TERROR ON CAMPUS:
ANALYZING MACRO LEVEL FACTORS OF COLLEGES THAT CONTRIBUTE TO
FORCIBLE RAPE

by

LAKESHA MARTIN

SHELLY A. MCGRATH, COMMITTEE CHAIR
KATHRYN D. MORGAN
LISA B. SHARLACH

A THESIS
Submitted to the graduate faculty of The University of Alabama at Birmingham,
in partial fulfillment of the requirements for the degree of
Master of Science

BIRMINGHAM, ALABAMA

2014
TERROR ON CAMPUS:
ANALYZING MACRO LEVEL FACTORS OF COLLEGES THAT CONTRIBUTE TO FORCIBLE RAPE

LAKESHA MARTIN

MASTER OF SCIENCE IN CRIMINAL JUSTICE

ABSTRACT

Rapes on college campuses have been a major problem in the United States and alarming numbers of this crime occurring in our colleges and universities call for attention in this matter to provide solutions to reduce or prevent the incident of rape on campus. Institutions possess certain characteristics that may contribute to rape on campuses. This explanatory study analyzes different factors of institutions on a macro level basis to understand which factors significantly contribute to the likelihood of forcible rapes. Two hundred U.S. colleges and universities are used in this data sample to analyze their institutional demographic factors and situational factors to determine the relationship to campus rape. Reported numbers of forcible rape from the schools from academic years 2010-2012 were gathered and analyzed. Results found that an institution’s percentage of students living on campus, total student population, percentage of male students enrolled, and location in an urban setting rather than a non-urban setting significantly contributed to forcible rape on campus. Policy implications such as effective campus rape prevention programs are discussed.

Keywords: forcible rape, institutional demographic factors, situational factors
TABLE OF CONTENTS

ABSTRACT .......................................................................................................................... ii

LIST OF TABLES ................................................................................................................ iii

CHAPTER

1 INTRODUCTION/PURPOSE OF THE STUDY .......................................................... 1

2 REVIEW OF RELATED LITERATURE ........................................................................ 3

   Institutional Demographic Factors .............................................................................. 4
   College Setting ............................................................................................................ 4
   Race ............................................................................................................................. 6
   Greek Affiliated ......................................................................................................... 7
   Situational Factors .................................................................................................... 9
   Alcohol and Drug Use .............................................................................................. 9
   Theoretical Consideration: The Routine Activities Theory .................................... 11

3 RESEARCH QUESTION AND HYPOTHESES ......................................................... 14

4 METHODOLOGY ........................................................................................................ 15

   Data ............................................................................................................................. 15
   Measures/Variables .................................................................................................. 16
   Analytic Strategy ...................................................................................................... 19

5 RESULTS .................................................................................................................... 21

6 DISCUSSION AND CONCLUSION ........................................................................ 31

   Limitations ................................................................................................................ 32
   Future Research ........................................................................................................ 33
   Policy Implications .................................................................................................. 34

7 LIST OF REFERENCES ............................................................................................... 37

8 APPENDIX ................................................................................................................ 41

   A INSTITUTIONS USED IN THE SAMPLE ............................................................. 41
   B IRB APPROVAL FORM ......................................................................................... 45
LIST OF TABLES

1  Descriptive Statistics for Macro Level Factors in College Forcible Rape ..........22

2  Independent Sample T-Test Comparing Forcible Rapes for Nominal Level Measures ..................................................................................................................23

3  Correlations among Macro Level Factors ........................................................................25

4  Zero-Inflated Negative Binomial Regression Analyzing the Effect of College Characteristics on Number of Forcible Rapes, 2010-2012 (The Negative Binomial Component) ..........................................................................................................................28

5  Zero-Inflated Negative Binomial Regression Analyzing the Effect of College Characteristics on Number of Forcible Rapes, 2010-2012 (The Logistic Component) ..........................................................................................................................30
CHAPTER 1
INTRODUCTION/PURPOSE OF THE STUDY

Rape on college campuses is a major problem in the United States (Patitu, 1998). The focus on college rape is important to provide solutions in reducing and preventing the incident of rape on college campuses therefore making campuses safer. College and university campuses may have characteristics that contribute to the crime of rape. Two hundred colleges and universities will be used in this study to analyze their institutional demographics and situational factors that may contribute to rape on college campuses.

What exactly is rape? Rape is a harsh form of sexual assault. The Bureau of Justice defines rape as forced sexual intercourse including both psychological coercion as well as physical force; forced sexual intercourse means penetration by the offender (Office of Justice Programs, n.d.). In December 2011, the Federal Bureau of Investigation director approved the new definition of rapes as “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” (Department of Justice, 2012). The revision of this definition helps ensure justice for rape victims and accounts for any form of rape.

This study will focus on forcible rape as it relates to demographic factors on college campuses. Forcible rape is any sexual act directed against another person,
forcibly and/or against that person’s will; or not forcibly or against the person’s will where the victim is incapable of giving consent (Office of Justice Programs, n.d.). The most common form of rape occurring on college campuses is date or acquaintance rape (Pryor & Hughes, 2013). The legal definition of date rape is the forcible sexual intercourse by an individual who is a known acquaintance of the victim on a voluntary social engagement such as a date which the victim does not intend on engaging in sexual activity (The Free Dictionary by Farlex). Female college students know their assailants 90 percent of the time (Rich, Utley, Janke, & Moldoveanu, 2010). Studies of female college students have revealed that fear of stranger rape precede that of acquaintance or date rape (Hickman & Muelenhard, 1997) because the average female college student would not consider unwanted sex with an acquaintance they know as a serious sexual assault or a rape at all (Hilinski, Pentecost Neeson, & Andrews, 2011).
CHAPTER 2

