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Examining Campus Crime at Massachusetts' Colleges and Universities

Kimberly Beskalo Stewart

Examining Campus Crime at Massachusetts' College and Universities

By
Kimberly Stewart

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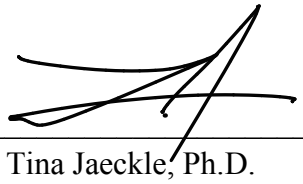
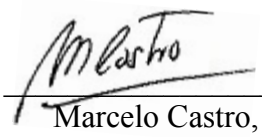
Approval Page

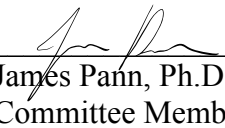
This applied dissertation was submitted by Kimberly Stewart, under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and School of Criminal Justice and approved in partial fulfillment of the requirements for the degree of Philosophy at Nova Southeastern University.

Approved:  5/12/2023

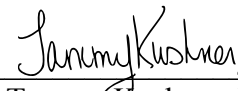
Tina Jaeckle, Ph.D. Date:
Committee Chair

Approved:  5/12/2023

Marcelo Castro, Ph.D. Date:
Committee Member

Approved:  5/12/2023

James Pann, Ph.D. Date:
Committee Member

Approved:  5/12/2023

Tammy Kushner, Psy.D. Date:
Executive Associate Dean

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Kimberly B Stewart
Name

May 12, 2023
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Abstract

Examining Campus Crime at Massachusetts' Colleges and Universities. Kimberly Stewart 2023: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education and School of Criminal Justice. Keywords: campus crime, Clery Act, social disorganization theory; campus property crime rate; campus personal/violent crime rate

This study was designed to examine the predictors of campus crime. College campuses are not immune to crime, and as such, campus crime is a concern not only for those students who reside and attend classes on the campus, but also for those who work on the campus and for the parents of the college students. The attention to crime on college campuses has increased in the recent past. This is due to events that have occurred on college campuses including the events at both Virginia Tech and Northern Illinois that resulted in the deaths of students and faculty/staff. To determine whether there are predictors of campus crime, 2019 data from the Campus Safety and Security Data Cutting Tool (Clery Act statistics) and the Integrated Postsecondary Education Data System for 88 colleges/universities that received Title IV funding and had either a campus police department or campus security department were examined to determine whether there was statistical significance between the predictor variables and the outcome variables. In addition, data from the Uniform Crime Reporting program and the U.S. Census Bureau were used to identify potential predictor variables that pertain to the areas surrounding the college campuses. The study also looked at whether college/university proxies for the elements of social disorganization theory can be used to predict campus crime. The study design consisted of nonexperimental research utilizing a correlational approach with a predictive design to address the question of which combination(s) of independent variables best predict the occurrence of future crime on college campuses in Massachusetts.

The results of the study found 2 of the of the 8 regression models to be statistically significant. These models identified only one significant independent variable and it pertained to the surrounding areas variables and was the percent of individuals 16+ in the civilian workforce, and it was related to campus property crime. Regarding the proxies for social disorganization theory, both regression models were statistically significant, yet only one independent variable was significant. The results showed that the ratio of clubs to students was statistically significantly related to the property crime on the college campuses. Regarding this finding, campus administrators are encouraged to seek to enhance the security that is available for events convened by the organizations and to develop policies that look to encourage those in the campus community to be better protectors of their property no matter where they are on the campus and no matter what they are doing on the campus, as opposed to blindly removing or eliminating clubs/organizations from their campuses.

Table of Contents

Page

Chapter 1: Introduction 1

Nature of the Research Problem 2

Background and Significance 7

Barriers and Issues 10

Definition and Terms 11

Chapter 2: Literature Review 16

The Clery Act 17

Perceptions of Campus Safety/Assessing Campus Safety 25

Predictors of Campus Crime 42

Criminological Theories 53

College Policies 62

Research Questions 66

Chapter 3: Methodology 68

Participants 69

Stakeholders 70

Instruments 72

Procedures 77

Data Analysis 79

Expected Findings 82

Chapter 4: Results 83

Introduction 83

Descriptive Statistics....83
Analysis....89
Summary....118
Chapter 5: Discussion....119
Introduction....119
Summary of the Findings....120
Interpretation of the Findings....123
Context of the Findings....134
Implications of the Findings....137
Limitations of the Study....142
Future Research....146
References....148
Appendices
A Campus and Surrounding Area Crime Reported, by Crime, in Accordance with the Clery Act and the UCR....154
B Campus and Surrounding Area Crime Reported, by Crime and by Type of Campus Safety, in Accordance with the Clery Act and the UCR....156
C Bivariate Correlation Among Independent Variables: Campuses with Campus Police Departments....158
D Bivariate Correlation Among Independent Variables: Campuses with Campus Security Departments....160
Tables
1 Campus Crimes Reported in Accordance with the Clery Act and the UCR .. 91

2 Surrounding City Crimes Reported in Accordance with the UCR 91

3 Campus Crime Reported in Accordance with the Clery Act and UCR by Campus Safety Type 93

4 Correlations for Student and Campus Variables: Campus Police 97

5 Correlations for Faculty, Campus, and Surrounding Areas Variables: Campus Safety Department 100

6 Regression Model Institutions with Campus Police for Clery Act 107

7 Regression Models Institutions with Campus Safety for Clery Act 114

8 Regression Models Social Disorganization Theory 117

Chapter 1: Introduction

Jeanne Ann Clery was a freshman at Lehigh University in 1996. During that year, she was raped and murdered in her dorm room. Although she did not know her attacker, the attacker was a fellow student (Kiss, 2013). This violent attack on their daughter caused the Clerys to push for information regarding campus crime and campus safety procedures to be made available to both the campus community and prospective students (Kiss, 2013). The result of the actions of the Clerys is what is now referred to as the Clery Act. The Clery Act requires that all colleges/universities that receive federal funding (Title IV funding) to report the crimes that occur on the campus and at any location that is under the control of the college/university (Kiss, 2013). This data is to be shared annually with the campus community. Some schools post the annual security report on the college/university website while others e-mail the report to the members of the campus community. Although it is important that the college/universities collect this data and provide the reports to the campus community and perspective students and their families, the question is how is the data being used and can this data help to identify predictors of campus crime.

College campuses are not immune to crime, so again, the question then becomes are there any predictors as to what crimes may occur on what campuses, based upon the data available through the Clery Act? Using the demographics of the college and the surrounding area, is it possible to identify characteristics that can help schools to not only predict what crimes will occur on campus but also create safety and security policies that will help to reduce campus crime. Campus crime is tracked by all colleges and universities that receive Title IV federal funding. These institutions must not only record

crimes that are reported on campus, but they must also make this information available to current students, faculty, and staff, as well as prospective students. Although not required by the Clery Act, many institutions also report this data to the Federal Bureau of Investigations Uniform Crime Reporting program (Hummer, 2004). The thought is that this information will be used by students, faculty, and staff to modify their behavior to ensure their safety while on campus. Regarding prospective students, the thought is that students and their families will review the crime data reports and the crime level on the college campus and use this information when deciding upon which college the student will attend (Hummer, 2004).

Nature of the Research Problem

As noted above, college campuses are not immune to crime, and as such campus safety is a concern not only for those students who reside and attend classes on the campus, but also for those who work on the campus and for parents of the college students. The attention to crime on college campuses has increased in the recent past. This is due to the events that occurred at both Virginia Tech and Northern Illinois University, both resulting in the death of students and faculty/staff. Events such as these have caused college campuses to implement additional safety procedures to protect those on the campus. Virginia Tech not only established procedures that allowed the school to better monitor those students it perceived to be troubled, but it also installed interior locks in campus buildings and installed internet-based alert systems in order to share information about campus emergencies quickly (Regoli et al., 2018). The University of New Hampshire addressed the concern of campus safety by installing loudspeakers on the rooftops of buildings around the campus through which instructions could be shouted

during campus emergencies (Regoli et al., 2018). These are just two examples of colleges addressing safety on their campuses.

Despite the fact that college shootings may be remote, and that crime on college campuses may not occur at the same rate as within the community, it is important for colleges and universities to realize the consequences of such occurrences and to be proactive in attempting to reduce the risk of such occurrences. One reason for this is that student victimization runs counter to the purpose of higher education, that being student development (Pezza & Bellotti, 1995). Students who become victimized oftentimes exhibit lower levels of self-esteem and confidence, which could impact their learning and progression in college, while those who are identified as assailants may be asked to leave the school, thus removing their identity as a student (Pezza & Bellotti, 1995). Campus crime/campus violence not only impacts the members of the community, but the campus as well. A campus could realize a drop in recruitment as well as retention rates due to the occurrence of crime on the campus (Pezza & Bellotti, 1995). Additionally, campuses may suffer from a loss of funding from both funders and alumni if the crime rates are high and not addressed (Pezza & Bellotti, 1995).

The study focused on the colleges/universities in Massachusetts. Because of this, it is important to mention that the Massachusetts Department of Higher Education commissioned a report, in 2008, regarding campus violence. Within this report, the authors provided statistics pertaining to the incidence of violent crime on college and university campuses both nationally and within the Commonwealth of Massachusetts (O'Neill et al., 2008). The authors noted that although the statistics show that campuses are safe overall, the threat of violence did exist and it wass vital for colleges and

universities to have plans in place and resources available to prevent and prepare for these possible violent events (O'Neill et al., 2008). Between the years of 2000 and 2007, colleges and universities within Massachusetts reported a total of 384 violent offenses (1 homicide, 74 forcible rapes, 55 robberies, and 255 aggravated assaults) (O'Neill et al., 2008). O'Neill et al. (2008) found that more than half of the offenses occurred within the dormitories and more than one-third occurred outdoors (O'Neill et al., 2008). This report, however, did not discuss the predictors of campus crime, it simply discussed the crimes that did occur on the campuses.

This researcher also experienced first-hand, via training, a college's response to these events. The researcher taught at a small New England college and all college community members – students, faculty, and staff – were required to participate in ALICE training. ALICE is an acronym for Alert, Lockdown, Inform, Counter, Evacuate. In addition to this training, the school installed key locks on the inside of each classroom and hung the keys by the door so that in case of an emergency, if need be, the classroom could be locked from the inside to avoid either an aggressive intruder or an active shooter from entering the room. Shades were also installed on classroom windows so that individuals could not see into the rooms and see whether there were individuals inside the room. Although these precautions were meant to make the campus community members safe, many students expressed that they felt that they were too reactionary and not enough was done to proactively protect the campus.

Despite the input from the students regarding the implementation of the safety precautions, these procedures are helpful and add to the safety of the campus. That being said, active shooters and aggressive intruders are not the only types of crime that occur on

college campuses. There has not been extensive research conducted to try and identify correlates of campus crime, and many times, when research was done, it was focused upon a particular crime and not campus crime in general. In fact, Nobles et al. noted in their 2012 research that despite the data reporting requirement imposed upon schools by the Clery Act, the study of campus crime patterns have not received much attention (Nobles et al., 2012). The sentiment of Nobles et al. was echoed by Gregory and Janosik. In fact, they state that "Relatively speaking there are little, though an increasing amount, of scientific research in the higher education literature that provides quantitative or qualitative studies of the Clery Act and its impact on campus crime" (2013, p. 46). The amount of research on the Clery again has increased but as these authors noted there is more work to be done and more examination of the Clery Act to be done.

In 2011, Sulkowski and Lazarus conducted a study in which they looked at the ways in which college/university campuses are vulnerable to crime and how these acts on college campus can be mitigated (Sulkowski & Lazarus, 2011). In their research, the authors reviewed efforts that have been made to increase the availability of college crime data for parents and students, efforts to use technology for the purposes of safety on college campuses, efforts to allow for the carrying of concealed weapons on college campuses, and efforts to implement emergency response plans as a means to address any type of crime or attack on a college campus (Sulkowski & Lazarus, 2011). One point the authors made as a result of their research was that it was not clear as to whether ensuring that colleges and universities complied with the requirements of the Clery Act would have an impact on campus crime or campus safety as many students are not aware of the Clery Act, and those who noted that they were aware of the Act indicated that the

information contained in the reports did not influence their choice in college (Sulkowski & Lazarus, 2011). Based upon what Sulkowski and Lazarus learned from their study regarding whether students knew of the Clery Act and how students used the information, it appears that it may be time to reexamine how the data is used, and perhaps use the data to identify predictors of campus crime and use that information to formulate programs and policies on the campus to help ensure the campuses are safe.

The current study was based upon the work of Christina M. Barnes (2009). Barnes examined campus crime that occurred on the campuses of the colleges and universities in Virginia following the Virginia Tech mass shooting. The goal of her research was "the development of a model(s) that practitioners and academicians can use in predicting the amount, and more importantly, the *types* of crime that may potentially occur on campuses given certain contextual factors within and surrounding a particular campus" (Barnes, 2009, p. 5). The current study attempted to replicate the work of Barnes while focusing upon the campus crime on the campuses of the colleges and universities in the Commonwealth of Massachusetts. More specifically, this research sought to use the demographics of the colleges and universities within Massachusetts that have campus police and/or security departments and determine "which correlates determine the amount and types of crime reported at such campuses" (Barnes, 2009, p. 6). In addition to correlates, the researcher sought to identify predictors of campus crime.

It is not a mystery that violent incidents occur on college campuses. In fact, since the passage of the Clery Act, colleges and universities must report such incidents that occur on their campuses. As noted previously, the Clery Act requires all colleges and universities that receive federal financial aid to collect and report on crime that occurs on

and around the campus. This data is used to help colleges and universities to develop policies and procedures in order to prevent future events. Aronowitz and Vaughn proposed a call to action regarding campus crime. They stated, "[w]e call on all of us to discuss ideas and develop rigorous research designs that examine the phenomenon of violence of all types. In this way, we will be contributing to the development of health policy to make our campuses safer learning environments" (Aronowitz & Vaughn, 2013, p. 58). This call to action supports the need for this study. If it is not clear as to what the predictors of campus crime are, then it is difficult to develop policies that will address campus crime. If the policies do not align with the identified predictors, then those polices might not be helping to reduce crime on campus. By identifying correlates and predictors of campus crime, college/university campuses can use this information to educate the members of the campus community to ensure their safety while on campus.

Background and Significance

The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act requires colleges and universities to provide the college's security report to faculty, staff, current students and applicants when requested (Janosik, 2001). The idea was that the information can be used to make determinations of whether to attend the college or university or to even accept an employment offer. While it is helpful and beneficial to have this information so that it can be a part of the decision-making process, the question exists as to whether the report is even read. In his study, Janosik (2001) was interested in learning whether students were aware of the Campus Crime Awareness Act, if the information contained reports that are produced in compliance with the Act influenced their decisions on where to attend college, if the information provided caused

students to modify their behavior while on campus to reduce safety risks, and whether the sharing of this information had an impact on the relationship that exists between students and campus police.

A twenty-question survey was administered at three different institutions, a community college, a comprehensive college, and a research university (Janosik, 2001). The survey contained questions regarding the students' knowledge of the Act, the students' demographic information, and whether the students feeling of safety while on campus and in the areas adjacent to the campus (Janosik, 2001). What Janosik (2001) learned was that 71% of the respondents were not aware of the Act and that 88% of the respondents either did not receive the annual crime statistics report or did not remember receiving it from the institution. The author found that campus crime awareness or prevention programs as well as flyers and newspaper articles that were shared on campus had a greater impact upon student behavior as it pertains to safety than did the data from the crime statistics report (Janosik, 2001).

Ultimately what was found was that the impact of the Campus Crime Awareness Act was mixed. The author noted that topic of campus crime needs more study. He goes on to say that, "[w]hile tragic incidents are infrequent, college and school administrators do have a moral and legal obligation to reduce the safety risks to members of their respective communities where possible" (Janosik, 2001, p. 358). This was why it was important to evaluate the types of crime that occur on the campuses, as well as the characteristics of the campus, and use that data to identify predictors of crime.

Campus crime and victimization not only impacts the perceived safety of the campus, it can also have an impact upon students' grades as well as graduation rates.

Mengo and Black (2016) were interested in how experiences with sexual violence as well as physical and verbal violence by an intimate partner impacted a student's grade point average. They also were interested in how these acts impacted retention rates. What they found was that these acts did have a negative impact on the academic performance of the victim, more so for those suffering from sexual victimization as compared to those suffering from physical and verbal victimization (Mengo & Black, 2016). Mengo and Black also found that the dropout rate for those victims of sexual offenses was higher than the overall college/university dropout rate (2016). Overall, what they learned was that victimization affects grade point averages and retention rates (Mengo & Black, 2016).

In her work, Schuck (Schuck, 2017) sought to add to the literature regarding how organization policies, as well as institutional structure, impacted student achievement. As part of her study, she evaluated the effect that campus crime, as well as discipline, has on graduation rates. She hypothesized that the occurrence of serious violent crime would result in a decrease in graduation rates and that disciplinary referrals to the school conduct board, as opposed to law enforcement (arrests), would be related to increased graduation rates. The result of the study showed that those colleges/universities that had lower rates of homicide, robbery, and aggravated assaults had higher graduation rates (Schuck, 2017). Regarding the hypothesis that focused upon how individuals were disciplined, the college/universities that made greater use of their student conduct board realized higher graduation rates (Schuck, 2017). These findings support the idea that there is a need to understand the predictors of campus crime in order to prevent it and also understand how to handle situations when they occur.

Ultimately, it is important for colleges and universities to not only know the types of crimes that are occurring on their campus, but to also understand the predictors for those crimes. With this knowledge, the colleges and universities can better develop safety plans and protocols to help ensure that student success and graduation rates are not impacted by factors that could have been addressed had the data been used to identify predictors of crime and to design effective safety policies and procedures.

Barriers and Issues

One issue regarding this study pertains to the use of secondary data. This researcher relied upon the methods used by the data sources. Some colleges/universities were excluded from some of the analyses due to missing data. There was not enough missing data to require total removal of the participating school from the study.

There could also be an issue with the validity and reliability of the data. Although information regarding the validity and reliability is available on the source websites, the data is still only as good as those who collected it and entered it into the system.

Lastly, the crime data sets that were used contain only the crimes that were reported to authorities. Because of this, there could be some data missing, that is the study could have been impacted by the dark figure of crime.

Purpose of the Study

Although college campuses are considered to be and are safe places, crimes do occur within the boundaries of the college campuses, as well as in the areas adjacent to the college campuses. These crimes can range from underage drinking to various violent crimes. Studies have been conducted that focus upon perceptions of crime on campus, fear of victimization on campus, the types of crimes that occur on campus, but few

actually focus on predictors of campus crime. Although crime data is reported by colleges and universities that receive federal funding, in compliance with the Clery Act, there are not a significant number of studies that have been conducted that identify predictors of campus crime, that is predictors that are associated with the college campus. As such, this study sought to identify predictors of campus crime using various independent variables that are associated with the college campuses. These variables included, but were not limited to, student demographics, faculty/staff demographics, college/university demographics, and location of the college/university. The focus of the research included the colleges and universities within the Commonwealth of Massachusetts, including private, public, four-year, and two-year institutions, that receive federal funding, and that have security and/or police departments. The intent is to share this information to assist colleges in understanding what may be leading to criminal activity on the campus and providing the colleges and universities with information that can be used to modify/updates safety protocols and procedures, if necessary.

Definition and Terms

This section provides definitions and terms that were used throughout this research proposal. Included are the types of colleges and universities studied; the location of the college and universities, whether they are located in a city, suburban, town, or rural location; and the size of the colleges and universities. The definitions of these variables came primarily from the National Center for Education Statistics website or the Integrated Postsecondary Education Data System. The employment variable and definition came from the U.S. Census Bureau. The crime variables and the corresponding definitions came from both the Campus Safety and Security Data Analysis Cutting Tool

and the Federal Bureau of Investigation's Uniform Crime Reporting program.

Type of Institution

The type of institutions included in this research project include 2-year public, 2-year private, 4-year public and 4-year private institutions. Included in the 4-year institutions are non-profit, not-for-profit, and for-profit institutions. Two-year institutions are defined as those schools where the highest obtainable degree is an associate's degree. Four-year institutions are those institutions that grant bachelor's degrees or higher.

Location of the College/University

The location of the college, that is whether the college is identified as being in a setting classified as rural, town, suburban, or city depended upon the definitions provided by the National Center for Education Statistics. The definition for each of these terms are as follows:

Rural. Census-defined rural territory that ranges in distance from less than 5 miles to more than 25 miles from an urbanized area, as well as being less than 2.5 miles to more than 10 miles from an urban cluster.

Town. Territory inside an urban cluster that ranges in distance of less than 10 miles to more than 35 miles from an urbanized area.

Suburban. Territory outside a principal city and inside an urbanized area with a population ranging from less than 100,000 to one of more than 250,000.

City. Territory inside an urbanized area and inside a principal city with a population ranging from less than 100,000 to more than 250,000 (National Center for Education Statistics, n.d.).

Dormitory Capacity

The maximum number of students for which a college/university can provide residential facilities. This definition was based upon the definition for housing capacity provided by the Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics file.

Institutional Size (Enrollment)

The breakdown of institutional size was based upon the categories identified by the National Center for Education Statistics. The categories include under 200; 200 to 499; 500 to 999; 1,000 to 2,499; 2,500 to 4,999; 5,000 to 9,999; 10,000 to 19,999; 20,000 to 29,999; and 30,000 or more. Once the data is collected, some of these categories may be combined, if necessary for analysis. The enrollment numbers included both undergraduate and graduate students and included both part-time and full-time students. This number was based upon the enrollment as of the fall 2019 semester.

Civilian workforce

According to the U.S. Census Bureau, the civilian workforce consists of people classified as employed or unemployed. Employed includes all civilians 16 years old and over who either (1) were "at work," that is, those who did any work at all during the reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were "with a job but not at work," that is, those who did not work during the reference week but had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are people whose only activity consisted

of work around the house or unpaid volunteer work for religious, charitable, and similar organizations; also excluded are all institutionalized people and people on active duty in the United States Armed Forces.

Crime Definitions

The following are the crimes that were included in this research as well as the definitions, as excerpted from both the Campus Safety and Security Data Analysis Cutting Tool and the Federal Bureau of Investigation's Uniform Crime Reporting program. The crimes included were aggravated assault, arson, burglary, forcible sex offenses, larceny-theft, manslaughter, motor vehicle theft, murder non-negligent negligent murder, rape, and robbery.

Aggravated Assault. An unlawful attack by one person upon another wherein the offender uses a weapon or displays it in a threatening manner, or the victim suffers obvious severe or aggravated bodily injury involving apparent broken bones, loss of teeth, possible internal injury, severe laceration, or loss of consciousness.

Arson. Any willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft, personal property of another, etc.

Burglary. The unlawful entry into a building or other structure with the intent to commit a felony or a theft.

Forcible Sex Offenses. These crimes come from the Campus Safety and Security Data Analysis Cutting Tool and were combined due to the low numbers reported of each crime to campus police. The crimes include rape, fondling, incest, and statutory rape

Larceny-theft. The unlawful taking, carrying, leading, or riding away of property

from the possession or constructive possession of another. Examples are thefts of bicycles, motor vehicle parts and accessories, shoplifting, pocket-picking, or the stealing of any property or article that is not taken by force and violence or by fraud. Attempted larcenies are included. Embezzlement, confidence games, forgery, check fraud, etc., are excluded.

Manslaughter. Manslaughter by negligence: the killing of another person through gross negligence. Deaths of persons due to their own negligence, accidental deaths not resulting from gross negligence, and traffic fatalities are not included in the category manslaughter by negligence.

Motor Vehicle Theft. The theft or attempted theft of a motor vehicle.

Murder. The willful (non-negligent) killing of one human being by another.

Rape. The penetration, no matter how slight, of the vagina or anus, with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim.

Robbery. The taking or attempting to take anything of value under confrontational circumstances from the control, custody, or care of another person by force or threat of force or violence and/or by putting the victim in fear of immediate harm.

Chapter 2: Literature Review

Other researchers have conducted literature reviews pertaining to campus crime. Gregory and Janosik conducted one such review. In their review of the literature, Gregory and Janosik (2013) were specifically looking for scientific research pertaining to the Clery Act. The authors conducted both Google and Google Scholar searches as well as searches within LEXIS-NEXIS and ProQuest in an attempt to locate articles pertaining to not only the Act itself but also the impact the Act has had on college campuses. The Google and Google Scholar searches returned few studies, either quantitative or qualitative, that were directly related to the Clery Act and campus crime.

