-2005 facts. Retrieved from www.louisville.edu. (2004).
- Klepper, S., & Nagin, D. (1989). Compliance and Perceptions of the Risks of Detection and Criminal Prosecution. *Law and Society Review*, 23, 209-240.
- Landau, S., & Everitt, B. S. (2004). *A Handbook of Statistical Analysis using SPSS*. Washington, D.C.: Chapman and Hall/CRC.
- Levin, J., & Fox, J. A. (2006). *Elementary Statistics in Social Research*. 10 ed. Pearson Education, Inc. Boston, Massachusetts.
- LoPucki, L. M. (2001). Human Identification Theory and the Identity Theft Problem. *Texas Law Review*, 80, (1): 89-136.

- Maxfield, M. G., & Babbie, E. (2000). *Research Methods For Criminal Justice and Criminology*. Wadsworth: Thompson Learning.
- Miethe, T. D., Stafford, M. C., & Long, J. S. (1987). Social Differentiation in Criminal Victimization: A test of routine activities/lifestyle theories. *American Sociological Review*, 52, 184-194.
- Milne, G. R. (2003). How Well Do Consumers Protect Themselves from Identity Theft? *Journal of Consumer Affairs*, 37, 388-402.
- Moriarty, L. J., & Williams, J. E. (1996). Examining the Relationship between Routine Activities Theory and Social Disorganization: An analysis of property crime victimization. *American Journal of Criminal Justice*, 21, 43-59.
- Mustaine, E. E., & Tewksbury, R. (1998). Predicting risks of larceny theft victimization: A routine activity analysis using refined lifestyle measures. *Criminology*, 36, 829-858.
- Mustaine, E. E., & Tewksbury, R. (1999). A Routine Activity Theory Explanation for Women's Stalking Victimization. *Violence Against Women*, 5, 43-62.
- Newman, G. R. (2004). Identity Theft: Problem-Oriented Guides for Police Problem-Specific Guides Series, *Cops/U.S. Department of Justice*, no. 25.
- O'Sullivan, O. (2003). Gone 'Phishing.' *American Bankers Association. ABA Banking Journal*. New York, 11, 7-11.
- Perl, M. W. (2003). Its Not Always About The Money: Why the state Identity Theft laws fail to adequately address criminal record identity. *Journal of Criminal Law & Criminology*, 94, 169-209.

- Pogarsky, G. (2004). Projected Offending and Contemporaneous Rule-Violation: Implications for Heterotypic Continuity. *Criminology*, 42, 111-135.
- Rodgers, K., & Roberts, G. (1995). Women's Non-spousal Multiple Victimization: A test of the routine activities theory. *Canadian Journal of Criminology*, 37, 363-376.
- Sharp, T., Shreve-Neiger, A., Fremouw, W., Kane, J., & Hutton, S. (2004). Exploring the Psychological and Somatic Impact of Identity Theft. *Journal of Forensic Sciences*, 49, (1): 131-136.
- Shoemaker, D. J., (Fourth Eds.) (2000). Theories of Delinquency: An Examination of Explanations of Delinquency Behavior, New York: Oxford University Press, 16.
- Slosarik, K. (2002). Identity Theft: An Overview of the Problem. *The Justice Professional*, 15, (4): 329-343.
- Sutton, S. (1998). Predicting and Explaining Intentions and Behaviors: How well are we doing? *Journal of Applied Social Psychology*, 28, 1317-1338.
- Tewksbury, R., & Mustaine, E. E. (2001). Lifestyle Factors Associated with the Sexual Assault of Men: A Routine Activity Theory Analysis. *Journal of Men's Studies*, 9, 153-176.
- U.S. Department of Justice, Federal Bureau of Investigation (1989). White-Collar Crime: A Report to the Public. Washington, D.C.: Government Printing Office.
- U.S. Department of Justice. (2004). Problem-Oriented Guides for Police Problem-Specific Guides Series. No. 25. Office of Community Oriented Policing Services.

U.S. General Accounting Office. (2002, March). *Identity Fraud: Prevalence and cost appear to be growing* (Publication No. USGAO-02-363). Washington, DC: Author.