REVIEW OF RELATED LITERATURE

Parents of college students may feel the college campus is a safe haven, but attending college can result in female students having a greater chance of being a victim of sexual assault (Wolitzky-Taylor, Resnick, Amstadter, McCauley, Ruggiero, & Kilpatrick, 2011). In May 2008 after consuming 6 shots of Vodka at a student party, University of Pacific’s female basketball player Beckett Brennan caught a ride with two male university basketball players. Brennan claims that later that night, three basketball players raped her (Messick & Velie, 2011). In February 2010, University of Missouri student and competitive swimmer Sasha Menu Courey enjoyed a night out drinking with friends. Afterwards Courey engaged in consensual sex with a university football player. Months later Courey noted in her personal journal and reported to a rape crisis counselor that after the consensual sex with the football player occurred, another football player entered the room and raped her (Howell & Vercammen, 2014). In August and September 2013, there were three separate rape incidents reported to the police that occurred on the University of Texas Arlington campus with the most recent occurring in a fraternity house. During this investigation of the three rape cases, five fraternities were suspended by the University for hosting underage drinking parties conducive to campus rape (Delatte, 2013). Unfortunately, cases like these are not rare. These are only a few campus rape stories that have been publicized in the media. When the factors of a college campus including co-ed living, no parents, fewer restrictions, and more freedom coincide, they
can contribute to a setting that is conducive to rape (Jackson & White, 2004). College campus rapes have been and will continue to be a topic of research.

College women are at a greater risk of rape than women in the general population. Jackson, Gilliland, and Veneziano (2006) found that single women between the ages of 18 and 24 who attended college had the highest risk of victimization. An ABC News network report (Sealy, n.d.) found of female college students, approximately 1.7 percent reported being raped, 1.1 percent said they were victims of attempted rape, and another 1.7 percent reported being coerced into having sex.

The rate of sexual assault victimization (including attempted and completed) on U.S. college campuses is increasing (Krebs, Lindquist, Warner, Fisher, & Martin, 2007). In 1997, a National Institute of Justice (NIJ) study estimated between one-fifth and one quarter of women were victims of completed or attempted rape during their college careers. Another study found that during an academic year, 2 to 3 percent of college women experience forcible rape (Krebs et al., 2007). Other sources have found that every 21 hours a rape occurs on an American college campus (Crisis Connection). According to the Washington Post, the 2008 Department of Justice data reported that colleges with 6,000 or more students average one rape per day in a school year (Neel, 2013).

Institutional Demographic Factors

A college or university’s institutional demographic factors may play a role in the number of rapes occurring on campus. Certain macro level factors may correlate to rape on campus including the percentage of students residing on campus, percentage of males in attendance, racial make-up of the students, the student population, whether the
institution is private or public, whether the institution is religiously affiliated or not, the campus size, the campus setting, and the number of fraternity chapters for the college. There is little to no previous research done on the correlation between forcible rapes on college campuses and the institution’s demographics, number of students living on campus, percent of the population that is male, whether the institution is public or private, and campus size. However, in previous studies, the college setting, Greek affiliation, and race have been compared to campus rapes.

*College Setting*

A college’s location can contribute to the number of rapes on that campus. Since the rate of rapes varies by school, type of school, and region, certain schools may be more prone to a higher rate of rapes than others. Sampson (2011) explains that private colleges and major universities have higher than national average rates of rape. One study conducted by Haywood and Swank (2008) on rape attitudes for rape myths among college students found that students at the college in a rural setting were less likely to accept rape myths and less likely to criticize the victims of rape compared to their urban counterparts. Thirty four percent of males from a church-affiliated liberal arts college admitted to some proclivity to rape and other force in sexual situations (Osland et al., 1996). These results are similar to those found among male college students of large university campuses. A Rutgers’ School of Criminal Justice webpage states that larger cities with the largest populations have the highest rates of forcible rape in the U.S. This statement is also supported by Fisher, Cullen, and Turner’s (2000) *Sexual Victimization of College Women*, which estimates that women at a college with a female population of 10,000 could experience more than 350 rapes per year.
Race

The racial makeup of a college student body may affect the number of forcible rapes occurring on campus as it relates to both the race of the victim and offender. Women of any ethnicity are sexually assaulted or raped on campus. Porter and Williams (2011) sampled over 1000 college students at a New York college campus using measures to investigate the incidents of sexual violence. In this study, students who were members of a racial minority were found to be significantly more likely to be raped in college. This is also supported by Kalof (2000) which provided a study sampling almost 400 African American, Caucasian, Hispanic, and Asian undergraduate women on sexual victimization. The author found that African American women had the highest incidents of forced sexual intercourse through verbal threats or pressure while in college. Other studies suggest that African American women are the most common victims of rape. This may be due to the rape myth mentioned by Sapp, Farrell, Johnson, and Hitchcock (1999) that African American women cannot be raped because they are promiscuous. Another study conducted in 2006 found that of the 11.5 percent of college women who reported their rape were majority Caucasian (Wolitzky-Taylor et al., 2011). This study is suggesting that even though minorities, especially African American women, make up the majority of campus rape victims, Caucasians are more likely to report the incident.