The searches conducted within LEXIS-NEXIS resulted in several articles that were from 2007 or earlier. Many of the articles that were found made reference to the incidents on the campus of Virginia Tech and Eastern Michigan University (Gregory & Janosik, 2013). The search for law journals and law reviews on the topic resulted in twenty-two citations, yet only one was directly related to the Act itself.

The last database that was used was ProQuest. When using the search term Clery Campus Safety Act the authors found a total of seven dissertations that were produced since 2007. The authors also found other dissertations and theses pertaining to the Clery Act or other campus crime issues. The authors concluded by stating, “[d]espite the presence of the Clery Act since 1990, prior to the first decade of the twenty-first century, there was little formal study regarding the legislation’s impact" (Gregory & Janosik, 2013, p. 55).

Gregory and Janosik (2013) did note that their search of the literature was not an exhaustive search. That being said, what the authors did find was that there was a lack of

content that would be categorized as analytical, quantitative, or qualitative research pertaining to the Clery Act. Based upon their research, the authors, "suggest the way people inside and outside of higher education view campus crime is based on views espoused by the press and not academic research" (Gregory & Janosik, 2013, p. 50). The authors conclude by encouraging additional research surrounding crime prevention, campus safety, as well as improvements to the Clery Act. Commentary such as this is why this researcher focused upon whether the information from the Clery Act as well as demographic information about the campus (the physical campus, the members of the campus community, and the organizations on the campus) can help to predict campus crime and as such help colleges and universities to develop campus safety plans and trainings that are focused in the correct areas. Stated another way, colleges and universities need to view campus crime through a research lens to help ensure that the policies and programs that are put into place are truly addressing the crime issues that exist on the campuses.

The literature review that follows includes articles and books sections that pertain to the Clery Act and the history of the Act, perception of campus safety and the fear of victimization, the predictors of campus crime, the criminological theories that may help explain campus crime, and college policies pertaining to campus safety. This chapter concludes with the research questions for this dissertation.

The Clery Act

The Jeanne Cleary Disclosure of Campus Security Policy and Campus Crime Statistics Act is the most recent version of the original Student Right-to-Know and Campus Security Act that was passed by Congress and signed into law by George Bush

in 1990. Part of this Act is referred to as the Crime Awareness and Campus Security Act of 1990 (Janosik, 2001). The enactment of the Clery Act followed the brutal rape and murder of Jeanne Clery while she was a student at Lehigh University (Janosik, 2001). Clery's parents have worked tirelessly since their daughter's death to ensure that colleges and universities are transparent regarding the criminal activity that occurs on their campuses (Janosik, 2001).

In fact, following the death of their daughter, the Clerys started the non-profit Security on Campus, Inc. (SOC), which is now known as the Clery Center for Security on Campus. It was through the work of SOC that both the legislation in Pennsylvania, as well the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act) (formerly the Student Right to Know and Campus Safety Act of 1990) were passed (Kiss, 2013). The Clery Act requires that all colleges and universities, in order to be eligible for federal funding, report their crime statistics on an annual basis, as well as report their security policies (Janosik, 2001; Kiss, 2013). The Clery Act has caused institutions of higher learning to improve safety measures on their respective campuses, including expanding campus security and making those departments more professional. It appears that since the passage of the Act, college and universities are taking campus security more seriously than they did prior to the passage of the Act (Kiss, 2013).

There are two main components of the Clery Act. The first pertains to the requirement of colleges and universities to report specifically identified crime statistics, to make their crime logs available to the public, and to provide potential students with the campus safety report so that the information can be used as a factor in deciding on

whether to attend the college or university (Janosik, 2001). The second pertains to faculty, staff, and current students. This information can be used by these individuals to possibly change their behavior while on campus, meaning that this information could be used by faculty, staff, and students to adjust their behavior such as whether to walk in a specific area at a specific time. The problem, however, is that the reports need to be viewed or read in order for them to be effective (Janosik, 2001), and there is not sufficient evidence to show that they are.

Despite the Clery Act being in place since 1990, and there being an increasing amount of work written related to the impact of the Clery Act on campus crime, more work does in fact need to be done in this area (Gregory & Janosik, 2013, p. 55). As part of their work, Gregory and Janosik (2013) conducted a literature search to see just what type of information is available about the Clery Act. More specifically, they were interested in finding out what existing books and/or articles are available that provide information about the Act and its impact on campus crime from either a quantitative or qualitative perspective. The literature search included looking at Lexis-Nexis, ProQuest, Google, and Google Scholar. What Gregory and Janosik (2013) ultimately found was that there were few articles regarding the Clery Act and its impact on campus crime that included either quantitative or qualitative research. The authors noted that, "[d]espite the presence of the *Clery Act* since 1990, prior to the first decade of the twenty-first century, there was little formal study regarding the legislation's impact" (Gregory & Janosik, 2013, p. 55).

Gregory and Janosik (2013) also discussed the fact that it does not appear as though the Clery Act has had the desired effect that the sponsors of the Act had hoped

for. There is no clear evidence that parents or students use the information from the Act or the campus safety reports that college are required to develop and distribute when deciding which school to attend. These authors shared information from other researchers in saying that the Clery Act may be more of a symbolic effort to address campus safety (Fisher et al, 2002, as cite in Gregory & Janosik, 2013). As such, the researchers encourage additional research to be done as it pertains to campus crime and campus safety. It is because of commentary and research from authors such as Gregory and Janosik that this researcher focused upon whether information from the Clery Act as well as demographic information about not only the campus community but the campus itself can help to predict campus crime. It was anticipated that if these factors could help to predict campus crime, then campus administrators could use the information to develop campus safety plans and trainings that are focused upon the correct areas.

As noted, the Clery Act requires institutions of higher learning to make crime data available to the campus community and prospective students via the annual crime report. There are established guidelines for the annual security report that each institution must follow. The report must be distributed by October 1 of each year and is to contain information regarding the crimes that were reported to authorities over the past three calendar years (Kiss, 2013). The crimes in the security report are broken down into seven categories that align with the FBI's Uniform Crime Reporting Program. Those seven categories include homicide, sex offenses, robbery, aggravated assault, burglary, motor vehicle theft, and arson (Kiss, 2013). In addition to these crimes, campus authorities must also report any violations of drug laws and any illegal weapons possessions if these events resulted in either an arrest or a campus disciplinary action (Kiss, 2013).

In addition to the annual security report, the campus police departments or security departments must maintain logs of all crimes reported on campus or those that happen within the jurisdiction of the campus police. The events must be logged within two business days of occurrence, and must be made available to the public upon request. Additionally, the logs are to be brief so as not to identify the victim.

One question posed regularly regarding the Clery Act and the required data collection is how the data is used. Janosik (2001) found that the actual effect the Clery Act has upon the behavior of students on campus is mixed. Interestingly enough, although the crime reports and annual reports of safety are to be made available to the campus community, in his study, Janosik found that very few students reported that they received the report and few reported they have read it (Janosik, 2001). And, although one purpose of the Act is to provide the crime data to prospective students to aid in deciding which college or university to attend, less than 4% of the study participants indicated that they used this information when making their college decision (Janosik, 2001). Despite not reading the report, students did obtain information regarding campus crime (both awareness of and prevention of) via flyers and newspaper articles about campus crime.

This information is interesting because despite the availability of the reports, the intended audiences may not read them, and as such may not have the desired impact. This aligns with the findings of Gregory and Janosik (2013) as they did indicate that the Act may not have the positive impact that the sponsors of the Act had desired. That being said, the data collected as required of the Clery Act can be useful to researchers because reviewing the crime data and identifying predictors of crime can help college administrators and public safety officials develop trainings and other types of

informational pieces that can be shared with the campus community. Based upon Janosik's study, students react stronger to flyers and other crime awareness and prevention information than they do to the annual safety reports (Janosik, 2001). As such, "[d]evoting time and energy in developing a single reporting mechanism by which institutions may be compared may not have its desired effect if the Act's purpose is to educate, change behavior, and protect college students" (Janosik, 2001, p. 359).

The Clery Act requires college and universities that accept Title IV funding to report, on an annual basis, crime that occurs on campus. By passing this law, it looked as if Congress was truly concerned about campus crime. Not only did it look as if Congress was concerned about campus crime, but that it also wanted to do something about it. Interestingly enough, in addition to the federal Clery Act, states have passed similar acts requesting similar data from the colleges and universities within their borders. Based upon this, Burke and Sloan (2013) questioned whether the state-level Clery Acts are actually substantive policy or if they are simply symbolic politics, especially since the data requested mirrors that of the federal Clery Act.

In their work, Burke and Sloan mentioned Griffaton (1995, as cite in 2013) and his argument that states are in a good position to ensure that the campus communities, as well as prospective students, have access to the crime statistics for the campus in that the states could withhold state funding and possibly accreditation from these schools if they did not adhere to the reporting requirements. There are proponents and opponents to the idea of Clery-style legislation at the state level. Those who support this type of legislation note that states could have the chance to include additional provisions above and beyond what is required of the federal Clery Act (Burke & Sloan III, 2013). This also means that

the states could impose additional sanctions upon the colleges and universities that are not in compliance. Those who are opposed to state-level Clery Act style legislation first state that it is not necessary mainly because the federal Clery Act applies to all colleges and universities that receive federal funding under Title IV (Burke & Sloan III, 2013). They also note that having something at the state level that is consistent with or along the lines of the federal level legislation is truly what they refer to as symbolic legislation. The authors note, and it is something to consider when discussing the Clery Act and its requirements, "[f]orcing schools to report their crime statistics and security policies is not the same as requiring them to actually develop and implement programs and policies that effectively reduce crime and enhance security on campus" (Burke & Sloan III, 2013, p. 124).

When researching the existence of state-level Clery Act legislation Burke and Sloan (2013) found sixteen states that had what they referred to as Clery Act legislation. Interestingly enough, one of the states is Massachusetts, the state that was the focus of this research. What Burke and Sloan (2013) found overall is that none of the state-level legislation contained all of the key requirements of the federal-level legislation. They identified eight key requirements of the federal Cleary Act. Those requirements include institutions being required to disseminate the annual security reports; institutions being required to annually report their crime statistics; institutions being required to compile daily crime logs; institutions being required to provide timely reporting of on-campus crimes that are in progress; institutions being required to distribute the descriptions of the power and/or authority that campus police or campus security personnel have; institutions being required to publicly publish how the institution handles sexual assault cases;

institutions being required to provide emergency warnings of confirmed on-campus emergencies; and penalties imposed for noncompliance (Burke & Sloan III, 2013). Again, none of the sixteen states include all eight of the key requirements within their state-level legislation.

Since Massachusetts was the focus of this current research, it is important to note that Massachusetts only includes three of the eight provisions within its state-level Clery Act legislation. Those provisions are the requirement to distribute the annual security report; the requirement to annually report campus crime statistics; and the requirement to distribute the description of the powers and/or authority of the campus police or security personnel (Burke & Sloan III, 2013). The question that is raised, and answered, when information such as this is revealed, and as will be seen below, is whether the legislation is on the books simply as a symbolic gesture or whether the state truly wishes to implement substantial policy.

Because none of the sixteen states include all of the requirements of the federal-level Clery Act, it appears as if the state-level legislation truly is merely symbolic. As stated by Burke and Sloan (2013), " it seems that limiting the scope of state-level provisions represents the legislature symbolically doing something about campus crime without really placing any burden on colleges and universities beyond those already imposed by Clery" (p. 130). One of the biggest indicators that the state-level legislation is truly symbolic as opposed to a substantive policy is that almost none of the states that have Clery level legislation impose sanctions for noncompliance (Burke & Sloan, 2013). It can be argued that if the states truly were interested in having an impact in enforcing colleges and universities to address campus crime and the security on their campuses,

they would impose sanctions for noncompliance.

Perceptions of Campus Safety/Assessing Campus Safety

There have been various studies conducted pertaining to both perceptions of campus safety and assessing campus safety. In fact, many of the studies address both of these issues. It is for this reason that this section merged the ideas of perception of campus safety and assessing campus safety. Included in the topic of perception of campus safety is the topic of fear of victimization.

Prior to the 1970s, colleges and universities were allowed to handle criminal matters that occurred on the campus privately. In fact, campus crime reports were considered to be educational records and therefore private (Tomsich et al., 2011). This changed with court decisions pertaining to colleges and universities being instructed to put into place procedures and polices that could help to prevent foreseeable crimes and to put into place campus security, as well as with the various legislative acts and more specifically the Clery Act (Tomsich et al., 2011). Despite the passage of the Clery Act, the true extent of campus crime is still unknown because of the issue of underreporting. This issue with the underreporting has sparked some researchers to note that the Clery Act is more symbolic than effective (Tomsich et al., 2011). This idea of such acts being symbolic was discussed previously when the study by Burke and Sloan was discussed. Why this is important to repeat is the if these acts are merely symbolic, it is necessary to study the crime that occurs on college campuses and not only attempt to find predictors of the crime but to also assess students fear and their perception of their safety while on the college campus.

Something interesting to note about this topic of perceptions of campus safety

comes from the work of Timothy Hart. His research focused on the violent victimization of college students, and in preparing his paper, he looked at the National Crime Victimization Survey. What Hart (2013) found was that the research that has been conducted on this topic suggests that the occurrences or happenings of crime on college campuses is actually rare. He also found that much of the crime that was occurring on college campuses is nonviolent crime. What is interesting is that despite this, there is a high fear among college students of becoming a victim (Hart, 2013).

Based upon the findings of Hart, one would believe that campuses are not safe, due to the fear of victimization among college students. One study directly asked about campus safety, and directly asked a question regarding the safety of college campuses, that is, they asked if colleges/universities were safe (Aronowitz & Vaughn, 2013). The authors mentioned different theories as to why violent events occur on college campuses. One such theory revolves around the access to guns and the carry conceal laws that exist in the United States (Aronowitz & Vaughn, 2013). There are currently eleven states that allow concealed carry on college campuses, in some form or another (Burnett, 2020, February). These eleven states are Arkansas, Colorado, Georgia, Idaho, Kansas, Mississippi, Oregon, Tennessee, Texas, Utah, and Wisconsin (Burnett, 2020). In addition to these states that permit the concealed carry, there are two states that voluntarily allow for the carrying of concealed weapons on campus and those two states are Virginia and Ohio (Burnett, 2020).

Another theory pertains to mental health services that are available and covered by insurance (Aronowitz & Vaughn, 2013). Aronowitz and Vaughn (2013) note that the ability for mental health professionals to share records with law enforcement needs to be

examined so that the privacy of the patient is protected while at the same time the safety of the public is protected. One of the strongest arguments made by the authors is that, "...we need to frame these violent occurrences as a public health emergency just as we would and outbreak of influenza or other public health issues" (Aronowitz & Vaughn, 2013, p. 57).

It is not a mystery that violent incidents occur on college campuses. In fact, since the passage of the Clery Act, colleges and universities must report such incidents that occur on their campuses. As noted previously, the Clery Act requires all colleges and universities that receive federal financial aid to collect and report on crime that occurs on and around the campus. This data is used to help colleges and universities to develop policies and procedures in order to prevent future events. Aronowitz and Vaughn (2013) conclude their article by stating, "[w]e call on all of us to discuss ideas and develop rigorous research designs that examine the phenomenon of violence of all types. In this way, we will be contributing to the development of health policy to make our campuses safer learning environments" (p. 58). Although this quote was previously stated, it bears repeating as it supports the need for the current research. If it is not clear as to what the predictors of campus crime are, then it is difficult to develop policies that will address campus crime. If the policies do not align with the identified predictors, then those polices might not be helping to reduce crime on campus.

One aspect of campus crime or violent crime behavior that may not be captured in the crime logs nor the annual safety report are those that occur in the classroom. It is important to recognize that these events happen because the existence of violent behavior within the classroom can have a negative impact upon the learning of those in the

classroom. Baker and Boland (2011) go on to say that the lack of empirical data pertaining to the behavior and possible violent behavior that may exist in the classroom is because faculty do not necessarily report the behavior to the administration. This lack of reporting could be due to their embarrassment in that they could not control their classroom, a feeling that the administration would not support them, and/or a fear that a student may retaliate (Baker & Boland, 2011). The United States has seen numerous violent incidents on college and university campuses, including Virginia Tech, University of Arkansas at Fayetteville, the University of Arizona Nursing College, to name a few. What is clear is that all incidents that occur on the campuses of colleges and universities need to be reported regardless of whether the event is considered major or minor (Baker & Boland, 2011). Reporting these incidents will not only allow for the identification of the attacker, but it will also allow for an evaluation of the incident and the ability to come to a resolution about the incident. In addition, having this data available will allow colleges and universities to study the incidents thus allowing for direct programming and policies to be implemented on the campus to ensure the safety of the campus community (Baker & Boland, 2011).

Even if the members of the community perceive the campus to be safe, it is important to note that any existence of violent activity on a college campus can have a negative impact on the learning environment. As such, it is the responsibility of the administration to ensure the safety of the campus so that those who work on the campus can focus on their specific jobs without having to worry about if they are safe while at work (Baker & Boland, 2011). Although large-scale events like the one that occurred on the campus of Virginia Tech are not common, thankfully, there are smaller violent

attacks that do occur more often and can have a devastating impact on the campus community. Baker and Boland (2011) acknowledge that more research on this topic is needed. In fact, they note that "Long-term studies on campus perceptions of safety would provide vital information as to the climate of perceived risk on campus and any changes that occur form one year to the next" (Baker & Boland, 2011, p. 698). Having this information can help colleges and universities to ensure that their policies and procedures as they pertain to campus safety remain current and address the current climate on the campus.

Janosik (2001) also looked at campus safety, more specifically looking at how the Crime Awareness and Campus Security Act (Act) impacted student behavior as well as their decision making. To do this, he identified four research questions that asked about students knowledge of the Campus Crime Awareness Act, if the information from the Act aided in their decision regarding where to attend college, if the students used the information from the Act to reduce safety risks, and whether the increase in information sharing impacted the relationship that exists between students and campus police (Janosik, 2001).

Three different institutions participated in the study, a community college, a comprehensive college, and a research university. The campuses were either located in suburban or rural areas and each of the institutions were compliant with the Act. A total of 1,465 students, 500 from the comprehensive college, 490 from the community college, and 475 from the research university were sent a twenty-question survey (Janosik, 2001). A total of 795 of the 1,465 surveys sent out were returned - 21.8% were from the community college, 31.9% were from the comprehensive college, and 46.3% were from

the research university.

Janosik (2001) found that 71% of the respondents were not aware of the Act, and 75% of the respondents indicated that they did not remember receiving the summary of the campus crime report or that they did not receive it. He also found that about half of the male respondents and half of the female respondents indicated that they read the flyers posted on campus about the crime awareness and prevention programs hosted by the school, as well as the crime reports and safety-related articles in the school newspaper. Although they did read about the programs available, few of the respondents indicated that they attend the events. That being said, almost half of the women who responded to the survey noted that they had changed the behavior and how they protected themselves and their personal property because of the flyers and newspaper articles (Janosik, 2001). Interestingly, when the students were asked if the information that was provided to them impacted their likelihood to report criminal activity on campus, just over half of the female respondents indicated it would while only about a third of the male respondents said it would.

What he concluded was that the impact of the Campus Crime Awareness Act is mixed (Janosik, 2001). From this research, it appears that providing the students with the information in a more informal manner has a greater impact on behavior. That is, providing the information via the programming and newspaper articles has more of an impact than the annual crime report. Another conclusion arrived at by Janosik (2001) is that the topic of campus crime needs more study. This particular study focused on schools in either suburban or rural areas. The author notes that the results of a similar study conducted at a school in an urban area could be different (Janosik, 2001). Despite

this limitation, this study provided insight to the students' knowledge of the Act and what activities or information can have an impact upon their behavior, and keep them safe.

Hites et al. (2013) approached the topic of perceived campus safety in a different manner. He conducted a geospatial mixed-methods approach to assess campus safety. This study came about because the administrators of a comprehensive research university located in the southwest wanted a detailed assessment of the campus due to consistent poor ratings of campus safety by the university students. The idea behind the assessment was to allow the administrators to ensure that the decisions that were being made regarding campus safety were informed decisions (Hites et al., 2013). In order to provide the administrators with the information requested, Hites et al. (2013) used four different data sources. They conducted focus groups with students to gather information about the perceived risk of crime as well as unsafe conditions that existed on campus; geospatial statistics to look at the patterns that exist within the data collected; the campus crime data as means to compare the crime that is occurring on the campus and the students' perception of the risk on campus; and a crime severity survey (Hites et al., 2013).

Using ArcGIS, a digital map of the campus was created and the locations identified by the focus group participants as safety risks were plotted on the digital maps. The areas of perceived daytime risk included areas where there was a high amount of traffic, areas where there was little foot traffic, and areas where it was not clear as to the boundary of the campus (Hites et al., 2013). In addition, areas that students perceived to be risky included those that were on the outskirts of the compass, and areas where individuals who were perceived by students to pose a risk to them were located. What Hites et al. (2013) found was that the "overall correlation between perceived risk and

crime incidents was not statistically significant" (p. 361). The integration of the data did result in identifying three conditions: 1. there are locations on campus that are perceived to be high risk by the students but are not; 2. there are areas on campus that are high crime areas, but the perceived risk of these areas is low; and 3. there are areas that are high crime risk that students identified as highest risk areas (Hites et al., 2013).

There are limitations to this study that could impact the generalizability of the findings, including the fact that the focus group participants were recruited based upon convenience and accessibility. Also, the perceptions of safety represent a snapshot in time. The campus could change over the years and as such the campus map used to identify the locations of perceived risk may not exist in the future (Hites et al., 2013). Hites et al. (2013) noted that to validate the findings of the focus groups, a campus-wide survey should be conducted, and that the survey should include not only students (undergraduate and graduate) but also faculty and staff. There is also a need to obtain a more comprehensive set of crime data with annotations as to whether the offense occurred inside or outside of a campus building (Hites et al., 2013).

These results are interesting as administrators may create safety protocols based upon crime data, but they may not address the students' perceived risk of victimization or the perceived safety of the campus. And, despite the limitations, this research further demonstrates a need to understand the crime that is occurring on college campuses and the need to identify the predictors of that crime. Having this information allows for stronger education programs on campus about crime and personal safety and helps students to understand where the areas of high risk exist on campus.

Another study that focused upon perceptions of victimization was conducted by

Hignite et al. (2018). They looked at perceptions of victimization of college students, and more specifically what might be indicators on campus that would cause students to engage in protective behaviors while on campus (Hignite et al., 2018). Hignite et al., (2018) "want[ed] to know if engaging in protective behaviors on campus is directly related to previously identified correlates such as confidence in the police, victimization experiences, media influence, and demographic characteristics, or if these relationships can be explained via fear of campus crime and/or perceptions of the likelihood of victimization on campus" (p. 119). This study is important as it filled a gap in the literature. Prior studies that focused upon campus crime focused upon the crime rates on campus, including those of the adjacent communities; the sharing of campus crime data as required by the Clery Act; and specific crimes that occur on college campuses such as underage drinking, sexual assault, and drug use (Hignite et al., 2018). Hignite et al.'s (2018) study sought to examine how those variables impacted student behavior and more specifically student avoidance behavior and protective behavior (Hignite et al., 2018).

The sample for the study was 990 university students from an urban university located in Southern United States. The respondents were racially diverse, there were more female respondents; and the average age of the respondents was 28.71 (Hignite et al., 2018). Students were asked to, "relate their fear of campus crime, their perceptions of the likelihood of being a victim of crime on campus, knowledge of victimization of friends and classmates, daytime and nighttime campus avoidance behaviors, confidence in university police and security officials, media accounts of campus crime and other self-protective behaviors" (Hignite et al., 2018, p. 134).

The significant predictors of students displaying and using protective behaviors

were the level of confidence in the campus security/police and knowing someone who was a victim of a crime. Interestingly enough, vicarious victimization was a greater influence between predictors and behaviors than was actual victimization (Hignite et al., 2018). The authors also noted that as students indicated an increased confidence in the campus security/police to be able to prevent crime on campus, they engaged in fewer protective behaviors. This can be a concern for campus administrators and something to consider because if campuses engage in campaigns to strengthen the confidence in the campus security/police, the result may in fact be more victimization as students may limit their protective behaviors (Hignite et al., 2018).