Vito, G. F. & Blankenship, M. B. (2002). *Statistical Analysis in Criminal Justice and Criminology: A User's Guide*. Prentice Hall: Upper Saddle River, New Jersey.

Legal Statutes

Identity Theft and Assumption Deterrence Act. (1998), 18 USCS §1028.

Fair and Accurate Credit Transactions Act. (2003), 15 USCS § 1681c-1.

APPENDIX

Preamble and Survey

Identity Theft and Routine Activities: A Test of Victimization using college students

Spring 2006

Dear Respondent:

You are being invited to participate in a research study. The study seeks to determine if your daily activities can help assess and possibly help prevent the further growth of the problem of identity theft by explaining the risk of victimization using college students. Your participation would consist of completing the attached questionnaire. You are free to decline to answer any question that makes you feel uncomfortable or that leaves you prosecutable under the law.

Whether or not you will directly benefit from this study is unknown, but it is hoped that your participation will help others in the future. Foreseeable risks to you might be slight discomfort in answering certain questions. And, as in any research, there is always the possibility of unforeseen risks. To date, no known risks are associated with these questions.

The sponsor, the Human Subjects Protection Program Office, and the Institutional Review Board (IRB) may inspect the research records of this study. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study. The data will be kept under lock and key and will be protected to the full extent of the law. However, absolute confidentiality cannot be guaranteed. Although absolute confidentiality cannot be guaranteed, confidentiality will be protected to the extent permitted by law. Should the data collected from this study be published, your identity will not be revealed. The sponsor, the Institutional Review Board (IRB), the Human Subjects Protection Program Office (HPPSO) and other appropriate regulatory government agencies may inspect your research records. The investigator will supply your information to those responsible for regulatory and financial oversight of research subjects. Your participation in this research is voluntary. You may refuse or discontinue participation at any time without losing any benefits to which you are otherwise entitled.

Should you have any questions you may call the principle investigator Dr. Tad Hughes at (502) 852-0376 or by e-mail me at twHugh01@louisville.edu or the secondary investigator Brian Fell at 852-7974 or bfell@louisville.edu. Should you have any questions about your rights as a research subject you may call the Human Subjects Protection Program Office at (502) 852-5188 and they will put you in touch with the appropriate chair of the IRB to discuss the matter.

Thank you for your consideration to participate in this study.

Dr. Tad W. Hughes

Brian D. Fell

By completing the questionnaire, you are indicating your willingness to participate freely in this research study. You are further indicating that all your present questions have been answered in a language you understand.

Please place a check mark or an X in the appropriate blanks.

1. What is your sex? Female _____ Male _____
2. What is your ethnicity? White _____ Non-White _____
3. What is your age in years? _____
4. What is your class rank? Freshman _____ Sophomore _____
Junior _____ Senior _____

Question	Yes	No
5. Has anyone ever misused your credit card to place charges on your account without your permission?		
6. Has anyone ever misused your credit card number to place charges on your account without your permission?		
7. Has anyone ever misused any of your existing bank accounts without your permission to run up charges or to take money from your accounts (This includes fraud concerning checks, savings accounts, loans, and electronic fund transfers)?		
8. Has anyone ever misused any of your existing phone or utility accounts without your permission to run up charges or to take money from your accounts?		
9. I have ordered a copy of my credit report within the last year.		
10. When I order new checks, I have the bank mail them to me.		
11. I carry my social security card with me in my wallet or purse.		
12. When asked to create a password, we have used either my mother's maiden name, or my pet's name, or my birth date, or the last four digits of my social security number, or a series of consecutive numbers.		
13. I always deposit my outgoing mail in post office collection boxes or at		

a local post office.		
14. Before I reveal any personal identifying information, I always find out how marketers are going to use it.		
15. I carry more credit cards than I need in my wallet.		
16. I sometimes toss my credit card receipts in a public trash container without shredding them into tiny pieces.		
17. I always check each item in my billing statements for mistakes and report these immediately.		
18. If asked by a merchant, I provide my social security number so they can write it on my check.		
19. I sometimes leave my mail in my mailbox (at home) for a day or two before I pick it up.		
Question	Yes	No
20. I always shred or tear up the credit card offers I receive in the mail before throwing them in the trash.		
21. I keep a copy of my PIN number and passwords in my wallet or purse in case I forget them.		