Underreporting of sexual assaults including rape against African American women has become a major topic in research on the crime. Black women are more likely not to report a rape and white women are more likely to report it (Varelas & Foley, 1998). According to Varelas and Foley (1998), race perceptions on rape may date back to slavery days when if White slave owners raped Black women, there was no punishment.
Also, during these times a Black man having a sexual relationship with a White woman, even if consensual, was punished severely (Varelas & Foley, 1998). This supports a rape myth that if there is a Black perpetrator and a White victim, the victim is more likely to be believed than vice versa. Therefore, the race of both victim and perpetrator are considered in rape myths and rape myths have serious implications for the legal system. This could be a reason why Black female victims are reluctant to report rape to the police.

While there are several studies analyzing the most common race victimized by college rape, there is little research analyzing the most common perpetrator of college rape as far as race. However, according to Foubert and Cremedy (2007), Asian, Caucasian, and African American men commit sexual assaults at equal levels, but Asian men possess the most negative rape myths and are more likely to blame the victim for the assault and deflect the responsibility than men of other races.

**Greek Affiliated**

Research suggests that male organizations including Greek-affiliated fraternities possess strong rape-supportive attitudes and rape myths. Greek affiliation can be a strong predictor of campus rape (Burnett et al., 2009; Sanday, 1990) and interactions of men and women in a fraternity setting can make it a dangerous environment where there is a greater likelihood of rape occurring. Colleges and universities that have large Greek life are more likely to have more social activities occurring than colleges with little or no Greek system as part of the school’s campus life. Over 90 percent of all gang rapes on campus involve fraternity men (Martin & Hummer, 1989). Most studies focus on the
correlation among fraternities, alcohol usage, and sexual assault on campus (Martin & Hummer, 1989). Only a few studies focused on the direct correlation of Greek affiliation to sexual assault excluding alcohol usage. Fraternities make up a socio-cultural context that encourages the sexual coercion of women (Martin & Hummer, 1989). Earlier research found that the following conditions support the notion that sexual assault on women in college involve fraternity men: excessive alcohol drinking, isolation from external monitoring, negative and derogatory treatment of women, the use of pornography, support of violence, and the sense of competition among other males (Martin & Hummer, 1989).

Sanday (1990) conducted interviews with male fraternity members on different campuses to understand how male organizations such as fraternities view women and why they talk about them as objects. Fraternity members see themselves as “blameless” and that women “asked for it” (referring to sexual intercourse). She also found that they view gang rape as an act of initiation and comraderie. Many of these women who had sex with fraternity members were semi-conscious or unconscious at the time of their sexual encounter, which constitutes rape. Sanday (1990) further explains that in the male bonding groups such as fraternities or sports teams, brotherhood is important and gang rapes or “pulling a train” on a female was viewed as a ritual of brotherhood and in most cases are rewarded. Sanday (1996) explains that the discourse, rituals, sexual ideology, and practices involved in fraternities make fraternity environments rape prone.

Boeringer, Shehan, and Akers’s (1991) research focused on the question are the rapes committed by fraternity members caused by an individual personality issue or committed as a reflection of the fraternity as a whole? Fraternity members were
significantly more likely to commit non-physical sexual assault than non-fraternity members with the use of coercion, drugs, and alcohol (Boeringer et al., 1991). Men in fraternities have discussions and beliefs about women and sexuality. They consider men who have sex excessively as “studs” and women who have sex excessively as “sluts” (Burnett et al, 2009).

Recent headlines have been focused on an email from an individual in a fraternity. In mid-2013, a member of Georgia Institute of Technology’s Phi Kappa Tau fraternity sent an email to members of his fraternity coaching them on how to speak to ladies at frat parties and how to coerce them into having sex with them before the night is over (Jacobs, 2013). This email became known as “Luring Your Rapebait” taken from the email’s subject line. This email supports the notion that fraternities contribute to the rape culture and tend to encourage rape of college women. Per Jacobs (2013), the fraternity later placed itself on probation and suspended the member accused of sending the email. This recent uproar supports Sanday’s (1990) findings of the goals of fraternities and as one fraternity member stated, "To get em drunk and go for it."(Sanday, 1990; p. 2).

Situational Factors

Alcohol and Drug Use

Alcohol and drug usage are situational factors that may correlate to forcible rapes occurring on college campuses. While some perpetrators physically force women or threaten them with physical force to engage in sexual activity (physically forced sexual assault or rape), other perpetrators use alcohol and/or drugs to commit rape. This is called incapacitated rape and refers to incidents where the victim is incapacitated and unable to
legally consent to the sexual act (Krebs et al., 2009). Alcohol and drugs play a major role in a college’s rape culture. The more a college student drinks the more likely they are to be a victim of crime on and off campus (Unruh, Boan-Lenzo, Randolph, & Wells, 2013). As college rape continues to be a problem on campuses, so is alcohol consumption and the use of illicit drugs. According to Borsari, Hustad, Mastroleo, O’Leary Tevyaw, and Barnett (2012), tens of thousands of college students receive campus alcohol violations each year. The most common alcohol violations include possession of alcohol, being in the presence of alcohol, behavioral problems while intoxicated of alcohol, and alcohol-related medical complications (Bosari et al., 2012).

College drinking and drug usage leads to negative consequences. Alcohol and drug abuse in college students may lead to unprotected sex including being too intoxicated or incapacitated to know whether they had consensual sex or not. Alcohol operates as an aphrodisiac that increases sexual wants and desires (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001). It is the most common strategy used by men to coerce women into having sex. Rohypnol, sometimes called the “date-rape drug” and other similar drugs cause drowsiness and memory loss (Dervarics, 1996). Slipping drugs like this into an unsuspecting woman’s drink is another known strategy to coerce sex.