Just as other research has suggested, Hignite et al. (2018) also suggested that colleges and universities need to employ various strategies to help reduce fear of crime on campus as well as the perception of crime on campus. They noted that this can be done by developing programs as well as policies and procedures that present the realities of crime on campus. These can take the form of self-defense courses, information shared at freshman orientation, crime stories in the school paper, and crime prevention programs. Hignite et al. (2018) noted that to make students more aware of the data and information that is available regarding campus crime, faculty can play a role by incorporating information about the Clery Act into classroom discussions and even class assignments. All of this being said, when creating campaigns designed to reduce fear on campus, administrators must remember that campus crime, as well as victimization, impacts the entire campus community, not just those who are involved in the incident (Hignite et al., 2018). Therefore, the campaigns must not be focused on the victim, but rather the community as a whole.

Based upon the research by Hignite, it is important for members of the campus community to know what crime is occurring on the campus, as their study showed that knowing about incidents of victimization had a greater impact on students engaging in protective behaviors (Hignite et al., 2018). That being said, Hignite (2018) also noted that oftentimes knowledge of crime on campus is learned by word of mouth and this could result in rumors and not complete or accurate details of an incident, which could lead to more fear of the existence of campus crime and an individual's likelihood of becoming a victim of campus crime. Based upon this, it is important that the college/university not only shares the crime information via the annual crime report, but also educates the students and campus community as a whole regarding the crime rate on the campus. It is also vital for the administrators to ensure that students are aware of the services that are available to help keep them safe. Administrators cannot fully know what programs and protections need to be in place without knowing the predictors of the crime on campus, which is why this researcher focused the current study on identifying the predictors of campus crime.

As the previous authors did, Jennings et al. (2007) focused their study on issues that are related to campus crime. They also looked at both the perception of fear and the perceived risk of crime. The researchers were able to measure these factors by looking at campus victimization, broken down into both personal victimization and property victimization. They also used indirect measures by asking the respondents if they knew anyone who had been a victim of crime within the last year. To do this, Jennings et al. (2007) administered a survey to an undergraduate criminology class at a large southeastern university, the survey was both anonymous and voluntary. The sample size

was 564 students with 72% of the respondents identifying as white and 56% identifying as female. The researchers noted that the university did have some programs in place regarding campus safety, but there was no true understanding as to what measures have had an impact on either campus crime or the fear of crime on campus (Jennings et al., 2007).

With regard to the results from the survey, although males indicated feeling safer on campus and using constrained behavior less than the females, they were more likely to be victims of personal as well as property crimes. The female students were more likely to report being victims of sexual assault. As noted above, Jennings et al. (2007) not only asked about victimization but also indirect victimization. What they found were high rates of indirect victimization. This led the researchers to note that, "direct campus victimization estimates from self-reports of victimization may grossly underestimate the 'true' rates of campus crime" (Jennings et al., 2007, p. 206). Jennings et al. (2007) also mentioned that, "the finding of a disconnect between actual victimization and experiences and corresponding levels of perceived fear, safety, risk, and constrained behavior highlights the importance of educating students on their group-specific rates of victimization" (Jennings et al., 2007, p. 206).

Even though these results are from a convenience sample and the results may not be generalizable to other colleges/universities, it does raise the question as to whether college/university campuses are as safe as they are perceived to be. To that end, Jennings et al. (2007) indicated that there is a strong need to address campus crime as well as the perception of crime on college/university campuses. There is also a need to discuss the use of constrained behavior with members of the campus community as a means to

reduce the chances of becoming a victim (Jennings et al., 2007).

Many of the previous studies discussed looked at campuses in either rural or suburban areas. The research by Tomsich et al. (2011) addressed this by focusing their study on an urban campus because they discovered the much of the research that has been conducted regarding campus crime and the perceptions of crime on college/university campuses has focused upon colleges located in non-urban areas. What they set out to do was to, "document the incidence of victimization among students attending an urban university to contribute to the literature on campus crime that has primarily focused on suburban and rural settings" (Tomsich et al., 2011, p. 183). More specifically, Tomsich et al. (2011) aimed to look at both the fear of crime and the fear of victimization of those students attending the urban college. The reachers modeled their research after the study that was conducted by Jennings et al. (2007), which looked at the same factors as Tomsich et al. but was focused at a traditional land grant university located in the south (Tomsich et al., 2011). The location of Tomsich et al.'s study was a college located in downtown Denver, Colorado.

Tomsich et al. (2011) conducted an on-line survey that resulted in an 11% response rate. Of those who participated in the study, 8% indicated that they had been a victim of a crime since starting at the college. They did find a difference in victimization prevalence rates between their own study and the results provided in the Jennings et al. study, in that both direct and indirect victimization rates were lower in the study conducted by Tomsich et al. as compared to the Jennings et al. study. One thing that the authors did point out is that since their study was conducted via an on-line survey, the selection bias could have had an impact on not only the response rate, but also the

reported victimization rates as those studying at the urban campus may not have been as willing to report their victimization in such as survey (Tomsich et al., 2011). Another factor could be that the traditional campus is larger, which could account for the larger numbers of reports of victimization.

What Tomsich et al. (2011) found was that the students who attended the urban university indicated a "low to moderate level of perceived risk of victimization" (p. 198) while they were on the college campus. They also indicated that students' perceived risk of crime increased at night, in fact it was almost double the perceived risk students felt during the day. One way in which to address the increased perceived risk of crime at nighttime is to improve the campus environment, specifically by adding more lighting (Tomsich et al., 2011). This particular suggestion appears to be consistent with suggestions made by other researchers as a means to address students' perceived risk of victimization and crime on campus.

Another interesting finding, as compared to the results of the Jennings et al. study, was that on the urban campus, males were more likely to report indirect victimization as opposed to females (Tomsich et al., 2011). This finding is the exact opposite of what Jennings et al. found. Although there were differences, there were similar findings as well. The similarities pertained to gender and the fear of crime, the perception of risk of crime, and the constrained behavior demonstrated by the students. On both the traditional and the urban campuses, females had a greater fear of crime; males were more likely to see the campus environment as safe; the perceived risk of crime was higher for females than males; and lastly constrained behavior was more likely to be used by females than males (Tomsich et al., 2011). Each of these findings were significant.

Ultimately, what this study conveys is that it is important for campus administrators of urban campuses to understand how it is that they can make students feel safe while they are on the campus. To do this, campus administrators must be able to measure the the level of fear as well as the level of victimization on the campus so that the college/university can put into place the appropriate safeguards, resources, and services for the campus community.

Another reason why the topic of campus crime and the perception of campus safety is so important is due to the increasing number of individuals who are now attending institutions of higher learning (Maier & DePrince, 2020). This is true because fear of crime on campus can have an impact on student success as well as an impact upon the enrollment of new students and the retention of existing students (Maier & DePrince, 2020). Fear can be seen as being made up of three different components, cognitive, emotional, and behavioral. What Maier and DePrince (2020) discussed in their research is that much of what has been studied on the topic of fear of crime has focused upon the relationship that may exist between "fear of sexual assault and fear of other crimes" (Maier & DePrince, 2020, p. 63). They went on to note that the need exists for research that focuses upon not just the fear but on the perceptions of safety and the perceptions of what colleges/universities have done with regard to implementing safety measures on campus. Maier and DePrince (2020) also noted that there is a gap in the research as it pertains to looking at fear of crime of those students who attend college/university within an urban area.

There also appears to be a lack of research pertaining to whether crime in the areas surrounding the campus could influence the students' fear of crime not only on

campus but also in the surrounding areas. Maier and DePrince's (2020) research sought to add to the body of literature regarding fear of crime by, "examining if students' perceptions of university safety efforts, personal preventative behavior, and routine activities predict fear of crime and perceptions of safety at a university located in a high-crime area" (p. 64). To do this, the researchers focused their study on a private university located in a high-crime area. The college has approximately 3,600 undergraduate students and approximately half of the students live on campus, while the remaining students either live off-campus within the surrounding area or commute to campus (Maier & DePrince, 2020). An interesting finding from the quantitative data was that students' perception of safety was "lowest on campus at night, even compared to off campus at night" (Maier & DePrince, 2020, p. 74). One thought regarding this finding is that there is a greater police presence off campus than on, and this in turn can make the students feel safer. Another thought is that students may not be walking around the area surrounding the campus at nighttime, rather they may be driving to taking taxis (Maier & DePrince, 2020). Despite the perception of fear being greater on campus at night, a majority of the students indicated that they did not change their behavior or routine activities to avoid being a victim of crime, and this is consistent with past research that has been conducted on this topic (Maier & DePrince, 2020). Interestingly enough, the researchers found that for those who do change their behavior, or routine activities, their fear is significantly higher than those who do not. Maier and DePrince (2020) found that "there is a significant correlation between fear of crime and perceptions of safety and perceptions of the measure the university takes to promote safety" (p. 75).

The researchers noted that the three main elements that impact perceptions of

safety for college students are adequate lighting, the number of public safety officers on campus and the number of police officers off campus, and the perceptions regarding what polices and procedures have been put into place by administrators to keep the campus safe (Maier & DePrince, 2020). Even though this study focused on one college campus and had a small sample size, thus preventing generalizability to other campuses, college administrators need to look at these factors and evaluate their own campuses to ensure that these types of concerns are addressed as a means to reduce the perception of a lack of safety on their campuses.

Students fear of victimization is not misplaced, because as colleges and universities have seen a growth in enrollment some too have seen an increase in campus crime. Chekwa et al. (2013) stated that the increase in enrollment, and subsequent rise in campus crime, may be attributable to the availability of financial aid, thus allowing a greater number of individuals, from various socio-economic backgrounds, to attend college. It is because of this growth in college enrollment, and more specifically the growth in campus crime that Chekwa et al. (2013) sought to study students' perceptions of campus crime.

In order to assess the students' perceptions regarding campus safety, Chekwa et al. (2013) surveyed a total of twenty college students, half of whom were female. The sample included individuals from each college year (first year, sophomore, junior, and senior) and 85% of the respondents were full-time students. They looked at current and drafted legislation that focused upon protecting college communities and the behaviors of the students themselves focusing on the responsibility of the students to protect themselves (Chekwa et al., 2013). Ultimately, what Chekwa et al. (2013) discovered was

that administrators should not necessarily be focusing upon why colleges and universities may be experiencing unlawful activity, rather, they should be focusing upon how to prevent acts of violence from occurring on the campuses.

The fear of victimization and the perception of safety on the college campus should be of utmost importance to campus administrators, even when/if the fear is misplaced. This is because fear of victimization and campus crime can both impact student success in college. If students do not feel safe, they will not want to participate in activities on the campus and thus not fully engage in the campus community. This lack of engagement can spill over to a lack of engagement in the classroom, resulting in poor GPAs and students withdrawing from the college/university. These factors make it important to understand the crimes that happen on college campuses, the perceptions students have pertaining to the safety of the campus, and the predictors of crime so that administrators can design safety policies that take each of these into account and ultimately make the campus safe.

Predictors of Campus Crime

One way to look at predictors of campus crime is to look at the communities that surround the campus to see if there is a relationship between the crime rates on the campus and those of the surrounding area. Fox and Hellman (1985) did just that. Although Fox and Hellman's study is from 1985, it does contain valuable information as well as ideas to take into account when attempting to identify the predictors of campus crime. Fox and Hellman (1985) were interested in, "examin[ing] the relative 'safeness of campuses vis-a-vis their communities and to determine whether this various by location within the outside metropolitan areas and … investigat[ing] the correlates of campus

crime with particular attention to the dimensions of the campus profile that encourage or discourage criminal activity" (Fox & Hellman, 1985, p. 430). What was an interesting result from Fox and Hellman's study is that the location of the college/university, that is whether it was in an urban, suburban, or rural area did not impact the campus crime rate and that the campuses all had similar rates of crime (Fox & Hellman, 1985). This is one factor that this researcher looked at in the current study, and found a similar result looking at the colleges/universities in Massachusetts.

In 1994, Sloan sought to identify correlates of campus crime. He noted that despite the fact that the Clery Act was passed in 1992, as of the date of his article there had been little research conducted that focused upon campus crime (Sloan, 1994). The sample size in his study was 481 colleges and universities that had at least 3,000 students as well as on-campus housing. The data was from the 1989-1990 academic year. Sloan used the data that was collected by Odovensky for his report for *USA Today*. The research conducted by Sloan was a replication and expansion of the work done by McPheters and by Fox and Hellman. It expanded their work by looking at more college/university campuses as well as additional variables that could help to identify campus crime (Sloan, 1994).

Sloan's results were similar to the findings of Fox and Hellman (1995). More specifically, in his study, Sloan found that those campuses that had a larger number of students and faculty per acre, had fewer crimes reported. While the acreage showed one result, the size of the campus as measured by available on-campus housing, the size of the student population, the number of faculty members, and the Greek organizations on campus, showed a different result. The colleges/universities with larger campuses had

higher reports of crime (Sloan, 1994). Sloan also found that schools that scored higher on the academic scale had lower violent crime reports. The academic scale was comprised of various factors including the admissions process, the tuition, the percentage of the faculty who possessed terminal degrees, and the retention rates of first-year students into second year (Sloan, 1994). The last finding of interest from Sloan's research was that those colleges/universities that had a higher percentage of minority students had higher reports of violent crime, but this measure was not associated with burglary or theft (Sloan, 1994). Sloan noted in his research that although this information is helpful, the question as to why these factors have an impact on campus crime had yet to be answered.

Each of these points was important to the current study as they demonstrate the need to continue the research to determine what correlates and predictors of campus crime are based upon the population of the college/university and which are based upon characteristics of the institution/campus itself. Also, Sloan's finding regarding campuses with higher percentages of minority students impacting crime may be able to be explained by social disorganization theory. That being said, the current research did not find a correlation between the number of minority students and campus crime.

Just as Sloan was interested in campus crime, so too was Volkwein et al. Volkwein et al. (1995) were interested in determining whether campus crime was more influenced by the characteristics of the campus/institution itself or by the characteristics of the student body (Volkwein et al., 1995). The sample for their study consisted of 416 institutions of higher learning and the data came from a variety of sources including the Uniform Crime Reporting program, data from federal sources regarding community demographics, the Integrated Post-secondary Education Database System, and the

College Board Survey (Volkwein et al., 1995). What Volkwein et al. found overall was that college/university campuses were safer than the communities (cities/towns) in which the they are located. In fact, the surrounding cities had property crime rates that were two times that of the rate on the campuses and violent crime rates at ten times the rate on the campuses (Volkwein et al., 1995).

Regarding the college/university campuses themselves, Volkwein et al. (1995) found variations in the types of crime based upon the campus type, as defined by the 1987 Carnegie institution type classification. The lowest rates of both violent and property crimes were found at the two-year colleges while the highest rates were found at health sciences schools and medical schools. This was particularly true for property crimes (Volkwein et al., 1995). They found that the campuses with more affluent students saw higher property crime rates as compared to those campuses with less affluent students. In addition, campuses that had higher percentages of male students also saw higher property crime rates. What is important to the proposed study is what Volkwein et al. (1995) discovered as the best predictors of campus crime. They found that the mission of the college, wealth, as well as the characteristics of the student population were the best indicators/predictors of crime on college/university campuses (Volkwein et al., 1995). Interestingly, just as previous studies had found, Volkwein et al. (1995) did not find that the characteristics of the communities surrounding the campus influenced crime rates on the campus. That is, they did not find any spillover of crime from community to the campus (Volkwein et al., 1995).

This study provided information to consider when conducting the current research. There have been three studies, albeit older studies, that have found that crime

does not spillover from the community to the campus. It also provided some measures to consider when identifying the predictors of campus crime, specifically looking at the wealth and perhaps the mission of the colleges and their impact on campus crime.

In 2012, Nobles et al. found that there was a lack of research regarding the patterns of crime on college/university campuses. To help address this gap, the researchers looked at crime committed by both students and non-students and offending that occured both on and off campus. This was of interest to these researchers because the Clery Act requires the reporting of crime that occurs on college/university campuses and property that is under the control of the college/university, but it does not require the reporting of crime that occurs in the areas immediately surrounding the campus (Nobles et al., 2012). Nobles et al. (2012) sought to look at the method of required reporting and whether it was providing a true picture of the safety of the campuses involved in the study.

The data for Nobles et al.'s (2012) study was obtained from various sources including the campus police/safety offices of the colleges/universities examined in this study, the police departments of the cities in which the colleges/universities were located, the county sheriff's office, and well as the Division of Alcoholic Beverages and Tobacco. The data spanned a five-year period from January 1, 2003, to December 31, 2007. One of the findings of Nobles et al. (2012) was that only 3.5% of the arrests made were made on the college campus or within the boundaries of the campus. While this may show that college campuses are insulated or protected from crime that may occur in the areas surrounding the campus, Nobles et al. (2012) also found that close to half of the crime that does occur near the campus (within 500 feet of the campus) is not included in the

crime reports and yet the colleges/universities are still in compliance with the required Clery Act reporting. While the colleges/universities as noted are in compliance with the reporting requirements, crimes happening within 500 feet of a college campus could put students who attend the college/university at risk for victimization (Nobles et al., 2012). The researchers focused upon the crimes that occurred both on and off campus, but did not focus upon the crime rates on the campus or in the surrounding communities. Looking at the crime rates could provide additional information regarding the safety of the campuses, which is why part of the current research was to look at the crime rates of the cities/towns in which the colleges/universities are located to obtain a clearer picture of safety of the campuses.

As a means to examine campus crime in relation to the community that surrounds the college campus, Bromley (1995) focused his research on three research questions. He asked the following, "1) What is the proportion of property crimes versus violent crimes on university campuses as compared to the proportion of property crimes versus violent crimes in cities where the universities are located? 2) What are the crime rates of large universities located throughout the United States? 3) Are university crime rates significantly different from communities in which they are located" (Bromley, 1995, pp. 134-135). Bromley (1995) looked at the two largest four-year institutions in each state that reported their index crimes to the Federal Bureau of Investigation's Uniform Crime Report during the years of 1991 and 1992. One major finding from this study was that property crimes far outweigh violent crimes on college campuses. Another finding was that campus crime rates are lower as compared to the crime rates of the cities in which the campuses are located (Bromley, 1995).

Just as Bromley looked at college crime rates and the crime rates in the surrounding communities, so too did Cundiff; however, Cundiff's approach was slightly different. Despite the different approaches, the findings were similar. Cundiff (2021) focused her study on the "relationship between a neighborhood's proximity to a college campus and its corresponding crime rate for property and violent crimes" (Cundiff, 2021, p. 432). Cundiff had two hypotheses in her study. One hypothesis was that the property crimes rates would be higher in the areas surrounding the college campus as compared to those in areas that do not border or surround the college campus. The second hypothesis was that the violent crime rates would be higher in the areas surrounding the college campus as compared to those in areas that do not border or surround the college campus (Cundiff, 2021). Cundiff used data from the National Neighborhood Crime Study from 2000. She does note in her limitations that this data set is over twenty years old, and that that could have an impact upon her results. The National Neighborhood Crime Study was not the only data set that she used. Cundiff (2021) also looked at the crime data from the police departments in the cities identified in her study and U.S. Census data. She looked at a total of 74 cities that were within the data set that also housed four-year institutions with at least 1,000 undergraduate students enrolled.

Ultimately, what Cundiff found was that "spatial proximity to a college campus is associated with higher rates of property crime, larceny, burglary, and robbery incidents, independent of other neighborhood predictors of crime" (Cundiff, 2021, p. 443). Regarding the second hypothesis, the only crime that was significantly related to campus proximity was that of robbery. Cundiff noted that this could be explained because robbery is a crime that is close to a property crime in that it involves the taking of

possessions from another, albeit by force (Cundiff, 2021). She noted that because of this, it is not surprising that the rates for robbery would be similar to that of property crime rates.

Although this study focused more on the crime rates of the surrounding areas and whether the college campus had an impact upon crime rates in this area, this is still important to the current study. It is important as the crime rates surrounding the college campus could also impact whether students wish to attend a specific school. If identifying predictors of crime on campus is important, so to is the information pertaining to crime in the surround areas. This is true because students are not going to remain solely on the campus during their years at the college, they are going to explore and enter into the surrounding communities. If those crime rates are made available as well as the campus crime rates, student can have a better understanding of the school and neighborhood as a whole. This information can also be used by administrators in developing programming and safety protocols to ensure the safety of the members of the college/university community.

While reviewing the literature pertaining to campus crime, Ravalin and Tevis (2017) were able to identify some potential predictors of campus crime. They found that the number of full-time students versus part-time students, as well as the size of the college/university could be predictors of campus crime. In addition, they found that the number of residential students and the budget allocated to campus safety could help to predict campus crime, all based upon previous research (Ravalin & Tevis, 2017). This information was important to the current study in that these are factors this researcher looked at, excluding the campus safety budget, when attempting to identify predictors of

campus crime.

In a different approach to looking at campus crime and victimization rates, Hart (2013) sought to compare victimization rates of college students to a comparison group of individuals in the same age bracket who were not attending college. First and foremost, Hart found that the victimization rate for college students is lower than that of non-college students who are similarly aged (Hart, 2013). He also discovered that the victimization is more likely to occur off-campus than it is to occur on campus. That being said, Hart also discovered that college students are not as likely to report instances of victimization to police no matter the location of where it occurred, and that college students will report incidents that happened on campus to administrators or officials rather than police (Hart, 2013). This is an important factor to consider because if crimes are not reported, then it could impact the predictors that are found, or it could seem like some predictors are stronger than they truly are.

Jacobsen (2017) approached looking at campus crime in a slightly different manner than those already discussed. She focused her study on the influence that crime prevention measures, put in place by administrators, has on crime reporting on campus. She notes that there is much research as it pertains to students' fear of campus crime and victimization, but not as much research on whether the fear is justified, based upon the number of property and violent crimes that are reported to campus officials. As such, her study focuses upon, "…investigating the correlates of crime at colleges and universities to understand how the implementation of various safety features, the gender composition of the study body, and other important institutional characteristics that have been identified previously, impact the occurrence of crime on campus" (Jacobsen, 2017, p.

560). To do this, she identified 4 hypotheses that focused on the following: institutions with more safety features will have a lower number of reported crimes; colleges/universities that enroll more female students than male students will have a lower number of reported crimes; college/universities that employ a greater number of campus police/safety officers will have a lower number of reported crimes; and that the number of safety features coupled with demographics of the student population (male/female) of the institution will have an impact on campus crime (Jacobsen, 2017).

To do this, Jacobson used data from the Survey of Campus Law Enforcement Agencies for 2004-2005 and the U.S. Department of Education's Campus Safety and Security Data Analysis Cutting Tool. After merging the two data sets, the total sample size was 613 public and private four-year degree-granting institutions. In looking at how the safety measures employed by the institution, the male to female ratio of the student population, the type of the institution, the institution's size geographically, and the enrollment at the institution impacted reported crime on campus, what Jacobson found was that the safety measures employed were not significantly associated with reported crime on campus (Jacobsen, 2017, p. 560). She also found that those college/university campuses that have a higher number of male students as compared to female students reported a higher number of reported property crimes on the campus. When looking at the hypothesis pertaining to the number of safety officers on campus and the relationship to the number of reported crimes, Jacobsen's (2017, p. 560) results were not as anticipated in that they were the opposite of what had been found in previous studies conducted by Hummer (2004) and Sloan (1994). What Jacobsen found was that those institutions that had higher numbers of students enrolled relative to the number of campus

officers/security officers had lower reports of campus crime, both property and violent, as compared to those campuses with a larger campus officer/security officer presence (Jacobsen, 2017). This is an interesting finding and the current research did divide the data between campuses with campus police departments and campuses with campus security departments. The current study did not look at the student enrollment in relation to the type of public safety office, but the process followed did give an idea of the impact the different types of safety offices can have on campus crime. The last hypotheses pertained to the gender composition of the campus and the safety measures employed by the campus and how this interaction impacts campus crime. What was found was that there was a statistically significant impact, but only on violent crime (Jacobsen, 2017). More specifically, for those campuses with higher female enrollment, the greater the number of safety features the lower the number of violent crime reports. An interesting finding, however, was that for those campuses with similar male and female populations, as well as campuses with larger male populations than female populations, as the safety measures increased so too did the reported violent crimes (Jacobsen, 2017). Despite the fact that the female to male student ratio nor the safety measures on campus independently impacted reported crime on campus, when combined, they did have an impact on reported violent crime on campus (Jacobsen, 2017).