Please READ the following scenarios carefully and answer the questions that follow, by circling the appropriate answer choice. The numbers represent the percentage of the likelihood that you would do the same thing as the person in the scenario.

S. is always in the habit of throwing away all credit card proposals that come to their mailbox. S. is in the habit of throwing these credit card proposals away without shredding them.

23. Think of how you dispose of your mail, what is the likelihood that this would happen to you?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

24. What is the likelihood that this could happen to you in the next 30 days?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

25. What is the likelihood that this could happen to you while you are in college?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

26. What is the likelihood that you would shred all of your credit card information after you paid your bill?

No chance 100% Chance

0 1 2 3 4 5 6 7 8 9 10

27. What is the likelihood that you would not even read new credit card proposals that come in the mail because you consider them junk mail?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

J. always carries a cell phone no matter what the circumstances of the situation. In fact, while attending class, J. uses a cell phone either on the desk or on top of a bag so that J. can keep track of time. J. forgets that the cell phone is on the bag. When J. gets up to go to the next class the cell phone drops to the floor under a desk. H. who sits behind J., sees a cell phone in front of their desk and realizing that the minutes on H.'s cell phone are close to going over for the month, decides to make a few calls. H. *borrow*s the cell phone for the day and makes calls that run up J.'s bill. Rather than turning in the cell phone, H. hangs onto the cell phone for another day or two before throwing it away so that H. cannot be connected and caught with J.'s phone.

28. Think of how you handle your cell phone, what is the likelihood that what happened to J. could happen to you?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

29. What is the likelihood that this could happen to you in the next 30 days?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

30. What is the likelihood that this could happen to you while you are in college?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

31. What is the likelihood that you would call the cell phone company immediately and have them shut off your services until you found your cell phone?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

32. What is the likelihood that if you lost your cell phone you would contact several lost and found areas on campus and then wait for someone to contact you saying they found your cell phone?

No chance 100% Chance

0 1 2 3 4 5 6 7 8 9 10

P. is always in the habit of getting money out from an ATM on campus because there is no surcharge fee. While in a rush to eat before class, P. leaves the card in the machine forgetting to close out the transaction. The next person in line, B. sees that the account is still open and decides to get money out of P.'s account. B. then takes the money and the card with them when they leave. With P.'s account information and a receipt B. later contacts P.'s bank and requests new checks be sent to B's address. When the new checks arrive, B. writes checks all over town using P's money.

33. Think of how often you get money out of an ATM, what is the likelihood that what happened to P. could happen to you?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

34. What is the likelihood that this could happen to you in the next 30 days?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

35. What is the likelihood that this could happen to you while in college?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

36. What is the likelihood that you would realize your card was lost that day?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

37. What is the likelihood that you would call your bank that day to cancel it until you found it?

No chance 100% Chance
0 1 2 3 4 5 6 7 8 9 10

For the next set of questions please read over the question carefully and place a check mark in the space that most accurately represents your answer.

Question	0	1-3	4-7	8+
38. In an average week, how many times do you use a credit card?				

39. In an average week, how many personal checks do you use to purchase items?				
40. In an average week, how many times do you use a debit card to purchase items?				
41. In an average month, how many items do you purchase over the internet?				
42. In average month, how many times do you check your bank statements?				
43. In an average year, how many times do you check your credit report?				
44. As a University of Louisville student, in an average year how many times are you approached to fill out a credit card application?				
45. As a University of Louisville student, in an average year how many times are you approached to open a different savings or checking account?				

46. In your opinion, what can the University of Louisville do to reduce the risk of identity theft experienced by their students? Please provide at least 3 detailed and realistic suggestions.

CURRICULUM VITAE

Brian D. Fell

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EDUCATION

2004-2006 University of Louisville

- Master of Science in Justice Administration
- GPA: 3.91

1999-2004 University of Louisville

- Cumulative GPA: 3.446
- Bachelor of Arts in Political Science
- Bachelor of Science in Justice Administration

WORK EXPERIENCE

2004 - Present-Graduate Assistantship

- University of Louisville-Justice Administration Department
- Responsibilities: Class supervision, Moderate teaching, Proctoring examinations, Research assistance, etc.