Some consider drinking on college campus as a social ritual, a rite of passage, and among traditional beliefs and customs (Unruh et al., 2013). Some will also agree that a college campus environment encourages heavy alcoholic consumption. This is because alcohol is available at most college functions. Heavy drinking environments such as parties present high levels of risk for sexual victimization (Brooks & Kelley-Baker, 2013). This includes heavy drinking for both victim and offender and this heavy drinking
can be associated to sexual risk-taking behavior. National surveys associated with the National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported a greater percentage of college students age 18 – 24 drinking 5 or more drinks per occasion than non-college students (Hingson, 2010). Heavy drinking occurs at college parties to enhance the social interaction among the students. Unruh et al. (2013) discussed a study conducted by the American College Health Association asking students to report the number of drinks they consumed at their last party. Per Unruh et al. (2013), 38.5 percent had 4 or less drinks, 7 percent reported having 5 drinks, 5.4 percent had 6 drinks, and 15.1 percent reported having 7 or more drinks. This is an alarming number of drinks consumed at a college party.

In a study involving college men, the researchers found that men who reported that they drank heavily were more likely than other men to report committing some form of sexual assault (Abbey et al., 2001). Increased alcohol consumption in social settings leads to misinterpreting a woman’s cues of not wanting to have sex. According to Abbey et al. (2001), college men who committed sexual assault while intoxicated thought alcohol would increase female sexuality and desires more than did college men who committed sexual assault sober. A heavily intoxicated female can be seen as an easy target for sex.

Theoretical Consideration: the Routine Activities Theory

According to Schwartz, DeKeseredy, Tait, and Alvi (2001), routine activities theory helps to explain high rates of rape on the college campus. According to Schwartz et al. (2001), Cohen and Felson’s (1979) routine activities theory states that a crime
occurs when three elements come together in any given space and time: (1) an accessible target, (2) the absence of capable guardians that could intervene, and (3) the presence of a motivated offender. College rape has all three elements of this theory: motivated offenders - male college students, suitable targets – college females, and the absence of capable guardians – no parents who are able to intervene. Because the college setting has these elements, a college campus can be considered a “hot spot”. Some locations or “hot spots” are more likely to be scenes of crimes. Because college student victims are more likely to be victimized by other college students, a female student’s proximity to campus puts her in the hot spot, because this is near likely offenders (Schwartz et al., 2001). The routine activities theory suggests that hot spots are a guardianship-free zone because law enforcement on campuses barely punishes college men for sexually abusing female students.

Female college victims of rape are also considered suitable targets, because they are less likely to report the crime or blame themselves for it. This causes them to become more “suitable” and motivated offenders to become more “motivated”. Women on campus can also be considered suitable targets due to the large amount of alcohol they consume. Supporting this theory as a reason for crime, Jackson et al. (2006) states that due to female activities away from home in environments that bring them closer to potential offenders, their likelihood of victimization increases. College women are leaving home and entering an environment that influences their victimization. The college environment increases a female college student’s vulnerability to victimization by increasing their contact to potential rape offenders. Also, social activities around strangers decrease the number of capable guardians (Jackson et al., 2006).
One criticism of the routine activity theory is the motivation of the “motivated” offender (Schwartz et al, 2011). Researchers of the routine activities theory as it relates to college rape challenge the lack of concern of the motivation of the crime. One important element of this theory is that there must be offenders who are motivated or likely to commit the crime if the opportunity presents itself. Antagonists of this theory believe that these persons (male college students) should not be considered “motivated” since only a few have prior criminal records.
CHAPTER 3

RESEARCH QUESTION AND HYPOTHESES

The purpose of this research is to understand the macro level factors that are associated with forcible rapes on college campuses. I examined the following hypotheses:

Hypothesis 1: College campuses located in major urban areas will have a higher number of forcible rapes than campuses located in non-urban settings.

Hypothesis 2: Colleges with a higher percentage of male college students (“motivated” offenders) enrolled will have a higher number of forcible rapes than colleges with a lower percentage of male students.

Hypothesis 3: Colleges that are predominantly white will have fewer numbers of forcible rapes than colleges that are predominantly minority.

Hypothesis 4: College campuses with a higher number of fraternities will have a higher number of forcible rapes than those with a small number or no fraternities.

Hypothesis 5: Colleges with higher numbers of disciplinary actions and arrests for liquor law violations and drug abuse will have higher numbers of forcible rape.
CHAPTER 4

METHODOLOGY

Data

The current study used data from 200 US colleges and universities as a sample. These colleges and universities were randomly picked from Niche/College Prowler’s list of 1,063 schools. Niche/College Prowler is a website that provides information about grade schools and colleges. Niche/College Prowler also ranks different colleges and universities across the country with grade letters on the presence and engagement level of their Greek systems (A+ for schools with a highly engaged Greek system to N/A for schools with no Greek system at all). The schools’ rankings are recoded as A-1, B-2, C-3, and N/A-4. Schools were ranked using a calculation of student survey responses, open-ended student reviews conducted by Niche/College Prowler, and statistical data. Two hundred of the 1063 schools were randomly selected by using a number randomizer at the website: randomizer.org. This website allows you to select the sample amount and provides a random list of numbers.