A lingering question, which Jacobsen indicated needs further research surrounds the finding that increasing the number of safety measures on a college campus could actually result in more reported crime. There are some ideas proposed to answer this question, such as with an increase in safety measures, students may “let their guard down” and not exhibit protective behaviors due to a sense of security on the campus.

Another idea looks at whether the campuses put into place more safety measures because the campus was already reporting a high number of crimes, and it is not clear if the increase in the crime occurred prior to or after the implementation of the safety measures (Jacobsen, 2017). Again, this needs further research to see which, if either, of these proposed ideas do address this finding.

Despite all of the research that has been done regarding campus crime, in his work, Hart (2013) noted that much of the research or articles pertaining to predictors of campus crime are based upon convenience samples or are limited to a small number of schools and even sometimes the information provided is based upon anecdotal evidence. It is because of information such as this that the research being proposed is important. The current study focused on all of the schools within Massachusetts that receive Title IV funding and have campus police or campus security departments. This allowed the findings of the study to add to the body of knowledge regarding predictors of campus crime because it was not based upon convenient samples but rather an entire population.

Each of these studies provided a foundation for the current research and information to consider when analyzing the data. Because some of the studies contained in this section of the literature review are older, it was interesting to see if time and changes to the campuses over the years impacts these findings. The context of the findings of the current research in relation to the literature is discussed in Chapter 5.

Criminological Theories

There have been various studies conducted that have looked to see if different criminological theories can help explain campus crime or help predict campus crime. One study that was reviewed noted that the results of their study did in fact support the idea

that social disorganization theory can help to explain campus crime, but that what is truly needed is to use aspects of social disorganization theory as well as routine activities theory to obtain a better understanding of campus crime (Barton et al., 2010). Based upon this, this section off the literature review looks at studies that have focused upon social disorganization theory and routine activities theory to explain campus crime. Before examining the literature, it is important to take the time to define these two theories. Social disorganization theory comes from the Chicago School. The idea is that "delinquency and disorder [are] more common in areas of cities with greater concentrated disadvantage, racial/ethnic heterogeneity, and residential instability" (Shaw & McKay (1972) as cited in Barton et al., 2010, p. 247). This theory can be applied to the college/university campus as there are groups on the campus who are of economic disadvantage, there are instances of racial/ethnic heterogeneity, and with students potentially transferring in and out, and with graduation, there is the situation of residential instability. Routine activities theory looks at whether there is a motivated offender, a suitable target, and no capable guardian. Arguably, these factors do exist on college/university campuses. Students may follow specific routines and may not exhibit protective behaviors, thus making them suitable targets. Individuals may become motivated to commit a crime if the situation presents itself, for example a laptop left unattended in the library, or a dorm room left unlocked. Regarding no capable guardian, unfortunately, campus security cannot be everywhere at all times, leading to times when there is no capable guardian to thwart the potential crime.

To study social disorganization theory in relation to campus crime, Barton et al. (2010) proposed four hypotheses in their research. The hypotheses looked at the social

structural features of the communities on campus and their association with the organizations on campus; the social structural features of the campus and their association with campus crime; the campus community organizations and their association with campus crime; and lastly that the impact of social structure on the campus crime is anticipated to be impacted by community organization (Barton et al., 2010). To respond to their hypotheses, Barton et al. (2010) focused upon the effects that both social structure and community had upon the rates of property as well as violent crime per 1,000 students based on a national sample of colleges/universities.

The first thing that the researchers found was that the crime rate on college/university campuses are partly due to the social structures that make up the college/university populations, and that the measures used to determine social structure predicted property crime slightly better than it did violent crime (Barton et al., 2010). Regarding campus community and crime, what the researchers found was that much of the previous literature focused upon the Greek organizations, mainly because these organizations have a great impact upon the social and community activities that occur on college/university campuses. In their research, Barton et al. (2010) found that all student groups, not just Greek organizations, were positively associated with campus crime (Barton et al., 2010). What these results demonstrate is that school administrators need to focus on educating students regarding the protection of personal property and they need to be supervising all college community activities and not simply focusing upon the activities of the Greek system on the campus (Barton et al., 2010). What is also interesting, based upon what Barton et al. (2010) found, is that by increasing community on the campus, as a means to allow students to be more connected with the

college/university, the schools may in fact be increasing crime or the potential for crime as opposed to reducing it. This can be a challenge for colleges/universities as schools want to demonstrate that there are many activities available for students to participate in while on campus, yet it is possible that this increase in activities could lead to an increase of crime on campus, which could impact a student's desire to attend the college/university. Therefore, college administrators may wish to consider adding supervision to campus-sponsored events as a means to reduce the potential for campus crime (Barton et al., 2010).

Barton et al.'s (2010) study is not without its limitations. One such limitation is that it is limited to one years worth of data, which can prevent the ability of looking for additional causes for crime. The dependent variable for this study was the official crime data obtained from the UCR. This is potentially problematic due to the underreporting of crime. The researchers were only able to look at crime that was reported to officials, which could be less than the amount of crime that actually occurred on each campus (Barton et al., 2010).

Ravalin and Tevis (2017) also sought to apply the concept of social disorganization theory to campus crime, but focused their research on community college campuses, and more specifically to the campuses within California. The idea behind social disorganization theory is, "the inability of local communities to realize the common values of their residents to solve commonly experienced problems" (Kornhauser, 1978, as quoted in Ravalin & Tevis, 2017, p. 29). If this definition of social disorganization theory is applied to the college campus, then it appears as though college administrators can work towards promoting a cohesive social setting on the campus and

thus not only help to reduce campus crime but to also enhance the community on the campus and also strengthen student performance (Ravalin & Tevis, 2017). For students to be successful, one important element is that of engagement with the campus community, therefore based upon this information, administrators are wise to provide a campus environment that is safe and supportive to the entire campus community. This is interesting as it appears to somewhat conflict with the findings of Barton et al. (2010) in that Barton et al. noted that increasing activities on campus could lead to an increase in campus crime while Ravalin and Tevis (2017) found that promoting cohesive social setting (arguably through additional campus activities) on the campus can strengthen the student performance and thus have a positive impact upon campus crime.

Ravalin and Tevis (2017) collected data from various sources in order to conduct their study. They used data from the Campus Security and Data Analysis Cutting Tool, the U.S. Department of Education, the California Community College Chancellor's Office, as well the at the websites of the various community colleges within California. Because the authors were applying social disorganization theory to a college campus, there was a need to identify proxies for the measures of social disorganization theory in the community (Ravalin & Tevis, 2017). They did this by using Pell Grant recipient and part-time status as proxies for poverty; number of students in the residence halls and first year retention rates for residential mobility; the number of students on the campus as a proxy for population size; where the college/university is located as a proxy for geographic location; the number of full-time faculty to part-time faculty ratio and the student to faculty ratio as a proxy for frequency of unsupervised peer groups; and the number of clubs as a proxy for organizations (Ravalin & Tevis, 2017). The researchers

used the ethic heterogeneity of the campus to satisfy the ethnic heterogeneity measure within the theory.

What Ravalin and Tevis (2017) found was that there was one social structure measure that was significantly related to both property crime and personal crime on the community college campus and that was the Pell Grant, which as noted above was used as proxy for low socioeconomic status. Thus, it is predicted, based upon this result, that campuses with a higher number of Pell Grant recipients are likely to see higher rates of both property and personal crime as compared to other campuses (Ravalin & Tevis, 2017). Additionally, as has been noted by other researchers, Ravalin and Tevis (2017) discussed the fact that in order for students to not only persist but to also succeed, they need to feel safe on the campus. Social engagement on campus is also important for student success, therefore it is important for college administrators to pursue ways in which to reduce crime and the fear of crime on campus (Ravalin & Tevis, 2017).

The researchers identified four areas of future research to help create a deeper understanding of campus crime. These areas for future study include, "social inequalities and the impact on campus crime; campus crime in relation to the local community; the relationship of poverty to student organizations; and the relationship between victims, perpetrators, and reporting crime" (Ravalin & Tevis, 2017). Although all of these areas for future research do relate to what is being proposed in this research proposal, one stands out more readily than the others and that is that researching the relationship that exists between crime that occurs on a community college campus and that which occurs within the surrounding community could help with creating a college campus with a lower crime rate (Ravalin & Tevis, 2017). Even though the authors note that this

approach applies specifically to community colleges, it can be relevant to all college/university campuses, and this researcher sougth to research this relationship for both 4-year and 2-year colleges/universities within the Commonwealth of Massachusetts with the hope to identify predators of campus crime and ways in which administrators can make their campuses safer.

Another criminological theory that can help to explain campus crime and may provide insight into the predictors of campus crime is routine activities theory. This theory was the focus Mustaine and Tewksbury's (2013) study pertaining to the criminal victimization of students. They looked at the lifestyle as well as the related factors to victimization. The researchers note, "routine activities theory… incorporates both structural aspects of the environment as well as issues of physical environments and free will…in explaining criminal victimization" (Meithe & Meier, 1990, as cited in Mustaine & Tewksbury, 2013, p. 158) Based upon this definition of routine activities theory and the research that looks at routine activities theory, there is consistent evidence that victimization is not random, rather victimization can be linked to the lifestyles as well as the routine activities of not only the victim but also the offender (Mustaine & Tewksbury, 2013).

What Mustaine and Tewksbury (2013) ultimately found was that the lifestyle of a college student does in fact impact their risk for victimization. This is believed because

> [college students] engage in behavior that lessens their abilities to recognize or resist danger, while going to events or gatherings that are likely to have many potential offenders in attendance, while at the same time, neglecting to utilize self protection. All in all, this makes college students, in general, and many in particular, experience high risk for criminal victimization (Mustaine and Tewksbury, 2013, P. 176).

In addition to social disorganization theory and routine activities theory, some

researchers state that target congruence can also help explain campus crime and victimization on college campuses. Elvey et al. (2018) fall into this category. Elvey et al. (2018) looked at target congruence and lifestyle-routine activity behaviors as a way in which to explain stalking victimization of college students. With regard to lifestyle-routine activity theory (LRAT), the thought is that behavioral routines that include those mundane day-to-day activities can lead to chances of victimization. Target congruence is said to have been developed in response to lifestyle-routine activities and it focuses upon the suitable target element of LRAT (Elvey et al., 2018).

The researchers posed four research questions that related to whether there is a relationship between either target congruence or victimization opportunity and stalking as well as whether gender moderates these relationships (Elvey et al., 2018). Elvey et al. (2018) obtained the data for their study from the National College Health Assessment-II from Spring 2011. They looked at 129 of the schools and the final sample size for their study was 75,027 undergraduate students. Victimization was measured based upon respondents self-reporting being stalked within the previous twelve months. The researchers did in fact find that stalking was related to the lifestyle of the students (Elvey et al., 2018). They noted that each of the measures of target congruence was significantly related to individuals being victims of stalking. From this they stated that target congruence, “can effectively identify factors that place individuals at risk for stalking victimization” (Elvey et al., 2018, p. 1321). They also found that LRAT can be useful in understanding stalking as it relates to college students. There were two specific measures of LRAT that the researchers found to be significant and those were motivated offenders and proximity to motivated offenders (Elvey et al., 2018). Elvey et al. argue that to best

understand stalking victimization, the theories of target congruence and lifestyle-routine activity should be integrated. Gender on the other hand only moderately impacted the characteristics that lead to stalking victimization (Elvey et al., 2018). That being said, there where characteristics that were important with regard to male victimization of stalking and those that were more important with regard to females. The researchers did note that there were some variables that were characteristics of stalking victimization that were not gender specific, that is, it did not matter if the victim was male or female, these variables applied to victimization (Elvey et al., 2018). These characteristics included substance use, GPA, class year, number of sexual partners, physical limitations, and psychological distress (Elvey et al., 2018). Interestingly enough, these measures that apply to both males and females are also measures associated with target congruence (Elvey et al., 2018). The gender specific characteristics aligned more with LRAT.

Based on this study and information pertaining to routine activities theory and target congruence, there are various steps that colleges/universities can take to help reduce the opportunities for stalking on their campuses. Because psychological distress is a risk factor for victimization, college administrators need to ensure that there exists sufficient mental health services available for students on the campus (Elvey et al., 2018). It may also help to provide training to those in the community to recognize signs of psychological distress and what to if the signs are seen in members of the community (Elvey et al., 2018). Another approach is to educate students about stalking victimization and who and what activities put individuals at greater risk. This could result in students seeking out assistance or modifying behavior to reduce their risk (Elvey et al., 2018).

Although the study by Cundiff (2021) was discussed earlier in reference to

predictors of campus crime, her findings also apply to the use of criminological theories to predict campus crime. Cundiff's (2021) study focused on the crime rates not on only college campuses, but also in the surrounding areas, positing that the rates of crime will be higher in those areas immediately surrounding the campus (Cundiff, 2021). She further notes that in some instances the housing surrounding the colleges campuses are occupied by students of the college. This fact coupled with the idea that students are not permanent residents, oftentimes are not home during the day due to classes and are renters helps to support the idea that both routines activities theory and social disorganization theory can help to explain crime not only on the college campus, but also in the immediate surrounding areas.

College Policies

Colleges and universities need to ensure that the policies and procedures that are in place to help keep the campus community safe are based on data, be it the crime data that is available, the perceptions of campus safety of those who live and work in the campus, and/or studies that have been conducted on this topic. This is important as the policies and procedures need to be applicable to the specific campus. For example, based upon the results in Baker and Boland's (2011) study regarding the perception of campus safety at a small all-women's liberal arts college in Eastern Pennsylvania, the college implemented policy changes as well as changes in practice, and these new policies are overseen by student affairs. Some of the changes include adjusting the visitor policy; identifying points of contact to address conflicts that occur between students, between faculty, and between faculty and students; implementing new procedures regarding how student conduct and faculty infractions are tracked and faculty infractions; and putting

into practice new ways to track any inappropriate or disruptive behavior that occurs in the classroom (Baker & Boland, 2011). Changes such as these are reasons why more needs to be done with the data that is collected regarding not only perceptions of campus safety but also with the crime data that is available. Using the data that is available to either create or update policies will not only make college and university campuses safer, but also address perceived safety of the campus and make the campus community feel safer.

Pezza and Bellotti (1995) also looked at crime on college campuses and more specifically looked violent crime and its origins of the crime, its impact that it has on the campus, and the responses to campus crime. They note that the issue of violence on a college campus is due to the culture and environment that exists on the campus. They go on to say that, "The most powerful deterrent to campus violence is a residential community that finds any type of violence unacceptable and that encourages peer leadership in establishing standards of safety, security, cooperation, and student development" (Pezza & Bellotti, 1995). This finding supports that idea that administrators need to look at the crime data as well as the campus as a whole and not only assessing the crime that occurs, but also when developing policies and procedures to address campus crime.

In addition to studying the predictors of campus crime to inform policies and programming, Hart (2013) noted that it is important for institutions of higher learning to understand and better study student victimization. This is because a better understanding of student victimization will allow administrators to better address student concerns by implementing appropriate policies and educational programs that are tailored to that particular institution and the campus community (Hart, 2013). Stated another way the

policies and the educational programs will align with the culture and the environment that exists on that particular campus.

In his work, Hart (2013) discovered that those students who were victims of crime did not often seek assistance from organizations on campus that are designed to provide assistance to victims (Hart, 2013). Because of this, one specific point that is clear is that administrators who simply develop offices or organizations on campus to address victims or to provide victim assistance are not necessarily benefiting the college campus or the campus community as a whole. This is because if students are not using those resources, the monies dedicated to those resources could actually be allocated elsewhere to better help victims. If such organizations do exist on college campuses it is not enough just to announce that they exist but it is imperative for institution administrators and other members of the campus community to remind students to use them.

As noted previously, Jennings et al. (2007) found that there needs to be a concerted effort to address campus crime. In their article, the authors identified some policies and procedures that could be implemented to help address safety on campus as well as the perceived risk of victimization. They noted that an increase in effort from the entire campus community regarding raising awareness of campus crime and promoting prevention efforts is needed. To do this, colleges/universities can implement educational programs about campus crime, keeping in mind that these programs will not eliminate the crime that may occur, but that it could in fact help to reduce or prevent some of the crime (Jennings et al., 2007). Other efforts include some structural enhancements to the campuses. For example, adding security lighting to the campus, escort services, and if possible walkways that are centrally located within the campus. Other suggestions

include requiring key cards to enter buildings, especially the residential buildings; classes that detail how crimes are handled on the campus; and programs that focus upon drug and alcohol abuse (Jennings et al., 2007). These may not eliminate all crime, but these additional classes or structural changes can lead to greater perceived safety on the campus and can also result in less victimization, which should be the goal of all colleges/universities as it has been shown that feeling safe and reducing crime allows for better performance in the classrooms.

Ravalin and Tevis (2017), also provided policy suggestions as a part of their research study. These policy suggestions included the fact that there is a need to provide additional services to students on campus as a means to help deter crime on the campus. These services include increased psychological support and campus security; threat assessments teams; and safety awareness programs (2017). “By allocating additional funding to student services at campuses that have a higher percentage of Pell Grant recipients, colleges may be able to simultaneously decrease the impact of crime on students and increase student engagement and graduation and persistence rates” (Ravalin & Tevis, 2017, p. 36).

Lastly, Nobles et al. (2012) offered steps that colleges and universities can take to help ensure the safety of their students as their safety should be a priority of the administrators. One such suggestion was for the administrators to provide students, as well as their parents, with a true picture of the crime in the area, in addition to the information that is required by the Clery Act (Nobles et al., 2012). They argue that if crime maps were made available to the students and their families, this could assist in students finding safer neighborhoods in which to look for off-campus housing and it

could also provide students with information as to what areas around the campus are safe, or questionable, and this could be taken into account when deciding to go off campus for an evening (Nobles et al., 2012).

These are just some suggestions of polices/procedures that could be implemented by administrators regarding campus crime and campus safety. What is most important is that these policies take into account the predictors of campus crime as well as community members' perceptions of campus safety to ensure that the policies and procedures truly address the needs of the campus community.

Research Questions

In order to replicate the study that was conducted by Barnes (Barnes, 2009), the researcher focused on the following questions for this research study. The research questions were based upon those asked by Barnes in her 2009 study (Barnes, 2009) as well as those that were identified in the literature. To answer these questions, data from existing data sets, including the Campus Security and Data Analysis Cutting Tool; the Uniform Crime Reporting Program, the National Center for Education Statistics IPEDS, and the U.S. Census Bureau were used. More information about the data sets is provided in Chapter 3.

Research Question 1

What is the crime prevalence of participating campuses and their surrounding areas reported for 2019?

Research Question 2

What is the crime prevalence of participating campuses reported from 2019, broken down by campuses with campus police and/or sworn officer and campuses with campus

security departments?

Research Question 3

Which combination(s) of independent variables best predict the occurrence of future crime?

Chapter 3: Methodology

"[M]inimizing crime on college campuses is important not only for student safety, but to provide an environment where students are academically successful and engage socially" (Ravalin & Tevis, 2017, p. 28). As such, this study sought to determine the types of crimes that are occurring on Massachusetts' college and university campuses and what factors, as they relate to the college and university campuses, explain the occurrences of these crimes. That is, this study sought to not only identify types of campus crime, but also the predictors of those crimes. In addition, this study used the concept of social disorganization theory as a means to help explain the impact that crime can have upon a college campus. The concept of using social disorganization theory in this way will be adopted from the study conducted by Ravalin and Tevis (2017), who used social disorganization theory for the purposes of examining how crime impacts community college campuses within California. While the Ravalin and Tevis study focused solely on community colleges, this current study focused on both 2-year and 4-year institutions within the Commonwealth of Massachusetts. It is anticipated that this research will provide colleges and universities with information pertaining to what crimes may occur on the college campus based upon information about the campus itself as well as the surrounding area. This information can help frame effective crime prevention strategies and policies, because if the colleges and universities are aware of the predictors of the crimes, they can then establish trainings, prevention programs, and support services to help increase safety on the campus. To accomplish this, the study used quantitative research methodology in which descriptive statistics regarding the campus were provided and correlations were conducted to determine the relationship, if any, that

exists between the independent variables and the dependent variables. Social disorganization theory looks at social structures as well as elements of community organization, as factors that can have an impact upon crime, that is they are factors that can in fact mitigate the existence of crime (Ravalin & Tevis, 2017). These factors can be identified on college campuses via various data elements including Pell Grant recipients, number of students (further broken down by full-time and part-time students), first-year retention rates, where the campus is located, the type of campus security, ethnic heterogeneity on the campus, the ratio of students to faculty, the ratio of full-time to part-time faculty, and the clubs that exist on the campus (Ravalin & Tevis, 2017). This study relied upon secondary data from the following sources: the Campus Security and Data Analysis Cutting Tool, Integrated Postsecondary Education Data System (IPEDS), Federal Bureau of Investigation Uniform Crime Reporting program, and U.S. Census Bureau. The researcher did not collect the data, rather she used existing data sets to complete the research.

This chapter includes the following information: participants, stakeholders, instruments, procedures, data analysis, limitations, and expected findings.

Participants

This research study did not use participants, but rather consisted of secondary data analysis and used existing data sets including the Campus Security and Data Analysis Cutting Tool, Integrated Postsecondary Education Data System (IPEDS), Federal Bureau of Investigation Uniform Crime Reporting program, and U.S. Census Bureau. The focus of this research was data obtained from the above sources for 2019. The entire population of Massachusetts 2-year public, 2-year private, 4-year private, and 4-year public colleges

and universities that have police departments or safety departments and that receive federal funding were included in the study. Because the entire population was studied, a sampling method was not needed for this study.

Stakeholders

The first group of stakeholders for this research project are members of the campus communities, including administration, public safety/campus police, students, faculty, and staff. The information from this research project will be of interest to these stakeholders for different reasons. For members of the administration and campus security/campus police departments, the information can be used to help improve safety policies and procedures that are followed on campus, if needed. The information can also inform the administration if there is a need to hire additional staff in various areas of the campus, for example student life and/or public safety, to ensure the safety and well-being of those on the campus. Lastly, the administrators can use this information to ensure that the correct services are available on campus, such as public safety, health services, mental health services, etc. For students, faculty, and staff, the results of this research can provide them with information about the safety of the campus and a better understanding regarding the types of crimes that occur on college campuses and the characteristics of the campus that make it more or less susceptible to crime. This is important as it can help with modifying behaviors of the campus community, thus making them less susceptible to victimization.

Also included within the stakeholders are prospective students as well as parents of prospective students. Information from research such as this will be important to prospective students and their parents as it is information that can be used when deciding

where a student will spend the next four years of his/her life. The requirement of making crime data available to all comes from the Crime Awareness and Campus Security Act of 1990, which was amended in 1998 and renamed the Jeanne Cleary Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act). The renaming of the Act is in memory of Jeanne Clery, who was killed in her dorm room while she was a student Lehigh University (Janosik, 2001), which was discussed in Chapter 2.

The information contained in the findings from this research may also be of interest to the Massachusetts Department of Higher Education as it has commissioned two reports in the past regarding safety on college campuses within the Commonwealth of Massachusetts, with the most recent being in 2016. Although these reports did discuss campus crime and did propose best practices for both campus safety and campus protection, these reports did not identify predictors of campus crime nor did they provide a discussion of correlations between campus elements and the types of crimes that happen on college campuses (O'Neill et al., 2008; Robbins et al., 2016). More specifically, the report written in 2008 focused upon the safety provisions that should be put into place (O'Neill et al., 2008), while the second report, written in 2016, was a follow-up report that reviewed the progress in the implementation of the suggestions made in the first report (Robbins et al., 2016). The difference between these commissioned reports and this dissertation is that this dissertation sought to identify predictors of campus crime. Additionally, the reports commissioned by the Massachusetts Department of Higher Education focused on the public colleges and universities in the Commonwealth of Massachusetts, not all of the colleges and universities within the Commonwealth. The information from this current research, coupled with the results of

the two reports will provide information that can help make Massachusetts college campuses even safer.