2006 – (Spring In-progress) Target – Executive Team Leader Assets Protection

- General training in all Team Lead positions at Target
- Specialized ETL Assets Protection Training
- 400 Hours of Training

2004 - Jefferson County Coroner's Office - Student Internship

- Modernizing files of past major death cases
- Assisting Deputy Coroners with death investigations involving death confirmation, toxicology, and interaction with family of the deceased.

2003-Present/Seasonal - Sunshine Window Cleaning Company - Window Cleaner

- First Assistant Foreman
- Cleaned windows, (95% residential)

2002 - Jefferson County Corrections Facility - Student Internship

- Pretrial Services
- Worked 140 hours
- Regular interviews of defendants
- Verified defendant's information

AWARDS RECEIVED

- Co-recipient (with George E. Higgins and Abby L. Wilson) of the 2006 William L. Simon/Anderson Publishing Outstanding Paper Award for the Outstanding faculty paper presented at the 2005 Academy of Criminal Justice Sciences annual meeting.

Paper title: How does low self-control and social learning theory come together to explain Internet software piracy?

PUBLICATIONS

Higgins, George E., Hughes, Tad, Ricketts, Melissa, & Fell, Brian D. (2005). Student Perception and Understanding of Identity Theft: "We're just dancing in the dark." *Law Enforcement Executive Forum*, v. 5, no. 5, p. 163-178.

Higgins, George E., Fell, Brian D., & Wilson, Abby L. (2005) Software Piracy and Deterrence: A factorial design approach. *Journal of Criminal Justice and Popular Culture*, v. 12, p. 166-184.

Higgins, George E., Fell, Brian D., & Wilson, Abby L. (2006). Digital Piracy: Assessing the contributions of an integrated self-control theory and social learning theory. *Criminal Justice Studies: A Critical Journal of Crime, Law, and Society*, v. 19, no. 1, p. 3-22.

Hughes, Tad W. & Fell, Brian D. (2006). The Fourth Amendment and Canine Searches in Illinois v. Caballes: "The Dogs on Main Street Howl." *Law Enforcement Executive Forum*, v. 6, no. 2, p. 167-182.

PUBLICATIONS UNDER REVIEW

Higgins, George E., Fell, Brian D., & Wilson, Abby L. (Submitted August 2005). Low Self-Control and Social Learning in Students' Intentions to Pirate Movies from the Internet. *Social Science Computer Review*.

PAPERS PRESENTED

Fell, Brian D. (2006). "A New Look at Identity Theft Using Routine Activities Theory." Presented at Academy of Criminal Justice Sciences Annual Meeting, Baltimore, Md., March 1, 2006.

Fell, Brian D. (2005). "A New Look At Identity Theft Using Routine Activities Theory," presented at Southern Criminal Justice Association Annual Meeting, Jacksonville Beach, Fl., September 28, 2005.

Fell, Brian D. (2005). "The Fourth Amendment and Canine Searches in Illinois v. Caballes: "The Dogs on Main Street Howl," presented at Southern Criminal Justice Association Annual Meeting, Jacksonville Beach, Fl., September 28, 2005 with Thomas Hughes.

Fell, Brian D. (2005). "Digital Piracy: Assessing the Contributions of an Integrated Self-Control Theory and Social Learning Theory," presented at Academy of Criminal Justice Sciences Annual Meeting, Chicago, Il., March 16, 2005 with George E. Higgins and Wilson, Abby.

Fell, Brian D. (2005). "Student Perception and Understanding of Identity Theft: "We're Just Dancing in the Dark," presented at Academy of Criminal Justice Sciences Annual Meeting, Chicago, Il. March 17, 2005, with Thomas Hughes*, George E. Higgins, and Melissa L. Ricketts.

SERVICE

Panel Chair "Computer Related Crime" Annual Meeting of Southern Criminal Justice Association, September 2005.

ACADEMIC HONORS

- Alpha Phi Sigma
- Alpha Phi Sigma Treasurer 2005/2006
- Graduated top 10% of Justice Administration Majors (2004)
- Deans Scholar - Spring 2003
- Deans List - Spring 2003 & 2001, 2000

References available upon request.