The college/university demographic measures used in the study came from National Center of Education Statistics or NCES (http:nces.ed.gov/collegenavigator/), College View (http:collegeview.com/index.jsp), and US Department of Education: Office of Postsecondary Education (http:ope.ed.gov/security). The NCES website is a governmental website that provides demographic information for educational institutions across the country. This website was used to record the racial make-up of each institution. College View is a website that provides general information on colleges useful to future
students on deciding which college to attend. This website was utilized to record the
percent of students living on campus, the percentage of male students enrolled, the
student population, the institutions’ control, religious affiliation, campus size, campus
setting, and the number of fraternities. The US Department of Education: Office of
Postsecondary Education has a cutting tool that provides a campus's last three years of
safety-and security-related statistical data, along with general information about the
campus. It reflects reporting of crimes including murder, forcible rape, arson, robberies,
liquor law violations, drug abuse, etc. The crime statistics found on this website represent
alleged criminal offenses reported to campus security authorities and/or local law
enforcement agencies. Therefore, the data collected do not necessarily reflect
prosecutions or convictions for crimes. Because some statistics are provided by non-
police authorities, the data are not directly comparable to data from the FBI's Uniform
Crime Reporting System which only collects statistics from police authorities. The US
Department of Education: Office of Postsecondary Education website also provides
definitions of various crimes. This website was utilized to get the number of liquor law
violations and drug abuse violations resulting in disciplinary actions and arrests.

Measures/Variables

*Dependent Variable*

To study rape on college campuses the number of on-campus reported forcible
rapes were used. The data is limited to only incidents of rape that occurred on campus
reported to the appropriate law enforcement agency. The dependent variable used in the
current study is the number of forcible rapes. In this study, a forcible sex offense is
defined as any sexual act directed against another person, forcibly and/or against that person’s will; or not forcibly or against the person’s will where the victim is incapable of giving consent (US Department of Education). This study only includes rapes that were reported to a law enforcement agency.

**Independent Variables**

The independent variables used in this study include the percentage of students living on campus (includes on campus dormitories, student family housing facilities, and Greek-life housing), the control (whether a college is public or private), the percent male students who attended the college, campus size (acreage size of the campus), campus setting (located in a major urban area or non-urban area [regional town/city or rural town setting]), student population, percent minority, the number of fraternity chapters, the number of liquor law violation arrests, the number of liquor law violation disciplinary actions, the number of drug abuse violation arrests, and the number of drug abuse violation disciplinary actions. The control variables include: percentage of students living on campus, religious affiliation, campus size, student population (number of undergraduates, number of graduates), and percent minority. All of these variables are taken from College View’s website and are based on 2012-2013 school information except percent minority (taken from NCES) and liquor and drug abuse law violations resulting in disciplinary actions and arrests (taken from the US Department of Education cutting tool).

The variable religious affiliation is recoded as not religiously affiliated=0 and religious affiliated=1. Campus size is coded as small=0, medium=1, large=2, and very
large=3. Student population is coded as the total number of students who attend the college. The percent minority variables are measured as the percent of non-white students who are enrolled at the college or university. The independent variables of interest include: campus setting, public or private affiliation, percent male, and the number of fraternities. The variable campus setting is recoded as rural area=1, rural town=2, regional town=3, regional city=4, and major urban area=5. The type of institution variable is recoded as private=0 and public=1. Percent male is coded as the percent of male students enrolled in the university or college. The numbers of arrests from liquor law violations, the number of disciplinary actions from liquor law violations, the number of arrests from drug abuse violations, and the number of disciplinary actions from drug abuse are taken from the US Department of Education (based on the academic years of 2010-2012 and include on-campus student housing facilities).

In this study, liquor law violations (relating to the numbers reported for both disciplinary actions and arrests) are defined as the violations of state or local laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including driving under the influence and drunkenness. Included in this classification are the manufacture, sale, transporting, furnishing, possessing, etc., of intoxicating liquor; maintaining unlawful drinking places; bootlegging; operating still; furnishing liquor to a minor or intemperate person; underage possession; using a vehicle for illegal transportation of liquor; drinking on train or public conveyance; and attempts to commit any of the above (US Department of Education). Drug abuse violations (relating to the numbers reported for both disciplinary actions and arrests) are defined as the violation of laws prohibiting the production,
distribution and/or use of certain controlled substances and the equipment or devices utilized in their preparation and/or use. The unlawful cultivation, manufacture, distribution, sale, purchase, use, possession, transportation or importation of any controlled drug or narcotic substance; arrests for violations of state and local laws, specifically those relating to the unlawful possession, sale, use, growing, manufacturing and making of narcotic drugs (US Department of Education).

Analytic Strategy

To address the research question both the total number of forcible rapes and non-forcible rapes that occurred on campus between 2010 and 2012 were analyzed. To analyze the data collected, I employ several different statistical techniques including t-tests, a correlation matrix, factor analysis, and a negative binomil regression model. A multivariate framework is used to investigate which variables are significantly related to the numbers of rapes that occurred. Descriptive statistics, a correlation matrix, and a negative binomial regression will be run to analyze the data. T-test will be used to compare the means of the dependent variables when the independent variable has two groups. These variables will include public or private college/university, campus size, and campus setting. The correlation matrix includes all of the variables to see if they are significantly related to each other and to ensure there is no collinearity among the variables. A factor analysis is run to resolve collinearity problems.