Instruments

This research project did not require the researcher to create data collection instruments as this study used secondary data. Secondary data is data that is accessible from other sources thus removing the need for this researcher to create data collection. The data used in this research study was downloaded from the following organization and/or sources: the Campus Security and Data Analysis Cutting Tool; the Federal Bureau of Investigation Uniform Crime Reporting program; the National Center for Education Statistics IPEDS; and the U.S. Census Bureau. The data from the above sources was downloaded directly from the respective sites. The data were downloaded in a format that allowed for importation into statistical software, which allowed the researcher to run various statistical tests on the data. The decision to use secondary data was based upon the studies that were reviewed in the literature review as well as the fact that the data were accessible and available for public use. Because it is available for public use, the researcher did not need to obtain permission to use the data in the study.

To learn more about the colleges and universities and the surrounding areas, the researcher used data from IPEDS and the U.S. Census Bureau. The data from IPEDS provided the researcher with independent variables including student enrollment numbers, based upon the Fall 2019 headcount; number of male and female students; number of full-time and part-time students; level of study of the students, first-time full-time Pell grant recipients, age of students, part-time to full-time student ratio, student race/ethnicity, student to faculty ratio, number of full-time instructional staff – total and

broken down by male/female, number of staff (non-academic), race/ethnicity of instructional staff, institution size, institution size category, Carnegie classification, dormitory capacity, degree of urbanization of the school, sector of the institution, full-time and part-time retention rates, 4-year institution graduation rates, 2-year institution graduation rates, and whether the school was a member of the NCAA. The U.S. Census Bureau website was used to obtain additional information about the areas surrounding the colleges/universities included in this study. The data from the Census Bureau included the population, the percentage of females, the percentage of individuals living in poverty, the median household income, and the percent of the population 16+ who are in the civilian workforce, and the data was restricted to the areas surrounding the colleges/universities in the study. The researcher was interested in learning if this data has an impact upon the types of crimes that occur on college/university campuses. In other words, the researcher was interested in whether the information regarding areas surrounding the campus could serve as predictors of the crime(s) that may occur on the campus.

The dependent variables consisted of campus crime data and was grouped into three categories: total crime rate, personal/violent crime rate, and property crime rate and was obtained from the Campus Safety and Data Analysis Cutting Tool and the FBI's Uniform Crime Reporting program.

Data Cleaning

Prior to entering the data into SPSS, the researcher engaged in data-cleaning efforts. The following provides a brief discussion regarding the process followed for each data set that was used. One step that was used for all data sets was the removal of certain

schools from the study. The schools that were removed were those that were primarily graduate schools, as oftentimes graduate schools do not have residential students, nor do they have the other aspects of an undergraduate college/university that are variables within this study. Also, schools that do not receive Title IV funding were not included. There were four schools for which it was unknown if they had either campus police or campus security departments. Those schools remained in the dataset, but they were removed from the tables and analyses that were based upon the type of security offered on the campus.

Integrated Postsecondary Education Data System Data. The Integrated Postsecondary Education Data System (IPEDS) statistics are available online. Data for the Fall of 2019 was downloaded from the site. The data from IPEDS included student enrollment numbers, based upon the Fall 2019 headcount; number of male and female students; number of full-time and part-time students; level of study of the students, first-time full-time Pell grant recipients, age of students, part-time to full-time student ratio, student race/ethnicity, student to faculty ratio, number of full-time instructional staff – total and broken down by male/female, number of staff (non-academic), race/ethnicity of instructional staff, institution size, institution size category, Carnegie classification, dormitory capacity, degree of urbanization of the school, sector of the institution, full-time and part-time retention rates, 4-year institution graduation rates, 2-year institution graduation rates, and whether the school was a member of the NCAA. This particular data was extracted from the IPEDS data set as it is the data that is, based upon the literature as well as theory, related to campus crime. Little data cleaning was needed for this dataset. That being said, it is important to note that IPEDS has much more data than

was needed for this study. The website allows researchers to select specific variables from its dataset, and that is what this researcher did. The researcher considered the data that was needed for this study and selected that particular data from the overall dataset. IPEDS data allows researchers to select only Title IV schools and to narrow down schools to specific states. This was the first step that was followed to ensure that only Massachusetts schools were included and as noted above only those schools receiving Title IV funds were included. From there the data noted above was located within the dataset and included in the data that was downloaded for this study.

Clery Act Data. The Clery Act data is available online form the Campus Safety and Security website. Data for 2019 was downloaded from the site into an Excel document. The data on the site is reported in four main categories, those being on-campus crimes, crimes occurring in the residence halls, crimes occurring on public property, and crimes occurring on non-campus property. The data used for this study was that of on-campus crimes. This decision was made because there is the potential for different campus security/police departments to report crimes that occurred either on public property or on non-campus property differently. Another factor that the researcher had to address was how to approach schools that have more than one campus. The decision was made to count only the main campus unless the other campuses reported their data separately from the main campus. One example of this is the schools within the University of Massachusetts system. Although the University of Massachusetts Amherst is the flagship and main campus, the other campuses, such as the University of Massachusetts Lowell and the University of Massachusetts Boston report their own statistics. For those colleges that simply have satellite campuses, only the data from the

main campus was used. This is important to note as the crime survey requires that institutions report their crime data for the main campus only.

The data from the Clery Act, as noted above, focused on the on-campus crimes and more specifically included the total number of offenses reported; the total number of property offenses reported, and the individual offenses that make up property crime; and the total number of violent/personal criminal offenses reported, and the offenses that make up personal/violent criminal offenses. The overall categories of total criminal offenses, property offenses, and personal/violent offenses were eventually converted to reports per 100 students to be able to better compare across campuses.

Uniform Crime Reporting Program Data. Only 44 of the colleges/universities included in this study reported data to the Federal Bureau of Investigations Uniform Crime Reporting Program (UCR). This data required very little cleaning. The data used from this data set included the total number of offenses that were reported; the total number of violent crimes reported; and the total number of property crimes reported. The data set also included subcategories within violent crimes and property crimes, however, since the numbers reported were small, the analysis conducted focused on the categories of violent crimes and property crimes as opposed to focusing on the individual crimes that make up each of these categories.

Additional Sources of Data. In addition to the data sources identified above, the following are some additional sources of data that were collected and used in this study. Massachusetts crime data for the cities/towns in which the colleges/universities sit was obtained from the Uniform Crime Reporting program available from the Federal Bureau of Investigations. The total number of crimes reported, and the number of

personal/violent crimes and property crimes were included in the download. The researcher also included the total crimes for the subcategories within personal/violent crime and property crime. Just as with the Clery data, the data from the UCR was converted to rates to better allow for comparison across campuses.

The U.S. Census Bureau website was used to obtain additional information about the areas surrounding the colleges/universities included in this study. The data from the Census Bureau included the population, the percentage of females, percentage of individuals living in poverty, the median household income, and the percent of the population 16+ who are in the civilian workforce, and the data was restricted to the areas surrounding the colleges/universities in the study. Some of the surrounding areas did not have Census data readily available on the website, and as such, those areas were not included in some of the analyses.

Procedures

Following the approval of the research proposal, the researcher submitted the proposal to IRB for approval of the research project. Once approval was obtained, the researcher began collecting data from the identified datasets and extracting from the datasets the relevant data points for the research study. The data from the Campus Security and Data Analysis Cutting Tool, IPEDS, Federal Bureau of Investigation Uniform Crime Reporting program, and U.S. Census Bureau were available on-line and were downloaded from those websites. This data is publicly available, and as such, there was no need for the researcher to obtain permission to use the data for this study. Once the data was downloaded, the researcher reviewed the data and added any needed headings to the data sets, cleaned the data as needed, and then merged the data into one

Excel spreadsheet. Once the data was clean and entered into the Excel spreadsheet, the researcher imported the data into SPSS for analysis.

Research Design

The design to be used in this study consists of nonexperimental research utilizing a correlational approach with a predictive design to address research question #3. Research questions 1 and 2 will utilize a similar research approach with an explanatory design. The dependent variable, campus crime, will be measured using 2019 data. Since the data collection was a snapshot of campus crime during that specific time period, a cross-sectional research design was used. Although cross-sectional design did not allow the researcher to determine cause and effect, it did provide correlates and the results were used to identify areas of future research. Additionally, cross-sectional studies are cost-effective and can be conducted relatively fast (Setia, 2016). This type of research design does have the limitation that it cannot capture change over time because the data being used is simply a snapshot of a particular time. Cross-sectional design can be prone to biases as well and as such, researchers must be careful regarding how the associations as well as the direction of associations are interpreted (Setia, 2016).

Unit of Analysis

Because this study focused on colleges and universities in the Commonwealth of Massachusetts, the unit of analysis for this study was at the organizational level. All colleges and universities within the Commonwealth that received federal funding and had either campus security or campus police departments were included in this study. As such, the entire population was included therefore removing the need for sampling procedures to be conducted.

All of the data was then entered into SPSS so that the appropriate statistical tests could be run. Once the data was entered into SPSS the statistical analysis was conducted. Following the statistical analysis, the researcher reviewed the results and began to address the research questions.

Data Analysis

For this research study, the entire population of Massachusetts 2-year public, 2-year private, 4-year public, and 4-year private institutions of higher learning that received federal funding and had security and/or police departments were included. These same institutions represented the target population for this study. Because all of the institutions described above were included in this study, there waw no sample, rather the above represented the entire population. As such, there was no need for sampling procedures for this study. Additionally, there was no need for those statistics that are used with sampling such as confidence levels, probability, and error. What was focused upon is the extent to which each independent variable impacted the dependent variables.

To address the contextual/demographics of the colleges and universities that were included in this research study; the campus crime rates and the types of crimes most and least reported to campus officials; and the demographic characteristics of the surrounding communities, the researcher used measures of central tendencies. The measures of central tendencies allowed the research to provide the frequencies with which each variable existed in the data as well as the corresponding percent. The researcher provided the mean of certain data, when appropriate. The researcher used measures of central tendencies and frequencies to provide the breakdown of various characteristics of the population, for example student characteristics including gender, race/ethnicity, age;

faculty and staff characteristics including gender, race/ethnicity, and staff versus faculty; and school characteristics including 2-year or 4-year, private or public, commuter or residential (or both), member of the NCAA, campus security or campus police, undergraduate or both undergraduate and graduate; first-year retention rates; graduation rates; and the number of full-time versus part-time students. The descriptive data also included information regarding the ratio of part-time to full-time faculty; the ratio of student to faculty; and the types of crimes that happen both on campus as well as off campus in the surrounding communities. The data also included the frequency with which the crimes occur.

To identify which variables were to be included in the multiple regression analysis in order to address research question 3, the researcher conducted bivariate correlations. As a means to analyze the multi-variate question regarding which combination of the independent variables will best predict future crime on college campus, the researcher determined the percentage of variance and performed a multiple regression. “Regression analyses are a set of statistical techniques that allow one to assess the relationship between one dependent variable (DV) and several independents (IVs)” (Tabachnick & Fidell, 2019). Multiple regression was the appropriate approach to answer this research question as there were multiple independent variables that were included in this research project to see if there were specific characteristics of the college campus or surrounding community that led to greater occurrences of crime on campus. There are, however, limitations to regression analysis. Although the regression analysis can identify a relationship, it is not possible to imply that the found relationship is causal (Tabachnick & Fidell, 2019). Another limitation or problem associated with multiple regression is the

selection of the independent variables and the dependent variable(s) and how it is that they should be measured (Tabachnick & Fidell, 2019).

Lastly, to analyze the relationship between the campus crime rates and the factors that were identified as measures of social disorganization – social structure of the campus and community organization of the campus – this researcher conducted a bivariate correlation. This analysis was performed to see if a relationship existed between the independent variables (total crime rate, personal/violent crime rate, and property crime rate) and the number of Pell Grant recipients (a measure of poverty), first-year retention rates (a measure of residential mobility), part-time status (a measure of poverty), ethnic heterogeneity (a measure of ethnic heterogeneity), number of students at the college/university/enrollment (a measure of population size), the student to faculty ratio (a measure of frequency of unsupervised peer groups), the full-time to part-time faculty ratio (a measure of frequency of unsupervised peer groups), and the number of clubs on campus (a measure of organizations). These above data categories were taken from Ravalin and Tevis (2017) as way to measure social disorganization as it relates to crime on college campuses. The resulting statistically significant correlations were then used in the regression models to determine if any of the campus proxies for the elements of social disorganization theory can be identified as predictors of campus crime.

As noted previously, the researcher imported the combined data into SPSS. Once this step was done, the researcher used SPSS software to calculate the results of each of the aforementioned statistical tests. Once the tests were run, the results were analyzed, and the researcher began to further interpret the data and prepare the discussion.

Expected Findings

The researcher expected to find similarities among the data that was collected from the various sources and the literature. The researcher was also expecting to identify certain aspects of college campuses that lead to and can thus act as predictors of campus crime. Some of those aspects include the location of the campus, urban versus rural; the size of the residential population; and the make-up of the student body, including gender, race, ethnicity, undergraduate and graduate populations, and resident versus commuter. The researcher also expected to find a relationship between campus crime rates and the measures of social disorganization theory.

Chapter 4: Results

Introduction

This study was conducted to help identify predictors of campus crime. To do this, data regarding the student population, faculty and staff, the college environment, and the areas surrounding the campuses were collected from existing data sources, the data was then cleaned, and then entered into SPSS. The final step was to conduct the analysis to determine what, if any, factors predict campus crime. The number of colleges/universities included in this study was 88. Although there are more than 88 colleges and universities in Massachusetts, not all of them met the criteria for this study, including being a Title IV school, having at least some undergraduate students, and having either a campus police department or campus security office. There are some data that contain less than 88 schools in the analyses, and that is because there are some data points that were not reported by all of the schools in the population.

The purpose of Chapter 4 is to provide information regarding the findings that are the result of the data analysis. This chapter includes descriptive statistics for the independent variables in the analysis, correlational analyses, and lastly multiple regression models for interpretation.

Descriptive Statistics

The descriptive statistics were included to provide a foundation regarding the various variables that were used in the analysis. The descriptive statistics include information pertaining to the students who attend the colleges and universities in Massachusetts, the faculty and staff at the colleges and universities, and the colleges and universities themselves. The data used was from the Fall 2019 cohort. This year was

chosen as it was prior to the pandemic hitting and most of the 2019-2020 academic year progressed as normal. The researcher did not use later data as the thought was that the crime rates as well as the student demographics would not provide an accurate picture of the crime or the campuses due to the impact the pandemic had on higher education. This section also has descriptive data pertaining to the areas that surround the participant colleges/universities.

The researcher did not use all of the following descriptive statistics to respond to the research questions. Some of the data was provided to give the reader an idea of the higher education landscape that existed in Massachusetts. Again, this study is based upon the study conducted by Barnes (2009), and as such much of the data used in the analysis mirrors that of Barnes's study.

Student Demographics

Females make up 56.99% of the student population. The age of the students was broken down into two categories, under 24 years of age and over 24 years of age. There was a total of 317,356 students under the age of 24 included in this study while the number of students over the age of 24 totaled 152,403.

With regard to the numbers pertaining to race of the students making up the student population, it is important to note that the totals will not be equal to the total number of students as the researcher only included those students who identified as one race and did not include those who did not self-identify nor those who identified as two or more races. The students included in the race descriptives make up 78.69% of the overall student population in the study. The highest percentage of students identified as white (50.83%), the second highest percentage was Hispanic (11.42%), next was Asian

(8.15%), and then Black or African American (8.05%). The final two were very small percentages of the population with American Indian or Alaskan Native at .16% and Native Hawaiian or Other Pacific Islander at .08%. Because of the percentages, the researcher opted to combine Hispanic, Asian, Black or African American, American Indian or Alaskan Native, and Native Hawaiian or Other Pacific Islander into one group - Minority Students for the analyses. When this happens, the percentage of minority students is 27.86%. Again, this number does not include the students who did not identify their race or those who identified as more than one race.

Faculty/Staff Demographics

For the 2019 reporting year, there were a total of 23,846 full-time instructional and non-academic staff members employed by the colleges/universities included in the study. The female full-time instructional staff made up 47.5% of the total full-time instructional staff reported. To be more descriptive of the faculty, just as the race/ethnicity was collapsed for the student body, so too was the race/ethnicity of the full-time instructional staff collapsed. The result was 17,330 (72.67%) of the instruction staff being white and 4,520 (18.95%) of the staff being minority. The make up of the minority staff includes those individuals identifying as either Hispanic, Asian, Black or African American, American Indian or Alaskan Native, or Native Hawaiian or Other Pacific Islander. The instructional staff who identified as more than one race/ethnicity were not included as those numbers were small and because the researcher wanted to mirror the category of races to those presented for the student population.

Additional demographic data collected about the full-time instructional staff employed by the college/universities in this study are the ranks of the professor. The

rankings include professor, associate professor, assistant professor, instructors, lecturers, and no academic rank. Three schools did not report this information, as such, the N for this set of data is 85. The rank of professor made up the largest portion of the population with a total of 8,048 (33.75%) reported, followed by associate professor at 5,567 (23.55%), and then assistant professor at 5,454 (22.87%). There are three other rankings as noted above, and these rankings made up smaller percentages of the overall full-time faculty pool: lecturers (2,262; 9.49%); no academic rank (1,344; 5.63%); and instructors (1,171; 4.91%). Lastly, data was collected about the non-academic staff. The total number of staff (N = 127,894) was collected to be used in the analyses.

College/University Demographics.

The descriptive statistics also provide information regarding the various college and university campuses that existed at the time in Massachusetts. Since 2019, Massachusetts has seen some colleges/universities close. These schools were not removed from this study as they were fully operational at the time of the data collection. The information about the colleges and universities included whether the campus was located in an urban, suburban, or rural area; whether there were residential students; whether the campus had campus police or campus security/public safety office; whether the college/university was a member of the NCAA; the number of full-time and part-time students; whether the school was primarily undergraduate, graduate, or both; the first-year retention rates and the graduation rates; the student to faculty ratio, the number of fraternities/sororities (non-academic), and the number of organizations.

The location and the sector of the institution (more specifically whether the school is public/private, for-profit/not-for-profit, and/or 2-year or 4-year), as well as the

Carnegie classification enrollment profile were the first demographics run regarding the colleges/universities in the study. The location of the college/university, or as it is described in the IPEDs data the degree of urbanization, is broken down into the following categories: large city, midsize city, small city, large suburb, midsize suburb, fringe town, distant town, and fringe rural. A majority of the schools were identified as being located in large suburbs (43.2%) followed by large cities (22.7%). The greatest number of colleges/universities in this study are categorized as private not-for-profit 4-year or above schools (63.6%). This is followed by public 2-year schools (18.2%). The schools are somewhat equally distributed across the classifications, which include exclusively undergraduate two-year; exclusive undergraduate four-year; very high undergraduate; higher undergraduate; majority undergraduate; and majority undergraduate. The highest percentage of schools are classified as higher undergraduate (22.7%). More specifically regarding the schools pertains to whether they are residential or commuter schools. The largest percentage of schools are classified as four-year, small, highly residential schools (25.0%). What is also important to note is that 67 (76.1%) of the campuses in this study provide on-campus housing.

Additional information pertaining to the campuses themselves that have been included in the study pertain to campus safety officers and student engagement opportunities. These have been included as they were identified in studies that were reviewed in the literature review. More specifically, the data includes included whether the campus had a campus safety office or a campus police department, whether the school was a member of the NCAA, the number of Pell grant recipients, the average number of organizations on campus, and if the campus has a Greek system. For the

colleges/universities in this study, the researcher found that approximately 70% of the campuses had a campus police department or at a minimum sworn police officers on campus, while approximately 25% had campus safety offices. For four of the colleges/universities, the researcher was not able to determine whether there was either a campus safety office or a campus police department. The data regarding whether the school is a member of the NCAA indicated either yes or there was an implied no by the data collecting entity (IPEDS). According to the data, 54 (61.4%) of the schools are members of the NCAA, that is 61.4% of the colleges/universities have some type of collegiate athletic team. The division of the college was not noted, simply that the college did have some teams that competed on the collegiate level. Most of the schools in the study had student organizations on campus. Eighty-four of the colleges/universities indicated some type of student organization on its website. These organizations could be either social (excluding the Greek system) or academic. The average number of student organizations was 108 with an organization-to-student ratio of 25:1. Lastly, only 18 (20.5%) of the schools indicate that there is a Greek system (social fraternities and sororities) on their campuses. Most of the campuses indicate that those social organizations are not formally recognized on the campus.

From the existing studies, it was apparent that researchers used the data points pertaining to first-year retention rates as well as graduation rates to determine if either of these have an impact upon campus crime. The mean retention rate for full-time students was 76.21 while the mean retention rate for part-time students was 48.31. Regarding graduation rates, the graduation rate for 4-year institutions, within 150% of normal time was 579.82, while the graduation rate for 2-year institutions, within 150% of normal time

was 118.78. In addition, to these rates, this researcher also looked at the number of full-time and part-time students. The total number of full-time students included in the dataset was 336,839, and the total number of part-time students included in the dataset was 133,731. The mean student-to-faculty ratio for the schools in the study is 12.22 students to each faculty member.

Each of these data points were collected to identify whether the various characteristics of a college/university have an impact or can help to predict campus crime. These data points were taken based upon the studies that have been conducted before in various other states as well as in national studies.

Surrounding Area Demographics

When looking at the characteristics of the communities surrounding the campus, the independent variables included percent of individuals employed in the civilian workforce (ages 16 and over), the percent of individuals living in poverty, the percent of females, the median household income, and the crime rates in those communities. For all of the cities and towns that are included in the category of surrounding area, 65.38% of the 16+ population are in the civilian workforce, 13.48% of the population is in poverty, and 51.73% of the population is female. The final data point is that of estimated median household income and it is $79,104.82. This information is provided for informational and foundational purposes to help put into perspective the surrounding areas. These data will also be used to respond to the research questions below.

Analysis

Research Question 1

What is the crime prevalence of participant campuses and their surrounding areas

reported from 2019?

The crime data was collected from the Campus Safety and Security website as well as the FBI Uniform Crime Reporting program. Table 1 provides the total crimes reported to each of the above data sources for the colleges/universities included in this study. The data in the table was collapsed into the categories of total crime reported, personal/violent crime reported, and property crime reported. As shown in the table, the highest number of crimes falls within personal/violent crime for Clery Act data and within property crime for UCR data. The number of crimes by individual crime category is provided in Table A1 in Appendix A. The highest reported crime category for Clery Act data was forcible sex offenses at 448, while the highest reported crime category for UCR data was larceny-theft at 2,199. There are two important factors that need to be shared regarding this data. The first is that for the UCR data, larceny/theft is included in the property data category while it is not in the Clery Act data. The second is that for the Clery Act data, rape, fondling, incest, and statutory rape were collapsed into one category, forcible sex offenses. Additionally only 44 of the 88 schools reported their crime data to the UCR, so this to has an impact upon numbers in the table. All 88 schools in the studty reported crime data in accordance with the Clery Act. As such, these factors can and do account for some of the discrepancies between the datasets. Even though the UCR property data contains more detailed information by including larceny/theft, this researcher decided to use the Clery Act data in the analysis as it is a more complete data set with regard to the number of colleges/universities that provided crime data to that entity.

Table 1

Campus Crimes Reported in Accordance with the Clery Act and the UCR

	Sum
Clery Act Total	869
Clery Act Personal/Violent Crime	517
Clery Act Property Crime	352
UCR Total	2536
UCR Violent Crime	140
UCR Property Crime	2396

Table 2 provides the total crimes for the surrounding cities that reported their crime to the FBI Uniform Crime Reporting data set. The data in the table was collapsed into the categories of total crime reported, personal/violent crime reported, and property crime reported. As shown in the table, the highest number of crimes falls within personal/violent crime. The number of crimes by individual crime category is provided in Table A2 in Appendix A. The highest reported crime category was larceny-theft at 32,177. Not all surrounding cities reported their crime to the FBI, and as such, the crime totals presented in these tables will not be a true accounting of the crime that occurred in those areas.

Table 2

Surrounding City Crimes Reported in Accordance with the UCR

	Sum
City Total Crime	54,493
City Personal/Violent Crime	12,927
City Property Crime	41,566

Research Question 2

What is the crime prevalence of participant campuses reported from 2019, broken down by campuses with campus police and/or sworn officer and campuses with campus security departments?