Ninety three percent of the sample had zero non-forcible on campus rapes reported while 18.5 percent of the sample had zero forcible rapes reported. A negative binomial model is best suited for the data because of its ability to analyze count data and
over-dispersion of college campuses with zero non-forcible and forcible rapes (Osgood, 2000). Since the population size of the schools being used varied greatly, the rate of rape is inappropriate to use. For a small population size, even one additional rape will increase the rate substantially while for a larger population the rate will not increase as severely. Low counts of crime are common for specific crimes, including forcible and non-forcible rape due to non-reporting (Rennison, 2002). The problem with using rates when assessing these types of crime is that the rate depends on population size and the variation of the population sizes across schools violates the assumption that all counties are homogenous (Osgood, 2000). Another problem with rates is that a normal error distribution cannot be assumed when counts are small. There is a censoring at zero that is dependent on sample size, which can potentially bias the results. Over dispersion implies that the variance exceeds the mean and that there is more variability. The negative binomial model adjusts the variance independently of the mean. A zero-inflated regression model is also used to account for the excessive amount of zeroes for non-forcible rape due to various reasons of underreporting (Osgood, 2000). The models will be run using the negative binomia model first. When the negative binomial model reduces itself to the Poisson model, the later of the two results will be presented.
CHAPTER 5

RESULTS

Table 1 presents descriptive statistics for the 200 colleges/universities. The means, medians, and standard deviations are presented for each of the independent and dependent variables. Of the 200 colleges and universities researched, 122 (61 percent) are private institutions and 78 (39 percent) are public institutions. 167 (84.3 percent) have a small/medium sized campus while 31 (15.7 percent) have a large/very large campus. 113 (57.1 percent) of the institutions are located in a non-urban (rural area, rural town, regional town, and regional city) and 85 (42.9 percent) are located in an urban setting. The mean percentage of male students is 43 percent. The mean student population is 9,450 with the largest institution having 51,721 students and the smallest institution only having 279 students. The mean for non-white students is 38 percent. The institutions have on average about 8 fraternities and 5 sororities.

Table 1 also shows the average total number of disciplinary actions due to liquor law violations over the three years is 487 (with the highest at 3,432 and the lowest reporting no disciplinary actions). The average total number of disciplinary actions due to drug abuse violations over the three years is 118 (with the highest number at 846 and the lowest at 0). The average total number of liquor law violation arrests is 80 (highest at 2230 and lowest at 0). The average total number of arrests of drug abuse violations is 47 (highest at 779 and the lowest at 0). The average total number of forcible rapes is 8. The
school with the highest number of forcible rapes reported 84 rapes in the 2010-2012 year timeframe.

Table 1: Descriptive Statistics for Macro Level Factors in College Forcible Rape

<table>
<thead>
<tr>
<th></th>
<th>N (%)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>College Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private (1)</td>
<td>200 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public (2)</td>
<td>122 (61%)</td>
<td>78 (39%)</td>
<td></td>
<td>1.39</td>
<td>1</td>
<td>.489</td>
</tr>
<tr>
<td><strong>Campus Size</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (1)</td>
<td>198 (62%)</td>
<td>79 (39.9%)</td>
<td>88 (44.4%)</td>
<td>20 (10.1%)</td>
<td>11 (5.6%)</td>
<td></td>
</tr>
<tr>
<td>Medium (2)</td>
<td>79 (39.9%)</td>
<td>88 (44.4%)</td>
<td>20 (10.1%)</td>
<td>11 (5.6%)</td>
<td></td>
<td>1.39</td>
</tr>
<tr>
<td>Large (3)</td>
<td>88 (44.4%)</td>
<td>20 (10.1%)</td>
<td>11 (5.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Large (4)</td>
<td>20 (10.1%)</td>
<td>11 (5.6%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Small v. Large Campuses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small/med (0)</td>
<td>198 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small/med (1)</td>
<td>167 (84.3%)</td>
<td>31 (15.7%)</td>
<td></td>
<td></td>
<td></td>
<td>2.831</td>
</tr>
<tr>
<td>Large/very large (1)</td>
<td>31 (15.7%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Campus setting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural area (1)</td>
<td>198 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural town (2)</td>
<td>198 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional town (3)</td>
<td>26 (13.1%)</td>
<td>30 (15.2%)</td>
<td>56 (28.3%)</td>
<td>85 (42.9%)</td>
<td></td>
<td>1.076</td>
</tr>
<tr>
<td>Regional city (4)</td>
<td>26 (13.1%)</td>
<td>30 (15.2%)</td>
<td>56 (28.3%)</td>
<td>85 (42.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major urban area (5)</td>
<td>26 (13.1%)</td>
<td>30 (15.2%)</td>
<td>56 (28.3%)</td>
<td>85 (42.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban campus</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-urban (0)</td>
<td>198 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban (1)</td>
<td>198 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%Living on Campus</td>
<td>191 (100%)</td>
<td>7</td>
<td>100</td>
<td>56.71</td>
<td>55</td>
<td>24.014</td>
</tr>
<tr>
<td>%Male population</td>
<td>200 (100%)</td>
<td>0</td>
<td>84</td>
<td>42.59</td>
<td>43</td>
<td>10.391</td>
</tr>
<tr>
<td>Population</td>
<td>200</td>
<td>279</td>
<td>51721</td>
<td>9450.16</td>
<td>4939.5</td>
<td>10058.19</td>
</tr>
<tr>
<td>%Non-white</td>
<td>196</td>
<td>5</td>
<td>99.60</td>
<td>37.78</td>
<td>33.15</td>
<td>20.96</td>
</tr>
<tr>
<td>Fraternities</td>
<td>175</td>
<td>0</td>
<td>62</td>
<td>7.56</td>
<td>4</td>
<td>8.674</td>
</tr>
<tr>
<td>Total liquor law violations disciplinary actions (2010-2012)</td>
<td>200</td>
<td>0</td>
<td>3432</td>
<td>486.67</td>
<td>216</td>
<td>1.823</td>
</tr>
</tbody>
</table>
Table 2 presents the results for the T-test comparing the number of forcible rapes on campus with those at private versus public colleges, urban versus non-urban, and large versus small campuses. The t-tests for college type and campus size are significant. At the bivariate level there is a significant difference between private and public colleges/universities and the number of forcible rapes reported. There is also a significant difference between small/medium campuses and large/very large campuses. Public colleges (mean=11.19) and large/very large colleges (mean=17.00) have significantly more on campus forcible rapes than private colleges (mean=5.86) and small/medium colleges (mean=6.38). Campuses located in urban settings are no more likely to have forcible rapes than are campuses located in non-urban setting.

Table 2: Independent Sample T-Test Comparing Forcible Rapes for Nominal Level Measures

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>T-test statistic</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>College Type</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>5.86</td>
<td>-3.118*</td>
<td>.002</td>
</tr>
<tr>
<td>Public</td>
<td>11.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Campus Size</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small/Medium</td>
<td>6.38</td>
<td>-3.120*</td>
<td>.004</td>
</tr>
<tr>
<td>Large/Very Large</td>
<td>17.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Campus Setting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-urban</td>
<td>8.41</td>
<td>.451</td>
<td>.652</td>
</tr>
<tr>
<td>Urban</td>
<td>7.68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Equal Variances Not Assumed
Table 3 presents the results for the correlation matrix. Total population and the number of fraternities are highly correlated with a Pearson’s $R^2$ of .714. Total drug abuse arrests is highly correlated with liquor law arrests (.836) and the drug abuse disciplinary and liquor law disciplinary actions are highly correlated (.719). Due to multicollinearity the liquor law arrests and the drug abuse arrests were factored together (Cronbach’s Alpha = .767). To check for multicollinearity the tests for variance inflation factor were conducted. After factoring the two types of arrests together there were no VIFs that exceed the value of 4 and therefore all of the variables can be run in the model without any biases (Lanier & Huff-Corzine, 2006).
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. % Living on Campus</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. % Male</td>
<td>.000</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Population</td>
<td>-.512*</td>
<td>.252*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. No. of Fraternities</td>
<td>-.293*</td>
<td>.357*</td>
<td>.714</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. % Non-white</td>
<td>-.030</td>
<td>-.107</td>
<td>-.016</td>
<td>-.053</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Campus Size</td>
<td>-.290*</td>
<td>.307*</td>
<td>.670</td>
<td>.537</td>
<td>-.097</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Campus Setting</td>
<td>-.158</td>
<td>-.148</td>
<td>.179</td>
<td>-.032</td>
<td>.326</td>
<td>-.039</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. College Type</td>
<td>-.536*</td>
<td>.146</td>
<td>.522</td>
<td>.470</td>
<td>-.076</td>
<td>.403</td>
<td>-.180</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Total Liquor Law Violation Arrests</td>
<td>-.221*</td>
<td>.117</td>
<td>.422</td>
<td>.541</td>
<td>-.197</td>
<td>.225</td>
<td>-.217</td>
<td>.372</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Total Liquor Law Disciplinary Actions</td>
<td>-.200*</td>
<td>.180</td>
<td>.521</td>
<td>.436</td>
<td>-.226</td>
<td>.495</td>
<td>.006</td>
<td>.226</td>
<td>.345</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Total Drug Abuse Violation Arrests</td>
<td>-.304*</td>
<td>.149</td>
<td>.510</td>
<td>.589</td>
<td>-.185</td>
<td>.346</td>
<td>-.202</td>
<td>.479</td>
<td>.836</td>
<td>.544</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>12. Total Drug Abuse Disciplinary Actions</td>
<td>-.194*</td>
<td>.211*</td>
<td>.412</td>
<td>.393</td>
<td>-.105</td>
<td>.440</td>
<td>.009</td>
<td>.239</td>
<td>.317</td>
<td>.719</td>
<td>.430</td>
<td>1.00</td>
</tr>
<tr>
<td>13. Total Forcible Rapes</td>
<td>-.103</td>
<td>.253*</td>
<td>.538</td>
<td>.617</td>
<td>-.106</td>
<td>.430</td>
<td>-.094</td>
<td>.240</td>
<td>.597</td>
<td>.467</td>
<td>.592</td>
<td>.410*</td>
</tr>
</tbody>
</table>

*p < .05
Table 4 presents the results of the Zero-Inflated Negative Binomial regression. Model 1 includes the control variables while model 2 includes campus size and setting, model 3 incorporates percent minority, model 4 includes number of fraternities, and model 5 includes the three liquor and drug violation measures. Model 1 shows that percent living on campus and student body population are significantly related to the number of total forcible on-campus rapes. Percent living on campus and population were positively associated with an increase of rapes on campus. In Model 2, percent living on campus and population were again significant along with percent male and urban setting. Percent living on campus, population and percent male were positively associated with an increase of rapes on campus while have the college located in an urban area was negatively associated with on campus rapes. Model 3 shows that percent living on campus, percent male, population, and urban setting were again associated with number of on campus rapes in the same direction as Model 2. Percent minority had no significant relationship with the number of on campus forcible rapes. In Model 4, percent living on campus, percent male, population, and urban setting were associated with number of on campus rapes. Again percent living on campus, percent male, and population were positively associated with the number of on campus rapes while the college being located in an urban setting was negatively related to the number of on campus rapes. The number of fraternities is not significantly associated with the number of on campus rapes. The final model included the three measures of liquor and drug violations. None of these three measures were significantly related to the number of forcible rapes on campus. When these measures are included, only the percent living on campus and student body population variables are associated with the number of on
campus forcible rapes. Percent living on campus is positively associated with number of rapes while the population is now negatively associated with on campus rapes. Overall, campuses with more students living on campus have higher number of on campus forcible rapes. For most of the models population had a positive association with on campus forcible rapes while in the final model the association was negative. In Models 1 through 4, the larger the student populations, the higher the number of on-campus forcible rapes occurred while in Model 5 the larger the student population, the fewer number of on campus forcible rapes. The impact of the population measures is smaller than that of the percent living on campus.
Table 4: Zero-Inflated Negative Binomial Regression Analyzing the Effect of College Characteristics on Number of Forcible Rapes, 2010-2012 (The Negative Binominal Component)