Table 3 provides the total crimes contained with the Campus Safety and Security data and the UCR for the colleges/universities included in this study, broken down by campuses with campus police and/or sworn officers and campus security departments. The data in the table was collapsed into the categories of total crime reported, personal/violent crime reported, and property crime reported. As shown in the table, the highest number of crimes for campuses with campus police departments falls within personal/violent crime for Clery Act data and property crime for UCR data, while for those with campus security departments, the highest number falls within personal/violent crime for Clery Act data and property crime for UCR data. The number of crimes by individual crime category for either campus police department or campus security department is provided in Table B1 in Appendix B. The highest reported crime category for campuses with campus police departments for Clery Act data was forcible sex offenses at 394, while the highest reported crime category for UCR Data was larceny-theft at 2,161. For those with campus security departments, the highest reported crime category for Cleary Act data was forcible sex offenses at 53, and for UCR data it was larceny-theft at 38. It is important to note that the Table B1 does not include those schools for which it could not be determined if there was a campus police department or a campus security department. The total number of schools for which data is missing is 4, and this explains any discrepancy in the crime totals between Table 3 and Table B1.

Table 3

Campus Crime Reported in Accordance with the Clery Act and UCR by Campus Safety Type

	Campus Safety or Police Department	
	Public Safety Office	Campus Police
	Sum	Sum
Clery Act Total	101	763
Clery Act Personal/Violent Crime	65	450
Clery Act Property Crime	36	313
UCR Total	53	2483
UCR Personal/Violent crime	1	139
UCR Property Crime	52	2344

Research Question 3

Which combination(s) of independent variables best predict the occurrence of future crime on college campuses within Massachusetts?

To answer this question, it is first necessary to discuss the tests that were conducted and why. Correlational analyses were run to determine if there was a correlation between the independent variables and the dependent variables. Once the significant correlations were identified, regression analyses were conducted. Prior to running any statistics, the variables were broken down into four different categories, student factors (total number of male students, total number of female students, minority students, and total student population under the age of 24); faculty/staff factors (total minority instructional staff, grand total of staff – non-instructional, grand total of all instructional staff, grand total of male instructional staff, and grand total of female instructional staff); college/university factors (Carnegie class enrollment, sector of

institution, size and setting of the institution, degree of urbanization, institute size, number of fraternities and sororities, 4-year institution graduation rate, 2-year institution graduation rate, full-time retention rate, part-time retention rate, full-time student total, part-time student total, and whether the school was a member of the NCAA); and surrounding city factors (percent of persons living in poverty, percent of population 16+ who are in the civilian labor force, estimated household median income, percent of females in the population, the personal/violent crime rate for the city, and the property crime rate for the city). The researcher further divided the data into two groups, those colleges/university with campus police and/or sworn officers and those with campus security offices. This final division allowed the researcher to see if the existence of campus safety or campus police has an impact upon the correlation between the independent variables and the dependent variables.

Once the significant correlations to the dependent variables were determined, the next step was to determine if there exist predictors of campus crime. This was done by conducting regression analyses. For this study, the researcher opted for the standard regression, which allows for all of the independent (or predictor) variables to be entered into the equation. For the two groups, institutions with campus policed and/or sworn officers and institutions with campus security, three sets of regression models were run - relating to the total crime rate, the personal/violent crime rate, and the property crime rate. The results from these statistical tests informed the researcher which, if any, of the independent variables can be said to be predictors of campus crime.

Prior to the results of the regression being analyzed, the researcher examined the data to ensure that issues with multicollinearity did not exist. This step is important as

with multiple regression high correlation among the independent variables can impact the regression results. If any did exist, then bivariate correlations were run to determine which independent variables were highly correlated with each other. The researcher then identified which variable had a higher correlation with the dependent variable. The independent variable that was more highly correlated to the dependent variable was the one that remained in the equation and the other variable was removed. At this point the regression was run again, and multicollinearity checked, and if there was no issue, the researcher continued on with the regression analysis.

Correlations. To analyze whether there was a relationship between or among the independent variables the total crime rate, personal/violent crime rate, and property crime rate based upon the Clery Act statistics, the researcher conducted correlational analyses. These correlational analyses were run to determine which of the independent variables should be included in the regression analysis.

Table 4 provides the correlations matrix for those independent variables that were statistically significantly related to the dependent variables, and focused upon those colleges/universities that had campus police departments and/or sworn officers. The 2-year institution graduation rate was negatively correlated with each of the dependent variables. This indicates that a 2-year institution with a high graduation rate is likely to experience a lower total crime rate as well as lower personal/violent and property crime rates. The total number of part-time students was also negatively correlated with each of the dependent variables. As such, those schools with a greater total number of part-time students are also likely to experience lower crime rates (total, personal/violent, and property). The number of minority students was negatively correlated to personal/violent

crime rate. These results indicate that as the number of minority students on the college/university campuses that are represented in this study increases, the campuses are likely to experience lower personal/violent crime rates. The only variable that had a postive correlation with any of the dependent variables was that of whether the school was a member of the NCAA. This variable was positively correlated with the total crime rate as well as the personal/violent crime rate. This means that those colleges/universities in this study that are members of the NCAA are likely to have an increase in the total crime rate as well as the personal/violent crime rate on their respective campuses. None of the variables associated with the faculty and staff, nor the surrounding cities were found to be significantly correlated with any of the dependent variables.

By identifying which independent variable was statistically significant, the researcher was able to identify which variables should be retained for the regression analysis and which needed to be discarded. In other words, the results of this correlation allowed the researcher to exclude variables from the regression analysis. The variables that were not significantly correlated with the dependent variables were not included in the regression analysis.

Table 4

Correlations for Student and Campus Variables: Campus Police

		Total Clery Crime Rate	Personal/ Violent Crime Rate Clery Act	Property Crime Rate Clery Act	Minority Students	Part-time Students Total	2-yr institutions Completers within 150% of normal time total)
Personal/Violent Crime Rate Clery Act	Pearson Correlation	.952**					
Property Crime Rate Clery Act	Pearson Correlation	.927**	.832**				
Minority Students	Pearson Correlation	-.209	-.252*	-.155			
Part-time Students Total	Pearson Correlation	-.297*	-.354**	-.257*	.834**		
2-yr institutions Completers within 150% of normal time total)	Pearson Correlation	-.640*	-.642*	-.558*	.319	.569*	
Is the School a member of the NCAA	Pearson Correlation	.270*	.313*	.230	.010	-.210	.c

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

The researcher used the data from Table 5 to calculate the coefficient of determination for each of the variables. Based upon the calculations, it can be said that 40.9% of the variance in the total crime rate can be explained by the 2-year institution graduation rate, that 8.8% of the variance in the total crime rate can be explained by the total number of part-time students, and 7.29% of the variance can be explained by whether or not the college/university is a member of the NCAA. Regarding the personal/violent crime rate, 41.2% of the variance in the personal/violent crime rate can be explained by the 2-year institution graduation rate, 12.5% of the variance can be explained by the total number of part-time students, 6.4% of the variance can be explained by the number of minority students, and lastly, 9.80% of the variance in the personal/violent crime rate can be explained by whether the college/university is a member of the NCAA. When looking at the property crime rate on Massachusetts

college/campuses, and the corresponding results in Table 4, one can determine that 31.1% of the variance in the property crime rate can be explained by the 2-year institution graduation rate and 6.6% of the variance can be explained by the total number of part-time students. While many of these variables explain only a small percentage of the variance in the dependent variable, they were maintained and included in the regression analysis as they did demonstrate that they did have an impact and the correlations were statistically significant.

Table 5 provides the correlations matrix for the independent variables that were statistically significantly related to the dependent variables as they related to campuses with campus safety departments. What can be seen from these numbers is that as the size and setting of the college/university change so too will the total crime rate, the personal/violent crime rate, and property crime rate. The correlation was positive, so if the independent variable increases the various crime rates will increase as well. The numbers in the table indicate that a 4-year institution with a high graduation rate is likely to experience higher total crime rate and personal/violent crime rates as these correlations were positive. The capacity of the dormitories was positively correlated to both the total crime rate and the personal/violent crime rate. As the capacity of the dorms increase, college/universities can expect the total crime rate and the personal/violent crime rate to also increase. The final variable that had a positive correlation with any of the dependent variables was minority instructional staff. This variable was correlated with the personal/violent crime rate, meaning that as the number of minority instructional staff increases, campuses can potentially see an increase in the personal/violent crime rate.

One independent variable was negatively correlated with the two of the

independent variables. The percent of individuals in the surrounding area who are 16+ years of age and in the civilian workforce was negatively correlated with the total crime rate and the property crime rate. This means that as the percent of those 16+ in the civilian workforce increases, the colleges/universities in the surrounding areas could see a decrease in campus crime. None of the variables associated with students were significantly correlated with any of the dependent variables.

Just as the results of the correlations for colleges/universities with campus police and/or sworn officers allowed the researcher to remove variables from the regression analysis, so too did the results of the correlation associated with colleges/universities that have campus security departments. Those variables that did not have a significant correlation to the dependent variables were excluded from the regression analysis.

Table 5

Correlations for Faculty, Campus, and Surrounding Areas Variables: Campus Security Department

		Total Clery Act Crime Rate	Personal/ Violent Crime Rate Clery Act	Property Crime Rate Clery Act	Size and Setting	Dormitory Capacity	4-year institutions Completers within 150% of normal time	Is the School a member of the NCAA	Minority Instructional Staff
Personal/Violent Crime Rate Clery Act	Pearson Correlation	.898**							
Property Crime Rate Clery Act	Pearson Correlation	.872**	.567**						
Size and Setting	Pearson Correlation	.560**	.491*	.502*					
Dormitory Capacity	Pearson Correlation	.546*	.537*	.404	.677**				
4-year institutions Completers within 150% of normal time	Pearson Correlation	.524*	.509*	.407	.646**	.984**			
Is the School a member of the NCAA	Pearson Correlation	.447*	.598**	.170	.688**	.504	.536*		
Minority Instructional Staff	Pearson Correlation	.409	.461*	.257	.241	.753**	.763**	.271	
In civilian labor force, total, percent of population age 16 years+	Pearson Correlation	-.436*	-.264	-.522*	-.324	-.541*	-.582*	-.302	-.519*

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Multiple Regression. Based upon the results of the correlational analyses, those variables that were found to be statistically significantly related to campus crime were included in the regression analyses. The results of the regression analyses helped to answer which combination(s) of independent variables best predict the occurrence of future crime, as the results identified those variables that were the best predictors based upon those that are correlated with campus crime.

Regression Models for Colleges/Universities with Campus Police Departments and/or Sworn Officers. With reference to those campuses with campus police departments and/or sworn officers, the variables that were identified as significantly correlated with the crime rates, and as such included in the initial regression analysis, are

included below. Next to each variable are the dependent variables to which they were significantly correlated.

- 2-year institution graduation rates (Total Clery Crime Rate, Personal Crime Rate, and Property Crime Rate)
- Total number of part-time students (Total Clery Crime Rate, Personal Crime Rate, and Property Crime Rate)
- Member of NCAA (Total Clery Crime Rate, Personal Crime Rate, and Property Crime Rate)
- Minority Students (Personal Crime Rate)

Of importance is that for each of the regressions run, the member of the NCAA variable was removed from the analysis based upon a warning provided by SPSS indicating that the variable was either a constant or had missing correlations. Therefore, despite there being a significant relationship based upon the correlational analyses, the variable was not included in these analyses.

The first step taken with each regression model was to look at the results of the Durbin-Watson test to identify possible autocorrelation, which can impact regression analysis (Laerd Statistics, 2015). The Durbin-Watson test results for each of the regression models were around the 2 level, with the highest being 2.7. Based upon this, it was determined that there was an independence of residuals.

The next step taken was to look at the results for the collinearity statistics. It is important to check for multicollinearity as this is the result of having “two or more independent variables that are highly correlated with each other” (Laerd Statistics, 2015). The researcher noted that for the first run of the regression models, only one model had a

possible issue with multicollinearity. The regression model included the dependent variable of personal/violent crime rate and the independent variables of 2-year institution graduation rates, minority students, and total number of part-time students. There were two independent variables that were of concern, minority students, with a Tolerance value of .091 and total number of part-time students with a Tolerance value of .068.

Once it was determined that there may be an issue with multicollinearity, the researcher looked at the Collinearity Diagnostics table. The data for this current research indicated a problem with collinearity. On the Collinearity Diagnostics table, Dimension 4 presented an Eigenvalue of .009 and a Condition Index of 20.04. Additionally, the variance proportions also indicated a concern regarding collinearity in that both the minority students variable and the total part-time students variable had values of .92 and .99 respectively. These numbers indicate a concern for collinearity.

One final check was performed to help identify which variable should be removed from the equation to address the collinearity issue, and that involved running a bivariate correlation for the independent variables included in this equation. Appendix C contains the correlation matrix that shows the strong, statistically significant correlation between total part-time students and minority students ($r = .834$). To determine which variable should be removed, the researcher then looked at the correlation between each of the variables and the dependent variable. As shown in the table, total part-time students ($r = -.354$) has a stronger correlation with the dependent variable than minority students ($r = -.252$), and as such, the minority students variable was removed from the equation. This left two variables in the equation and those were 2-year institution graduation rates and total part-time students.

Following the multicollinearity check, the first regression model that was run examined whether the 2-year institution graduate rates and/or the total number of part-time students can be considered predictors of the total crime rate at those colleges/universities that have a police department and/or sworn officers. This first model discussion will provide detailed explanations of the elements of the model to assist the reader in understanding what was tested and the results. The subsequent discussions will provide the data and the model but will not provide the detail about what each number of the model tells the reader.

The Model Summary indicates the R, which is the measure of the strength of the relationship between the independent and dependent variables. In this model, the R is .677. The R^2 for this model is .458, which means that 45.8% of the variance that exists in the total crime rate can be explained by the independent variables or 2-year institution graduation rate and total number of part-time students.

It is on the ANOVA table that one can see the significance of the overall regression model. That is, this table can help determine if the model is statistically significant at the .05 level. For this model, the significance is .047, which is less than .05, thus indicating that the model is statistically significant. To continue the model must be significant. Since the F score is 4.232 and is statistically significant at .047, the analysis could move forward.

On the coefficients table, the significance level for each of the independent variables should be at the .05 level. For this model, the t-score for the total number of part-time students was -.948 and with a significance level of .365, and the t-score for the 2-year institution graduation rate was -1.723 with a significance level of .116. These

numbers indicate that neither of these independent variables was significant. On this same table, the standardized coefficients indicate the strength of the effect of each of the independent (predictor) variables to the dependent variable. When looking at this variable, one should look at the absolute value of the value and know that the higher the value, the stronger the effect. In this model, the beta score for the total number of part-time students is -.268 and the beta score for the 2-year institution graduation rate is -.487. Based upon these numbers, the 2-year institution graduation rate has a stronger effect on the total reported crimes per 100 students than does the total number of part-time students. The final column reviewed on this table is the unstandardized coefficient column. The unstandardized coefficient provides information regarding the parameter values for the projection. The constant for this model has a value of .224 and is significant. Also included are the slopes for the independent variables included in the regression analysis. In this case, the coefficient for total part-time students is -1.536E-5 and the coefficient for the 2-year institution graduation rate is -.001. Both of these values are negative and thus have negative relations.

With all of the above information, the regression model was constructed. The model is as follows: $Y_1 = \text{Constant} + \text{Slope}_1 * X_1 + \text{Slope}_2 * X_2$. When substituting in the data from above, the resulting model was: $Y_1 = .224 + (-1.536E\text{-}5 * \text{total part-time students}) + (-.001 * \text{2-year institution graduation rate})$. In essence, what this model indicated was that if one was interested in predicting the total crimes reported per 100 students, at colleges and universities with campus police departments and/or sworn officers, then he/she/they would simply need to multiply the total number of part-time students by -1.536E-1; multiply the 2-year institution graduation rate by -.001; add these

together; and then add that sum to the constant or .224. Using the enter method, it was found that 2-year institution graduation rates and total number of part-time students explained a significant amount of the variance in the total crime rate. That being said, however, the analysis shows that neither of the independent variables in the model significantly predicted the total crime rate.

The next regression model that was run examined whether the 2-year institution graduate rates and/or the total number of part-time students can be considered predictors of the personal/violent crime rate at those colleges/universities that have a police department and/or sworn officers. As noted above, the initial regression model that was run for the personal/violent crimes reported per 100 students showed an issue with multicollinearity. This issue was addressed and the regression model was then run again having removed the minority student independent variable. The following are the results of that analysis.

The R for this model was .386 with an R^2 of .149. Based upon these numbers, 14.9% of the variance that exists in the personal/violent crime rate on campuses with campus police and/or sworn officers can be explained by the independent (predictor) variables of total number of part-time students and 2-year institution graduation rates. Although this is not a large number/percent, it is still relevant.

The F-score, from the ANOVA table, was .875 with a significance value of .447. Since .447 is greater than the significance level of .05, the model is not significant. In addition to this, the t-score for neither total part-time students ($t = -.760$, $p = .465$) nor 2-year institution graduation rate ($t = -.459$, $p = .656$) were significant. Based upon the numbers presented, the variables were not significant, and this was confirmed by the

global F-test. As such, this statistic cannot be interpreted.

The final regression model that was run that pertained to colleges/universities with campus police departments and/or sworn officers focused on whether the 2-year institution graduate rates and/or the total number of part-time students can be considered predictors of the property crime rate on those campuses. The Model R was .584 and the R^2 was .341. What this indicates is that 34.1% of the variance that exists in the property crime rate can be explained by the 2-year institution graduate rates and the total number of part-time students.

In this model, the F-score was 2.585 and had a significance level of .124, thus making it not significant. Just as with the regression model pertaining to personal/violent crime reported per 100 students, the t-scores reported for the model pertaining to property crime reported per 100 students are not significant. The t-score for total part-time students was -.670 ($p = .518$) and the t-score for 2-year institution graduation rate was -1.407 ($p = .190$). Based upon the numbers presented, the variables were not significant, and this was confirmed by the global F-test. As such, this statistic cannot be interpreted.

Table 6 contains the regression models for colleges/universities with campus police departments and/or sworn officers.

Table 6

Regression Models for Institutions with Campus Police and/or Sworn Officers for Clery Act Statistics

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
Total Crime per 100 students	.677	.458	4.232 (.047)			.224	
Total Number of Part-time Students				-.948 (.365)	-.268		-1.536E-5
2-year Institution Graduation Rate				-1.723 (.116)	-.487		-.001
Personal/Violent Crime per 100 students	.386	.149	.875 (.447)			2.521	
Total Number of Part-time Students				-.760 (.465)	-.269		.000
2-year Institution Graduation Rate				-.459 (.656)	-.163		-.004
Property Crime per 100 students	.584	.341	2.585 (.124)			.935	
Total Number of Part-time Students				-.670 (.518)	-.209		-6.177E-5
2-year Institution Graduation Rate				-1.407 (.190)	-.439		-.004

Regression Models for Colleges/Universities with Campus Safety Departments/ Offices. With reference to those campuses with campus safety departments/offices, the variables that were identified as significantly correlated, and as such included in the initial regression analysis, are included below. Next to each variable are the dependent variables to which they were correlated and as such in which regression analyses they were included.

- Size and setting of the institution (Total Clery Crime Rate, Personal/Violent Crime Rate, and Property Crime Rate)
- Dormitory capacity (Total Clery Crime Rate and Personal/Violent Crime Rate)
- Member of NCAA (Total Clery Crime Rate and Personal/Violent Crime Rate)
- 4-year institution graduation rate (Total Clery Crime Rate and Personal/Violent Crime Rate)
- Percent of population 16+ in the civilian workforce (Total Clery Crime Rate and Property Crime Rate)
- Minority instructional staff (Personal/Violent Crime Rate)

Just as with the data pertaining to colleges/universities with campus police departments and/sworn officers, the first step taken with the data and regression models pertaining to colleges/universities with campus security was to look at the Durbin-Watson test. The results for this test for each regression model were around the 2.0 level, with a range of 1.577 to 2.170. From these values, it was determined that there was independence of residuals.

The next factor that needed to be reviewed was the results for collinearity statistics. For the first run of the regression analysis, the researcher found an issue with multicollinearity with the data pertaining to total crime reported per 100 students and personal/violent crime reported per 100 students. Each will be discussed separately below. The regression model that included the dependent variable of total crime reported per 100 students and the independent variables of size and setting, dormitory capacity, 4-year institution graduation rate, percent of those 16+ in the civilian workforce, and whether the college/university was a member of the NCAA demonstrated possible

collinearity issues with two of the independent variables: dormitory capacity and 4-year institution graduation rate. The tolerance value for dormitory capacity was .027 and the value for 4-year institution graduation rate was .029. The next step was to look at the collinearity diagnostics table. There were three Dimensions that were of concern, Dimensions 4, 5, and 6 with Eigenvalues of .016, .007, and .002, respectively. The Condition Index for these three dimensions were also of concern with Dimension 4 having a value of 17.942, Dimension 5 having a value of 27.976, and Dimension 6 having a value of 50.103. All of these values indicate a concern for multicollinearity.

The final step in determining which, if any, variables need to be removed from the equation was to run a bivariate correlation. Table D1 in Appendix D provides the bivariate correlation matrix. The results indicate that a strong statistically significant correlation existed between dormitory capacity and 4-year institution graduation rate ($r = .984$). In looking at the results, it appeared that dormitory capacity ($r = .546$) had a stronger, albeit slightly, correlation with total crime reported per 100 students than 4-year institution graduation rate ($r = .524$). As such, 4-year institution graduation rate was removed from the model. This left four variables to be included in the model, size and setting, dormitory capacity, percent of those 16+ in the civilian workforce, and whether the school was a member of the NCAA.

The second model that had issues with multicollinearity was the model with the dependent variable of personal/violent crime reported per 100 students and the independent variables of minority instructional staff, size and setting, dormitory capacity, 4-year institution graduation rate, and whether the school was a member of the NCAA. The Durbin-Watson value was 1.83, indicating independence of residuals. The problem

was identified when looking at the collinearity statistics. The Tolerance value for dormitory capacity was .027 and the Tolerance value for 4-year institution graduation rate was .028.

From this it was determined that there was an issue with multicollinearity, so the next step was to look at the collinearity diagnostics table. The Eigenvalue for Dimension 6 was 0.006, which was a concern. This Dimension also had a Condition Index of 28.336. The Eigenvalue for Dimension 5 was also low at .012, with a Condition Index value of 20.444. All of these numbers demonstrate a concern for multicollinearity. The last value looked at was the Variance Proportions value. Only one of the Dimensions, Dimension 6, had a value of 0.9. Again, a concern for multicollinearity. Based upon these results, the researcher ran a bivariate correlation to determine which, if any, of the independent variables needed to be removed from the mode. The results of the correlation, found in Table D2 in Appendix D, showed a strong and statistically significant correlation between dormitory capacity and 4-year institution graduation rate ($r = .984$). Since, however, dormitory capacity had a stronger statistically significant correlation ($r = .537$) with violent/personal crime reported per 100 students than did 4-year institution graduation rate ($r = .509$), 4-year institution graduation rate was removed from the model.

The first regression model that was run focused upon the total crime rate on campuses with campus security departments. The initial model that was run had issues with multicollinearity. The issue was addressed by removing 4-year institution graduation rates from the model, as noted above. The regression model was then rerun. The R for this model was .658 and the R^2 was .433. This indicates that 43.3% of the variance that exists in the total crime rate can be explained by the independent variables of size and

setting, dormitory capacity, percent of individuals in the surrounding areas who are 16+ and in the civilian workforce, and whether the school is a member of the NCAA.

The F-score was 1.911 and had a significance level of .185. From this, one can determine that the model is not statistically significant. The t-scores reported for the model pertaining to total crime reported per 100 students were not significant. The t-score for size and setting was 1.396 (p = .193), the t-score for dormitory capacity was 0.668 (p = .519), the t-score for percent of 16+ in the civilian workforce was -0.457 (p = .657), and the t-score for whether the school was a member of the NCAA was -0.772 (p = .487). Based upon these results, the variables were determined to be not significant, and this was confirmed by the global F test. As such, this statistic cannot be interpreted.

The next regression model that was run focused upon the total personal/violent crime rate on campuses with campus security departments. As with the model for the total crime rate, the model for personal/violent crime rate also had an issue with multicollinearity. The issue was addressed by removing the 4-year institution graduation rate independent variable. The regression analysis was then conducted again. The R was 0.662 and the R^2 was 0.439, which indicates that 43.9% of the variance that exists in the dependent variable can be explained but the independent variable.

The F-score was 1.953 with a significance level of .178. From this result, it can be determined that the model is not statistically significant. Just as the F-score was not significant, none of the t-scores were significant either. The t-score for minority instructional staff was 0.965 (p = .357), the t-score for size and setting was 0.696 (p = .357), the t-score for dormitory capacity was -0.052 (p = .960) and the t-score for whether the school was a member of the NCAA was 0.759 (p = .465). These findings indicate that

the variables were not significant, and this was further confirmed by the global F-test. As such, this statistic cannot be interpreted.

The final regression model run focused on the property crime rate for colleges/universities that have campus security departments. This model looked at whether the independent variables of size and setting and percent of those 16+ who are in the civilian workforce can be viewed as predictors of the property crime rate at those colleges/universities with campus safety departments. The R for this model was 0.629 and the R^2 was .396. This indicates that 39.6% of the variance that exists in the property crime rate variable can be explained by the size and setting of the campus and the percent of those in the surrounding areas who are16+ years old and who are in the civilian workforce.

The F-score reported on the ANOVA table is 6.232 with a significant level of 0.008. This indicates that the model is statistically significant at the 0.05 level. To move forward with the analysis, the model must be significant, since the model is significant, the analysis continued.

The t-score for size and setting was 1.971 ($p = .063$) and the t-score for percent of those 16+ who are in the civilian workforce was -2.131 ($p = .046$). These results indicate that the percent of those 16+ who are in the civilian workforce was significant. On this same table, the standardized coefficients indicate the strength of the effect of each of the independent (predictor) variables to the dependent variable. The beta score for size and setting was 0.372 and the beta score for percent of those 16+ who are in the civilian workforce was -0.402. Based upon these results, percent of those 16+ who are in the civilian workforce has a stronger effect on property crime reported per 100 students than

does the size and setting of the school. The final column that was reviewed was the one representing the Unstandardized Coefficient values. This value provides information regarding the parameter values for the projection. The constant for the model has a value of 10.268, but it is not significant as $p = 0.077$. Also included are the slopes for the independent variables included in the regression analysis. In this case, the coefficient for size and setting is 0.233 and the coefficient for the percent of those 16+ who are in the civilian workforce is -0.402. Size and setting has positive relation while percent of those 16+ who are in the civilian workforce has a negative relation.

Using the data above, the regression model was constructed. The model is as follows: $Y_1 = \text{Constant} + \text{Slope}_1 * X_1 + \text{Slope}_2 * X_2$. When using the data above, the resulting model was: $Y_1 = 10.268 + (.233 * \text{size and setting}) + (-16.462 * \text{percent of those 16+ who are in the civilian workforce})$. A multiple regression was conducted to see if size and setting of the schools and the percentage of those members of the surrounding communities who are 16+ and in the civilian workforce predicted the property crime rate on the campuses. Using the enter method, it was found that the size and setting of the school and the percentage of those members of the surrounding communities who are 16+ and in the civilian workforce explained a significant amount of the variance in the property crime rate. Further, the analysis showed that size and setting did not significantly predict the property crime rate, however, the percentage of those members of the surrounding communities who are 16+ and in the civilian workforce did significantly predict the property crime rate on the college campuses. The regression models for campuses with campus safety offices can be found in Table 7.

Table 7

Regression Models for Institutions with Campus Safety Departments for Clery Act Statistics

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
Total Crime per 100 students	.658	.433	1.911 (.185)			.025	
Size and Setting				1.396 (.193)	.523		.108
Dormitory Capacity				.668 (.519)	.236		.000
%16+ in the Civilian Workforce				-.457 (.657)	-.131		-.955
Is the School a Member of the NCAA				-.722 (.487)	-.230		-.190
Personal/Violent Crime per 100 students	.662	.439	1.953 (.178)			-1.830	
Minority Instruction Staff				.965 (.357)	.351		.043
Size and Setting				.696 (.502)	.257		.319
Dormitory Capacity				-.052 (.960)	-.023		-8.100E-5
Is the School a Member of the NCAA				.759 (.465)	.240		1.187
Property Crime per 100 students	.629	.396	6.232 (.008)			10.268	
Size and Setting				1.971 (.063)	.372		.233
%16+ in the Civilian Workforce				-2.131 (.046)	-.402		-16.462

Regression Models for Social Disorganization Theory. Another aspect that was studied pertained to social disorganization theory. Some of the literature looked at whether college/university related proxies for the elements of social disorganization theory can be used to help predict campus crime. While this study did not fully study social disorganization theory, it did run regression model based upon the proxies from the literature. The measures for social disorganization include poverty, residential mobility, population size, geographic location, frequency of unsupervised peer groups, and

organizations. The proxies that were used by this researcher included the number of students awarded Pell Grants and the number of part-time students for poverty; the retention rates for both full-time and part-time students, the provision of on-campus housing and the dormitory capacity for residential mobility; the institution size for population size; the degree of urbanization for geographic location; the type of campus security as an additional measure of social structure; and student to faculty ratio, part-time to full-time student ratio, number of fraternities and sororities, the number of organization, and the ratio of organizations to students for frequency of unsupervised peer groups and community organizations. These proxies were taken from studies conducted by Barton et al. (2010) and Ravalin et al (2017).

Correlations were run on the data pertaining to personal/violent crime rate as well as property crime rate as reported by Clery Act statistics. Correlations were conducted to determine if a relationship existed between the independent variables and the dependent variables. The significance level used for these correlations was 0.01 (two-tailed) to remain consistent with the studies that were previously conducted regarding social disorganization theory and predicting campus crime. For the personal/violent rate for the Clery Act statistics, the two correlations that proved to be significant at the significance level of less than .01 (two-tailed) were the number of part-time students ($r = -.291$) and the ratio of clubs/organizations (excluding social Greek organizations) to students ($r = .591$). The correlation with the number of part-time students was negative, meaning that as the number of part-time students decreases it is likely that the personal/violent crime rate will increase. Regarding the correlation with the ratio of clubs/organizations to students, this correlation was positive. That translates to as the ratio of

clubs/organizations to students increases, so too will the personal/violent crime rate. These results also indicate that 8.45% of the variance in the personal/violent Clery crime rate can be explained by the number of part-time students while 34.93% of the variance can be explained by the ratio of clubs/organizations to students on the campus.

For the property crime rate for the Clery Act statistics, there was only one significant correlation and that was the ratio of clubs/organizations (excluding social Greek organizations) to students ($r = .681$). This correlation is positive meaning that as the ratio of clubs/organizations increases, campuses are likely to see an increase in the property crime rate. The results of this correlation indicate that 46.38% of the variance in campus property crime rate can be explained by the ratio of clubs/organisations on the campus. What was ultimately found was that most of the variables associated with social disorganization theory, by proxy, are not statistically significantly correlated with either dependent variable. That is, no statistically significant relationship exists between these variables and either the campus personal/violent crime rate or the campus property crime rate.

For the relationships that were statistically significant, a regression analysis was run. A multiple regression was run to describe and explain the relationship between the dependent variable personal/violent crime rate and the independent variables of number of part-time students and the ratio of clubs to students on campus. The first step taken was to determine if there was an issue with multicollinearity, which there was not. This is based upon the results of the Durbin-Watson and the collinearity diagnostics. Because there was no identified issue with multicollinearity, the regression analysis continued. The multiple regression model statistically significantly predicted the personal/violent

crime rate, $F(2,76) = 6.064$, p = .004, R = .371, R^2 = .138. Neither of the two independent variables added statistically significantly to the prediction. It is important to recall that the significance level used for the analysis of the proxies for social disorganization theory was at the .01 level to mirror the studies from the literature review.

A linear regression was run to explain the relationship between the property crime rate (dependent variable) and the ratio of clubs/organizations to students. The results of this regression demonstrated a significant relationship between the variables. Further, this model indicated that changes in the ratio of clubs/organizations to students will result in changes to the property crime rate on college/university campuses. The ratio of clubs/organizations to students statistically significantly predicted the property crime rate, $F(1,79)$ 48.86, p < .001, accounting for 38.2% of the variation in property crime rate with an adjusted R^2 = 37.4%, which represents a small effect size. The regression models for social disorganization theory proxies can be found in Table 8.

Table 8

Regression Models for Social Disorganization Theory

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
Personal/Violent Crime per 100 students	.371	.138	6.064 (.004)			1.113	
Ratio of Clubs to Students				2.199 (.031)	.256		.017
Total Part-time Students				-1.594 (.115)	-.185		.000
Property Crime per 100 students	.618	.382	48.856 (<.001)			-.095	
Ratio of Clubs to Students				6.990 (<.001)	.618		.044

Summary

The purpose of this study was to determine if certain aspects of college/universities, including their student population, faculty/staff population, campus characteristics, and characteristics of the surrounding areas can be identified as predictors of campus crime. The study conducted by Barnes (2009), as well as articles from the literature review were used as the foundation to help identify the independent variables for this study.

Once the statistically significant correlations were identified, multiple regressions were run to assist with identifying if any of the variables within the study can be labeled as a predictor of campus crime. Of the 8 regression models that were run, only 4 of the models were statistically significant and of those models, only 2 of the independent variables were significant in predicting campus crime. More specifically, with regard to property crime rates for institutions with campus safety departments, the only independent variable that was significant was the percent of individuals who are 16 years of age or older who are in the civilian workforce. Regarding the regression models run using the social disorganization theory proxies, only one independent variable was significant, and it was significant in predicting the personal/violent crime, and that variable was the ratio of clubs to students. The clubs do not include social fraternities. These results will be interpreted in Chapter 5. In addition, the results will be discussed in reference to the existing literature on the topic to determine if these results fall in line with the existing literature, or if there is a deviation from previous study results. Chapter 5 will conclude with a discussion regarding areas for future research.

Chapter 5: Discussion

Introduction

College campuses are presumed to be safe places despite the crime that does occur both on the campuses and in the surrounding areas. Many studies that have been conducted regarding campus crime have focused on the perception of campus crime and not necessarily the predictors of campus crime. Because of this, this study focused on identifying correlations for campus crime and then took the analysis one step further and attempted to identify predictors of campus crime. This study used crime statistics aligned with the Clery Act. It looked at the crime that occurred on campuses with campus police and those campuses that had campus security departments, to see if this distinction played a role in the ability to predict campus crime. More specifically, this study looked at colleges and universities in Massachusetts that received Title IV funding and that had either campus police or campus security in an attempt to identify predictors of the crime that occurred on those college campuses.

The research questions that were addressed in this study included asking about the characteristics of the campus community, the campus itself, and the surrounding areas; identifying the types of crimes that occur not only on college/university campuses but also in the areas surrounding the college campuses, including which are most and least reported; and the predictors of campus crime based upon the results of the correlations run.

IPEDs data, Clery Act statistics, Uniform Crime Reporting data, and Census data were used to answer these questions. The data used was readily available on the Internet, and as such, there was no need to make a formal request to obtain the data. The

researcher was able to enter the desired variables into the query, and the data was provided via an Excel spreadsheet, making it a smooth transition from Excel to SPSS for analysis. The total number of schools in the study was 88 (62 had police departments and 22 had security departments). It is important to note that it was not clear as to whether or not 4 of the schools had a campus police department or campus security, so those schools were removed from the regressions that were based on school police department and campus security.

The remainder of Chapter 5 contains information regarding the summary of the findings, the interpretation of the findings, context of the findings, the implications of the findings, the limitations of the study, and lastly, the recommendations for future research. The summary of the findings section provides a summary of what was found following the analyses that were run. This chapter does not contain extensive statistics as that information was provided in Chapter 4. The interpretation of the findings relies upon the expected results as stated in Chapter 3 and a discussion of the unexpected results that were found. The context of the findings section links the findings from this study to those discussed in the literature review. The implications section discusses how the findings in this study can contribute to the field and, more specifically campus safety. The limitations section discusses any limitations that are associated with the study. These limitations can include generalizability, internal and external validity, and methodology. The final section is future research directions. It is here that the researcher provides recommendations for future research regarding the topic of campus crime.

Summary of the Findings

The central question that was addressed in this research study was which campus

or surrounding area variables can be used to predict the occurrence of campus crime. To address this question, regression analyses were conducted based upon the results of the correlations that were run. The data was from the Clery Act statistics downloaded from the Campus Safety and Security Statistics website. Once the significant correlations to total crime rate, personal/violent crime rate, and property crime rate were identified, those variables were included in the regression analysis. Overall, what was found in this research study, based upon the variables used, is that there are only a few variables either pertaining to the students, staffing, campus, or surrounding areas that can help to predict campus crime.

Only one regression model that pertained to data focused on college/university campuses with campus police and/or sworn officers was statistically significant ($F = 4.232$, $p = .047$). This model included the dependent variable of total crime rate and the independent variables of the total number of part-time students and 2-year institution graduation rates. Despite the overall model being statistically significant, based upon the t-scores, the independent variables were not significant. Although the total number of part-time students and the 2-year institution graduation rate were not statistically significant, the overall model was. Because of this, one may wish to keep in mind these variables as potential predictors of campus crime. One could argue that these results may be more applicable to 2-year institutions as opposed to the more traditional 4-year institution as 2-year institutions often have a greater number of part-time students, just by the nature of 2-year schools. It may also be that if the 4-year institutions were removed from the model, each independent variable would be statistically significant, again based upon the idea that 2-year institutions often have a larger part-time population and because

the graduation rate is specifically tied to 2-year institutions.

On those campuses with campus security departments, the regression model indicates that the percentage of individuals 16+ in the surrounding areas who are in the workforce was a statistically significant predictor of campus crime, and, more specifically the property crime rate on the campus. The relationship between the variables was negative. The other independent variable in this regression model, size and setting, was not statistically significant (t-score = 1.971, p = .063). What the results of this regression model indicated was that as the percentage of the population 16+ in the civilian workforce increases, the campus property crime rate will decrease. This model is also suggesting that it is possible that as the size and setting of the campus changes/increases, so too will the campus property crime rate. This is because although the variable itself was not statistically significant, the level of significance was close to the .05 level, and the overall model was statistically significant.

While not a direct research question, another aspect of the study pertained to social disorganization theory. When looking at the college/university proxies for the elements of social disorganization theory, they may be able to be used to help explain or predict campus crime. The variables used in the regression analysis were based upon the variables presented by Ravalin and Tevis (2017) in their study regarding social disorganization theory as a predictor of campus crime on community college campuses in California. For this analysis, the data was not broken up into campuses with campus police and/or sworn officers and those with campus safety departments, as this was not done in the Ravalin and Tevis (2017) study. The results of the regression analysis in the current study indicated that the ratio of clubs/organizations to students is a statistically

significant predictor of the property crime rate on college/university campuses. The relationship was positive, indicating that as the ratio of clubs/organizations to students increases, it is predicted that so too will the property crime rate on the college/university campuses increase.

Interpretation of the Findings

Prior to starting this study, the researcher expected to find similarities between the research that has been done on this topic and the results of the current study. More specifically, the researcher anticipated that variables pertaining to the campus itself would be predictors of campus crime, more so than those related to the faculty/staff, the students, and the surrounding areas. Lastly, the researcher, based upon the existing literature, anticipated that the campus proxies associated with social disorganization theory would help to identify predictors of campus crime. The following section details the interpretation of the research study's findings and highlights which, if any, of the variables can truly be used as predictors of campus crime.

Research Questions 1 and 2

Regarding research questions 1 and 2, data from both the Clery Act statistics and the UCR were collected. This was done as a means to determine which data set to use. As noted previously, the Clery Act data was ultimately used to calculate the correlations and regression models in response to research question 3 because of the greater number of schools that reported that data in response to the Clery Act requirements.

The most reported crime group for the Clery Act is different than for the UCR. For the Clery Act, the most reported crime grouping is personal/violent crimes, with the highest individual crime being that of forcible sex offenses. For the UCR, the highest

crime grouping is property crime with the highest individual crime being larceny-theft. Since the Clery Act data does not report larceny-theft, this could explain the difference in the most reported category. Also, the forcible sex offenses category includes multiple crimes (this category was compiled from various lesser reported crimes to ensure that the analysis would not be affected by small reporting numbers), while the UCR has the category of rape.

This data further demonstrates that campuses are not immune to crime and that there is not one specific crime category that overshadows the others. That is, campuses are susceptible to both personal/violent crime as well as property crime. Another critical factor is that not all of the campuses reported their crime data to the UCR, in fact, only about half of the campuses did. This could explain any discrepancy between the data sources as one data set contains more data and, as such may, in fact provide a clearer picture of the crime occurring on those campuses.

One last point regarding the larceny-theft numbers. This high number could be explained by students not being cautious of their belongings while on campus. Students may feel safe on campus and, as such may leave their dorm room unlocked when going down the hall to visit with a friend, thus exposing themselves to crime. Or a student may leave their computer or belongings unattended while at the library if they have to get up to find a resource or speak with the librarian. Again, the student may feel safe and secure and not think twice about leaving their belongings, but this could easily leave them susceptible to being a victim of a crime.

Research Question 3

To respond to research question 3, it was necessary to run correlations using the

identified independent variables and the three dependent variables to determine which variables should be included in the regression models. The variables that were statistically significantly correlated with the total crime rate, the personal/violent crime rate, and/or the property crime rate were retained and used in the regression models.

Correlations. The findings of the correlations identified which independent variables were correlated with total crime per 100 students, personal/violent crime per 100 students, and property crime per 100 students. These data points were divided into two categories: campuses with campus police and/or sworn officers and campuses with campus safety departments, with the exception of those variables that were associated with social disorganization theory. What is important to know and remember is that this section is interpreting the correlations and not identifying predictors of crime. The correlations indicate that there is a relationship between the variables, but it does not mean that there are predictor qualities to these variables. The correlations were calculated to identify those variables that should be included in the regression analysis. Correlation does not equate to causation. This should be kept in mind when reading this section.

College and Universities with Campus Police and/or Sworn Officers. The independent variables that were statistically significantly correlated with any of the three dependent variables were the 2-year institution graduation rate, the number of minority students, the total number of part-time students, and whether the school was a member of the NCAA. The 2-year institution graduation rate was negatively correlated with all three dependent variables meaning that as the graduation rate increases, it is likely that campuses will see a decrease in the total crime rate, the personal/violent crime rate, and the property crime rate on campus. This variable only refers to the 2-year institution

graduation rate, which means that this significant finding only pertains to the 2-year colleges and the community colleges in the study, and not those colleges/universities that offer both associate's and bachelor's degrees. Ultimately, these correlations could be explained by the fact that the increased graduation rates mean that those students on the campuses are focusing their time on their studies so that they can move on to the next step in their life/career.

Higher graduation rates could also lead to a decrease in crime rates as the education that the students are receiving could allow them greater employment opportunities, even while in school, thus decreasing their need or the thought of committing a crime. Also, an increased graduation rate could mean that students are focused upon their studies, which would potentially allow for less time to engage in any illegal activity. If the students are more focused upon their studies, they will have a better understanding of the consequences of committing crimes, thus helping to explain the negative correlations. Lastly, oftentimes students study topics such as ethics and the law as part of their curriculum or as part of the general education courses, again supporting the idea that they will think of the consequences before participating in an illegal activity.

This finding is interesting and potentially contrary to what was expected in that if the graduation rate is high, that could mean that there is more of a transient population on the campus and a lower likelihood of feeling a sense of community on campus. Both factors lead one to expect that the increased graduation rate may be positively correlated to crime. That is because if there is more of a transient population and there is no sense of community, there may be less of an inclination to assist another if someone sees something.

The total number of part-time students was negatively correlated with each of the dependent variables. This indicates that as the number of part-time students increases, the crime rates will decrease. This was an interesting finding, as it was not an anticipated finding. What this could mean, however, is that the increase in the number of part-time students, although leading to more students attending the school, could mean that there are potentially fewer students on the campus at any one time. The fewer the students on campus at any one time, the less of a chance of a crime being committed. Also, oftentimes part-time students do not remain on campus after their classes, and this could help to explain why an increase in part-time students is negatively correlated with the crime rates. If students are on campus just for class and then leaving, they are not on campus to subject themselves to potential criminal activity. The data did not indicate whether students were part-time day or part-time evening students. It is possible, but not clear, that knowing this may further help to interpret why the negative relationship exists.

Whether a school was a member of the NCAA was positively correlated with the total crime rate and the personal/violent crime rate. These findings could be explained by the fact that if schools are members of the NCAA, it could lead to more visitors to the campus to watch the various sporting events, thus creating more available targets, and arguably could attract those who are motivated to commit a crime knowing that there will be an influx of individuals on the campus. Also, those visitors could presume the campus is safe and not be as guarded and thus making themselves targets of crime.

The number of minority students was negatively correlated with the personal/violent crime rate. This means that as the number of minority students on campus increases, the personal/violent crime rate will decrease. This finding was not

anticipated based on the literature that was read before conducting the study. It was expected that if there was a statistically significant correlation that it would be positive. This correlation can be explained simply by race not having a role in whether there are occurrences of personal/violent crime on college campuses.

As noted in Chapter 4, none of the variables associated with the faculty/staff on campus nor the surrounding areas were significantly correlated with any of the dependent variables. This finding was surprising, based upon previous literature. This indicates that on those campuses with campus police and/or sworn officers, the factors associated with the faculty/staff and with the surrounding area are not correlated, or do not have a relationship with the dependent variables. There is no impact on the crime rates. This does not mean definitively that these variables do not have a relationship with the crime rate, what it is stating is that the relationship that does exist is not significant.

College and Universities with Campus Safety Departments. The result of the correlation analysis between the dependent and independent variables for those colleges and universities that have campus safety departments shows a larger number of correlations. Regarding the campus itself, the size and setting of the campus was strongly correlated to all three dependent variables. This correlation is not a surprise as oftentimes, the number of people in a particular area can be related to the number of crimes that are occurring. An increase in the number of people in a single area allows for more suitable targets and more motivated offenders. The combination of these factors, plus no suitable guardians, which could be the case if the campus safety office is not operational 24/7, follows the theory of routine activities theory, a possible explanation for this correlation. Since the correlation was positive, it indicates that as the size and setting of the

college/university increases, so too does the crime rate. Having more available victims, and suspects for that matter, can lead to, but not necessarily predict, higher crime rates.

Dormitory capacity, 4-year institution graduation rates, and whether the school was a member of the NCAA were all positively correlated to the total crime rate and the personal/violent crime rate, indicating that as the independent variable increases, so too does the dependent variable. The relationship between dormitory capacity and the total crime rate and the personal/violent crime rate can be explained in that the more students on campus 24/7, the more likely there will be instances of crime. More students on campus full-time and in the dormitories allow for more suitable targets on campus. Also, it does appear logical that as more students reside on campus, there is a possibility for more personal/violent crime. The location of the crimes was not studied in this particular study, but if many of the personal/violent crimes were occurring in the dormitories, then this correlation would be further explained.

It is unclear to this researcher why there is a positive relationship between the 4-year institution graduation rate and the two dependent variables. That is why as the 4-year institution graduate rate increases, so too does the crime rate. One might think that it would be a negative correlation. One possible explanation, and it aligns with the concept of social disorganization theory, in that higher graduation rates lead to higher transitory rates in that students are coming and going every four years, so there is no true sense of community on the campus. This lack of sense of community can lead to members of the campus community not having the urge, or feeling of obligation, to step in and assist when a crime is happening.

The positive correlation between whether the school is a member of the NCAA

and both the total crime rate and the personal/violent crime rate can be explained by the likelihood that having college athletics brings more people to the campus, thus allowing for more opportunities for crime. As noted earlier, routine activities theory could explain this particular variable.

For each of these independent variables, not having campus police but rather a public safety office could help to explain the correlations. It may be that those campuses with public safety offices do not have an open office 24 hours a day, and the colleges/universities may rely upon members of student affairs to address these situations in the off hours. Thus, there may not be sufficient suitable guardians on the campus. It could also be that students are less concerned with being punished in the way they would if the campus had campus police. It is unclear as to what the criteria are for when a local police department is contacted to address a campus situation on those campuses with campus security. It could be that students think that the crimes will be handled in a different manner. It may also be that the schools do not have large campus safety departments, so they do not have enough staff to patrol the campus or be present at all the activities that occur on campus.

As indicated in the results from Chapter 4, the only variable that pertained to the areas surrounding the college campuses that was correlated with campus crime was the percent of the population 16 years and older who were in the civilian workforce. This variable correlated with both the total crime rate and the property crime rate. What is important to note is that this correlation is negative, meaning that as the percentage of the population 16+ who are employed goes up, both of those crime rates are going to go down. A possible explanation for this correlation is that if there are more people in the

workforce, there are likely fewer people struggling to make ends meet. This is purely speculative based upon some hypotheses and crime theories that posit that crime is committed because people do not have the means to obtain what is needed to survive or commit crimes to obtain the things they want but cannot afford. Despite there being no one true explanation as to why there is a negative correlation, the correlation being negative is informative, not predictive. This is a factor that individual schools could look at when evaluating safety protocols on their campuses.

Up to this point, the discussion has been about the relationships between the independent and dependent variables. It is important to stress that these are relationships and correlations, not predictors. Correlation does not equate to causation. Because of this, the analyses in this study also included multiple regressions.

Multiple Regression

Based upon the results from the correlations, regression analyses were conducted. Of the eight regression models that were run, only four returned statistically significant results. The regression analyses used those variables that were found to be statistically significantly correlated with the dependent variables. The regression analyses helped to identify potential predictors of campus crime. The first regression model that provided a potential predictor of campus crime pertained to colleges/universities that have campus police and/or sworn officers and the total crime rate on those college campuses. Although the model was statistically significant, neither of the variables within that model was a statistically significant predictor of campus crime. Even though the $R^2 = .458$, meaning that 45.8% of the variance in the total crime rate can be explained by the independent variables of part-time students and 2-year institution graduation rate, neither of these

variables is a predictor of the total crime rate.

The next model that was statistically significant was related to the property crime rate on campuses with campus safety departments. Again, this model indicated that 38.6% of the variance could be explained by the two independent variables in the model. One of the variables in the model was shown to be statistically significant. That was the independent variable of the percent of individuals 16+ in the surrounding neighborhoods of the campuses who were in the civilian workforce. As a reminder, the definition of this variable can be found in Chapter 1. This variable is an employment variable and looks at the number of individuals who were employed outside of the home, not including volunteer work nor those actively employed in the armed services, at the time of the survey. Just as the correlation was negative, so too was the predictive value, which means that as the percentage of individuals 16+ in the civilian workforce increases, it is predicted that the property crime rate on college campuses will decrease. These results could be explained by strain theory, which posits that the social structure of the society, or in this case the neighborhood, and the cultural values of the society could put pressure on an individual living in that specific community to commit crime. If the individual is not working, they may not be able to live up to the expected social structure and therfoer turn to crime to achieve the desired social status within the community. Said another way, this finding could be explained by individuals not resorting to crime because they are employed and can support themselves and obtain needed items without having to turn to crime. These results could signify that the surrounding area may be of a higher socioeconomic neighborhood, which some would relate to lower crime in the area and thus lower campus crime rates.

The final two regression models were run because some of the reviewed literature looked at whether campus elements can be used as proxies for social disorganization theory. This researcher believed this approach could provide interesting data regarding campus crime. From the results of the analyses, it is apparent that the ratio of clubs/organizations to students can be seen as a predictor of property crime rates on college campuses. Furthermore, the relationship was positive, meaning as the ratio of clubs to students increases on campus, so too will property crime rates. This was not an expected result, as social disorganization theory presumes that a socially disorganized area, that is, one that does not have a sense of community, will see greater amounts of crime. This is because in those areas, there is no sense of community, and thus people are less likely to look out for one another or to step in when a crime is occurring or has occurred. If there is a connection, people would arguably want to protect that sense of community. Arguably, college campuses do have a sense of community, which is why this finding is surprising. That being said, it is important not to conclude that the number of organizations alone lead to an increase in campus crime. There are other factors at play as this variable explains only 38.2% of the variance in the property crime rate on the college campuses.

That being said, this result could be explained by the idea that more clubs/organizations result in greater student engagement and student gatherings on campuses, which could result in more available targets for crime. Depending on the size of the organizations, there could be large numbers of individuals gathered at the same place at the same time thus again allowing for a greater number of available targets for anybody who might be a motivated offender. These numbers could also depend on the

type of clubs and organizations these are. If they are social clubs/organizations, there could be an opportunity for alcohol, which can inhibit some individuals' behavior, thus leading them to be potential victims of crime. This current study did not look to see if these clubs/organizations had faculty or staff mentors. This could be an important factor as even though having a faculty or staff mentor does not mean that there will be less crime, it could lead to the potential of less crime due to there being individuals monitoring the events of the organization.

Context of the Findings

After analyzing the data in the current study and then returning to the literature review, this researcher was able to find some similarities between the results of the current study with those conducted previously. One such finding was that of Fox and Hellman (1985), in which the authors found that the location of the campus did not have an impact on the campus crime rate. The current study looked at the degree of urbanization of the schools in the study, and it did not find any correlation between the degree of urbanization of the schools and the crime rates. Another study that had similar findings to the current research was by Barton et al. (2010). Barton et al. (2010) found that student groups were positively associated with campus crime. Barton et al. (2010) also found that Greek organizations were positively associated with campus crime; however, the current study did not. Interestingly enough, what Barton et al. (2010) found was that as the number of organizations on campus increased, the result was an increase in the sense of community on the campus, which arguably is a desire for college campuses as a means to allow students to be more connected to the campus. At the same time, however, the increase in organizations may, in fact, be providing the potential for

increased crime rates. This finding may direct college administrators to ensure that there is more supervision via a college staff or faculty mentor at these organizationally hosted events to help reduce the potential for crime. What is interesting about this is that although the current study and Barton et al. (2010) found that the number of organizations has the potential of leading to more crime, Ravalin and Tevis (2017) found that creating a cohesive social setting, which could be done via college clubs and organizations, can actually strengthen the performance of the students and thus have a positive impact on crime meaning they provide the opportunity to lessen the crime rate on the campus.

While some of the current study's findings did align with past studies, there appears to be more discrepancies with past studies than alignment. Sloan (1994) found that colleges with higher percentages of minority students had higher reports of violent crimes, but the current study did not find the same. The current study did find a correlation between the number of minority students and the personal/violent crime rate, but the correlation was negative, the opposite of what Sloan found. The current study found that on campuses with campus police departments and/or sworn officers, as the number of minority students on campus increased the personal/violent crime rate would decrease.

Volkwein et al. (1995) looked at the type of campus based upon the Carnegie classification type. They found low rates of both violent and property crime on two-year college campuses, with higher rates found at colleges/universities with schools of health sciences and medical schools. This current study did look at the Carnegie classification as an independent variable but found no correlation or predictive value of that independent

variable to any of the dependent variables. The current study did not break down the Carnegie classification and look at each class as a separate variable; rather it looked at the variable as a whole. If the variable had been broken down in the current research, the researcher may have found a similar finding to Volkwein.

Ravalin and Tevis (2017) found in their research that the number of full-time students versus part-time students and the size of the campus could be predictors of campus crime. They also found that the number of residential students could help to predict crime on campus. None of these findings held true in the current study. Although the regression model for total crime per hundred students on campuses with police and/or sworn officers was statistically significant, the independent variable of total number of part-time students was not statistically significant, indicating it is not a predictor of campus crime. Again, a difference from a finding from the literature.

Jacobsen (2017) found that those campuses that had higher female enrollment had a lower number of violent crime reports. Although the current study did not specifically look at the relationship between female enrollment and the number of violent crime reports, the present study found no correlation between the personal/violent crime rate and the number of female students on campus nor was there a correlation between the number of males and the personal/violent crime rate, thus leading this researcher to believe that this is yet another difference between the current study in the existing literature.

Regarding whether social disorganization theory can be used to predict campus crime, only one variable proved to have predictive possibilities: the ratio of campus organizations to students. It is important to note that in the current study, the

organizations did not include social Greek organizations. This finding from the current study is different from that of Ravalin and Tevis (2017), who did not find that organizations are predictors of campus crime but rather found that the number of Pell Grant recipients, which was used as a proxy for low socioeconomic status, was a predictor of campus crime. The current study did look at Pell grant recipients but did not find a correlation between the number of Pell Grant recipients and the dependent variables, nor did it find the number of Pell Grant recipients to have predictive values. One reason for the difference could be that Ravalin and Tevis (2017) looked at only community colleges in California and did not consider any four-year colleges. The current study looked at both two-year colleges as well as four-year colleges but again, did not find the number of Pell Grant recipients to be a predictor of campus crime.

The current study differed more from the existing literature than it aligned with it. One reason for the differences could be the time that has elapsed between those previous studies in the current study. Campus safety precautions could have changed in the time between when the previous studies were conducted and when the present study was conducted, and if that did happen, that could help explain the limited number of predictors of campus crime. That is, perhaps what used to be predictors of campus crime are no longer predictors because college campuses have put in safety measures to address those predictors, thus making the campuses appear to be safer.

Implications of the Findings

Ultimately the takeaway from these results is that there is no true predictor of campus crime. Even though some variables did indicate predictor potential, campuses are cautioned about blindly accepting these results, as not all campuses are the same. This

study did use the population of colleges and universities within the Commonwealth of Massachusetts. Still, some schools were excluded because they did not receive Title IV funding and/or did not have a campus police department or campus safety office. Another factor to recognize is that each school and campus is unique. The uniqueness of each college campus could impact whether the predictors found in the study translate to predictors of crime on the individual campuses within Massachusetts. What may be a better approach, which will be mentioned later when future research is discussed, is that administrators may seek to use the framework of this study to look at their own individual campus to identify potential predictors of campus crime for their respective campus and their individual situations.

One of the reasons for this study was to provide college administrators within Massachusetts with an idea of potential predictors of campus crime. Again, what was found is that there are no true predictors of campus crime. What colleges and universities can do is look at their campuses and the crimes that are occurring, and through statistical analysis determine if any of the variables that exist on their campuses can be identified as predictors. This would then allow the college campuses to review their own policies and procedures and safety measures to address the potential predictors with the hope and anticipation of making the campus that much safer. Campus crime is not going to go away. There will always be crime, and what this study was hoping to do was to identify ways that college campuses can help minimize the crime occurring on their campuses.

This study found that as the percentage of individuals who are 16 years of age and older living in the surrounding communities who are in the civilian workforce increases, the property crime rate on the college campuses is likely to decrease. The question that

then arises is what can campuses do to mitigate this effect.

Colleges and universities can help to revitalize the communities in which they are located. This revitalization can help to increase the employment opportunities that exist in the area as well attract additional businesses to the area and additional residents who will take part in the local workforce. One way in which the schools can revitalize the surrounding communities is to consider offering scholarships to local high school students. By educating those living in the surrounding area, it can help to build the skilled workforce that exists in the surrounding area (Abel & Deitz, 2021). Colleges and universities can also offer seminars and low-cost/no-cost certificates that would help to increase the skilled workforce and perhaps provide those living in the area a new skill that will allow them to seek new employment opportunities.

Another idea for schools is to work with local businesses to identify internship opportunities for the students at the local college/university. This could lead to more economic activity for these businesses and thus the need to hire more individuals. The hiring of more individuals can have a direct impact upon the number of individuals in the civilian workforce, which would help to decrease the property crime rates on the college campuses. Along these lines, colleges/universities could work with local businesses, especially if it is a research institution, and identify new business lines, which would, in theory, require a larger number of employees thus again, helping to increase the number of individuals in the civilian workforce (Abel & Deitz, 2012).

Lastly, it may be that the local colleges/universities turn to the surrounding community to fill open positions on the campus. Schools could focus some of their recruitment strategies within the surrounding areas to find residents who may be willing

and able to fill open roles at the college. This will help to increase the civilian workforce and thus help to lower the property crime rate on the college/university campuses within the surrounding areas.

At first glance from the results presented in this study, it may appear that colleges/universities would want to limit the number of clubs/organizations on their campus due to the positive relationship that was discovered between the ratio of clubs/organizations to students and the property crime rate on the college campus. Although this may seem to be a proper approach, schools should not read or interpret this result as a need to remove clubs/organizations from the campuses. Student engagement on the campus is an important element that leads to student success. Students who are engaged in the campus community feel a sense of belonging, and this can translate to higher GPAs, higher retention rates, and higher graduation rates. Student clubs/organizations can also lead to greater opportunities for social interactions on the campus, thus allowing for the creation of a feeling community, ultimately leading to campus community members being willing to intervene if a problem occurs.

As such, administrators should, as opposed to opting to remove or limit the number of organizations, seek to enhance security available for events convened by the organizations and to develop policies that look to encourage those in the campus community to be better protectors of their property no matter where they are on the campus and not matter what they are doing on the campus. Limiting or removing organizations just to reduce the numbers in anticipation of the action lowering property crime, without looking at any other possible cause or contributing factor is not advised. Administrators should first seek to analyze their own campus data to see if this finding

holds true to their campus, as this is not a consistent finding across the existing literature. Administrators also need to review existing safety protocols that exist as they pertain to clubs/organizations to ensure that the administration is doing all that it can do to protect the campus community from campus crime.

What was also discovered with this research is that there is no true picture of campus crime. The only crime that is known is that which is reported to authorities. The unreported crime is referred to as the dark figure of crime, and it exists whether on a college campus or in the community at large. If victims do not report crimes to college authorities, there will never be a clear picture of what the crime looks like on college campuses, and researchers and campus authorities will not be able to measure the true extent of crime on their campuses. This means that even if predictors are identified, they may not be valid predictors or they may not tell the whole story due to the missing data.

How crimes are reported on college campuses was not reviewed for this particular study. The dark figure of crime may be the result of reporting systems not being as simple or as straightforward as they could be on a college campus. It may be that schools need to be sure that students are aware of the available services if they are victims of crime. Knowing that there are services and that they can get additional help may lead more students to report incidents to campus authorities. Also, college administrators may need to better stress the importance of reporting all incidents and allow for anonymous reporting opportunities if there are not already. This could provide a clearer picture of the crime that is happening on college campuses. College campuses need to stress the importance to everybody who works, lives, and studies on the campus that reporting all incidents is how they can help make the campus community safer. It is only by knowing

the true extent of crime that predictors can be identified.

All this being said, even though the study did not identify strong and explicit predictors of campus crime, this researcher hopes this study will provide a framework for college administrators to use to analyze the crime on their campuses to make them safer.

Limitations of the Study

The current study looked at a total of 88 schools within Massachusetts. The number of schools included were limited to those that received Title IV funding, have either a police department or campus security department, and report their crime statistics in accordance with the Clery Act. A study that looks at every school in Massachusetts may find different results.

Some of the limitations of this study were methodological. One such limitation has to do with generalizability. Although this study uses a full population, the results will only be generalizable to the 2-year public, 2-year private, 4-year private, and 4-year public colleges and universities within the Commonwealth of Massachusetts. Although generalizable to the college and universities in Massachusetts, it is important to note that each institution is unique, and the uniqueness of the institution can impact the generalizability of the results. The study did not consider any changes to campus safety made in the time following the data collection period. The snapshot of the data collected may not be representative in that it could include unusual events that occurred during that time that are not typical during any other year. One such unique event was the start of the Covid pandemic. Colleges and universities began closing and going remote during the month of March; therefore, there were some time periods (mid-March through the beginning of May) that may not have been accounted for in the data collected. Also, the

researcher could have identified a predictor of campus crime that may have already been addressed following the data collection and before the data analysis and drafting of the discussion section.

There are also limitations associated with secondary data analysis as the data used was collected by another individual/agency for use with different research questions or with a different research agenda. In addition, there could be a concern with validity regarding how the data was collected and the tool that was used to collect the data. Another concern was data entry errors. The researcher is reliant upon the person who entered the reported data into the system. Unfortunately, humans are not perfect; thus, there could be some data entry errors causing mistakes within the data.

Another possible threat to internal validity was the instrumentation. This research study relied upon publicly existing datasets. It is possible that the instruments used to collect the data have changed over the years or that the definitions of crimes have changed over time, thus impacting the number of crimes reported. The researcher did not note any changes to crime definitions that would have impacted the results. Information regarding how each data source collected its data was reviewed, and there did not appear to be any issues with validity.

This study did not consider crimes on college/university campuses that were not reported. Also, this study focused upon the category of on-campus crime. It did not look at crimes that specifically occurred in the residence halls or that were labeled as disciplinary actions. As such, the number of crimes may be underreported. Also, these were crimes that were reported to campus officials, but that does not necessarily mean that the crimes were prosecuted or that the alleged offender was convicted of the reported

offense. Meaning that it is not clear if all of the reports were actual crimes and not simply reports of an event. The data available from the Clery reports for the crimes used as the dependent variables in this research (personal and property crimes) did not distinguish between crimes committed by students and those committed by non-students.

As noted above, the data was collected from various data sources. Because of this, the researcher needed to create one single database that combined the data from each of these sources. This could impact the ability to replicate the findings if future studies were not able to create a similar database to use for the data analysis.

History is another limitation that needs to be discussed, as it can impact the validity of the data. At the end of the academic year upon which the study was based, the pandemic began. Many colleges and universities in Massachusetts started to sending students home during the month of March. This is approximately a month and a half earlier than most of the students would have left campus. This could have impacted the total number of crimes reported, and it is not clear how many more crimes may have occurred and been reported had a full academic year been included in the study.

In addition, another limitation is that the various crime rates were based on the total student enrollment at the colleges as opposed to the total campus numbers. This is because the total number of students was a readily available statistic as not all schools in the study reported the total number of staff or the total number of faculty. As such, the available and consistent variable to use was that of student enrollment. While this does, in fact, impact the crime rates, it is not clear how it might impact the results that were obtained in the study.

While looking at the data for the areas surrounding the campuses, what is

considered immediate or surrounding area may not be close to the college campus. For example, cities like Boston and Worcester have large numbers of schools within their respective cities. The reported crime may be in a part of the city that is far from the actual college campus. Therefore, it may be difficult to say that the crime rate in the surrounding area is or is not a predictor of campus crime again, depending on the definition of the surrounding area.

Instead of looking at individual crimes, this study grouped crimes into three categories total crime rate, personal/violent crime rate, and property crime rate. This was done to align with many of the studies that had been conducted previously. Perhaps looking at the individual crime data may tell a different story. What needs to be kept in mind, however, is that if the number of crimes is small, it may make it challenging to conduct such a study or to obtain meaningful results. Along those lines, it is important to remember that only reported crimes were included in the study. Therefore, this study does not consider crimes that may have occurred, but that were never reported to the authorities on the campus. Additionally, the current study used the actual counts for many of the independent variables as opposed to the percentage of the variables. For example, the study used the total number of female students, the total number of minority students, and the total number of Pell Grant recipients as opposed to the percent of the population who were female, minority, and Pell Grant recipients. This may have impacted the results and may explain the difference in some of the correlations found in previous studies but not in the current study.

Lastly, using the Clery statistics may also be a study limitation. There may be more accurate data sets available such as a combination of campus crime logs,

victimization surveys, and Clery Act statistics that provide a greater picture of the crime that occurs on college campuses. This is mentioned because the Clery Act statistics do not report on larceny/theft or vandalism, while these numbers are reported in the UCR. That being said, the Clery Act provides a valid data set and is used by researchers to look at crime on college campuses.

Future Research

As mentioned previously, college/university administrators may use this study as a framework to look specifically at their own campuses to see if there are predictors of campus crime based on their own statistics and data. This suggestion is because of the unique nature of each campus. There may be some unique attribute that either acts as a crime prevention effort or a predictor of crime. An additional variable that could be added to the framework that could be a predictor of campus crime is the types of majors on a college campus. This is mentioned because one of the studies in the literature review indicated that colleges/universities that had schools of health sciences and/or medical schools had higher crime rates.

A study that explicitly breaks down four-year versus two-year colleges may reveal additional potential predictors of campus crime. Often times two-year colleges are commuter campuses versus many four-year colleges that are residential. This distinction may have an impact that may be worth exploring.

Lastly, a longitudinal study may be necessary to see what variables predict campus crime. Using a snapshot in time solely shows what was happening at that point in time, while the longitudinal study will provide the researcher with more data points, thus enabling them to see trends across time as well as the ability to look to see if there are

historical events that may have occurred that would have impacted crime on the college campuses.

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Appendix A

Campus and Surrounding Area Crime Reported, by Crime, in Accordance with the Clery Act and the UCR

Table A1

Campus Crimes Reported, by Crime, in Accordance with the Clery Act and the UCR

	Sum
Clery Act Murder Nonnegligent Manslaughter	0
Clery Act Negligent Manslaughter	0
Clery Act Forcible Sex Offenses	448
Clery Act Robbery	15
Clery Act Aggravated Assault	54
Clery Act Burglary	308
Clery Act Motor Vehicle Theft	33
Clery Act Arson	11
UCR Murder and Nonnegligent Manslaughter	0
UCR Rape	73
UCR Robbery	10
UCR Aggravated Assault	57
UCR Burglary	167
UCR Larceny-Theft	2199
UCR Motor Vehicle Theft	25
UCR Arson	5

Table A2

Surrounding Cities Crimes Reported in Accordance with the UCR.

	Sum
City Murder and Nonnegligent Manslaughter	231
City Rape	1410
City Robbery	5738
City Aggravated Assault	17058
City Burglary	10656
City Larceny/Theft	61982
City Motor Vehicle Theft	799
City Arson	34

Appendix B

Campus and Surrounding Area Crime Reported, by Crime and by Type of Campus Safety, in Accordance with the Clery Act and the UCR

Table B1

Campus Crimes Reported, by Crime and by Type of Campus Safety in Accordance with the Clery Act and the UCR

	Campus Safety or Police Department	
	Public Safety Office	Campus Police
	Sum	Sum
Clery Act Murder Nonnegligent Manslaughter	0	0
Clery Act Negligent Manslaughter	0	0
Clery Act Forcible Sex Offenses	53	394
Clery Act Robbery	3	12
Clery Act Aggravated Assault	9	44
Clery Act Burglary	35	270
Clery Act Motor Vehicle Theft	0	33
Clery Act Arson	1	10
UCR Murder and nonnegligent manslaughter	0	0
UCR Rape	1	72
UCR Robbery	0	10
UCR Aggravated Assault	0	57
UCR Burglary	14	153
UCR Larceny-Theft	38	2161
UCR Motor Vehicle Theft	0	25
UCR Arson	0	5

Appendix C

Bivariate Correlation Among Independent Variables: Campuses with Campus Police Departments

Table C1

Bivariate Correlation Among Independent Variables and Personal/Violent Crime Rate: Campuses with Campus Police Departments

		Personal/Violent Crime Rate Clery Act	Minority Students	Part-time Students Total
Minority Students	Pearson Correlation	-.252*		
Part-time Students Total	Pearson Correlation	-.354**	.834**	
2-yr institutions Completers within 150% of normal time total)	Pearson Correlation	-.642*	.319	.569*

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Appendix D

Bivariate Correlation Among Independent Variables: Campuses with Campus Security Departments

Table D1

Bivariate Correlation Among Independent Variables and Total Crime Rate: Campuses with Campus Security

	Total Clery Act Crime Rate	Size and Setting	Dormitory Capacity	4-year Institutions Graduation Rate	% 16+ in the Civilian Workforce
Size and Setting	.560**				
Dormitory Capacity	.546*	.677**			
4-yr Institutions	.524*	.646**	.984**		
Graduation Rate					
% 16+ in the Civilian	-.436*	-.324	-.541*	-.582*	
Workforce					
Is the School a Member	.447*	.688**	.504	.536*	-.302
of the NCAA					

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table D2

Bivariate Correlation Among Independent Variables and Personal/Violent Rate: Campuses with Campus Security Departments

	Personal/Violent Crime Rate Cleary Act	Minority Instructional Staff	Size and Setting	Dormitory Capacity	4-year Institutions Graduation Rate
Minority Instructional Staff	.461*				
Size and Setting	.491*	.241			
Dormitory Capacity	.537*	.753**	.677**		
4-year Institutions Graduation Rate	.509*	.763**	.646**	.984**	
Is the School a Member of the NCAA	.598**	.271	.688**	.504	.536*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).