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Coef/exp(Coef) Z stat</th>
<th>Model 2 Coef/exp(Coef) Z stat</th>
<th>Model 3 Coef/exp(Coef) Z stat</th>
<th>Model 4 Coef/exp(Coef) Z stat</th>
<th>Model 5 Coef/exp(Coef) Z stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Living on Campus</td>
<td>.012/1.012 2.97*</td>
<td>.010/1.010 2.58*</td>
<td>.012/1.012 2.71*</td>
<td>.012/1.012 2.84*</td>
<td>.012/1.012 2.88*</td>
</tr>
<tr>
<td>Private/Public</td>
<td>.288/1.333 1.47</td>
<td>.060/1.062 0.29</td>
<td>.108/1.114 0.52</td>
<td>.087/1.091 0.41</td>
<td>.091/1.095 0.44</td>
</tr>
<tr>
<td>Percent Male</td>
<td>.015/1.015 1.87</td>
<td>.016/1.016 0.03*</td>
<td>.017/1.017 2.09*</td>
<td>.017/1.017 2.08*</td>
<td>.015/1.015 2.02</td>
</tr>
<tr>
<td>Population</td>
<td>.00005/1.00005 5.70*</td>
<td>.00006/1.00006 5.52*</td>
<td>.00006/1.00006 5.27*</td>
<td>.00005/1.00005 4.16*</td>
<td>-.00004/9999 2.97*</td>
</tr>
<tr>
<td>Urban</td>
<td>-.418/.658-2.58*</td>
<td>-.358/.699-2.06*</td>
<td>-.381/.683-2.19*</td>
<td>-.269/.764-1.57</td>
<td></td>
</tr>
<tr>
<td>Large Campus</td>
<td>-.166/.847-0.73</td>
<td>-.171/.843-0.74</td>
<td>-.152/.859-0.68</td>
<td>-.101/.990-0.04</td>
<td></td>
</tr>
<tr>
<td>Percent Minority</td>
<td>-.003/.997-0.69</td>
<td>-.004/.996-0.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Fraternities</td>
<td>.000/1.001 0.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Liquor Disciplinary Actions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Drug Disciplinary Actions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Liquor/Drug Arrests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>183</td>
<td>182</td>
<td>178</td>
<td>158</td>
<td>158</td>
</tr>
<tr>
<td>Intercept</td>
<td>-.248</td>
<td>.153</td>
<td>.154</td>
<td>.214</td>
<td>.007</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-.532.74</td>
<td>-.527.81</td>
<td>-.514.47</td>
<td>-.467.04</td>
<td>-.447.01</td>
</tr>
<tr>
<td>X²</td>
<td>62.15*</td>
<td>68.98*</td>
<td>67.33*</td>
<td>68.26*</td>
<td>87.42*</td>
</tr>
</tbody>
</table>

* p<.05
Table 5 presents the results of the Zero-Inflated Negative Binomial regression using a logistic component. The logistic component presents the results for the event never occurring (Cairns, Asante, Owusu-Agyei, Chandromahos, & Greenwood, 2013). Model 1 includes the control variables while model 2 includes campus size and setting, model 3 incorporates percent minority, model 4 includes number of fraternities, and model 5 includes the three liquor and drug violation measures. Again the population of the school is significant to the number of forcible rapes in models 1 and 3. Institutions with larger populations have decreased odds of having forcible rapes occur on campus. None of the other measures in the analyses had a significant impact on the odds of the university having forcible rapes not occur on campus.
Table 5: Zero-Inflated Negative Binomial Regression Analyzing the Effect of College Characteristics on Number of Forcible Rapes, 2010-2012 (The Logistic Component)

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Coef/exp(Coef) Z stat</th>
<th>Model 2 Coef/exp(Coef) Z stat</th>
<th>Model 3 Coef/exp(Coef) Z stat</th>
<th>Model 4 Coef/exp(Coef) Z stat</th>
<th>Model 5 Coef/exp(Coef) Z stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Living on Campus</td>
<td>-0.026/.974 -1.60</td>
<td>-0.025/.975 -1.41</td>
<td>-0.032/.969 -1.57</td>
<td>-0.035/.966 -1.53</td>
<td>-1.22/.295 -0.01</td>
</tr>
<tr>
<td>Private/Public</td>
<td>.106/1.112 0.10</td>
<td>-.283/.754 -0.22</td>
<td>-.129/.879 -0.12</td>
<td>.848/2.335 0.67</td>
<td>226.56/2.48* 0.02</td>
</tr>
<tr>
<td>Percent Male</td>
<td>-.019/.981 -0.76</td>
<td>-.013/.987 -0.49</td>
<td>-.008/.992 -0.29</td>
<td>.031/1.031 0.75</td>
<td>1.40/4.055 0.01</td>
</tr>
<tr>
<td>Population</td>
<td>-.0002/9998 -2.05*</td>
<td>-.0003/9997 -1.80</td>
<td>-.0003/9997 -2.17*</td>
<td>-.0003/9997 -1.64</td>
<td>-.002/9998 -0.01</td>
</tr>
<tr>
<td>Urban</td>
<td>-.192/.825 -.23</td>
<td>-.793/.452 -0.80</td>
<td>-.629/.533 -0.56</td>
<td>-.8.81/00014 -0.00</td>
<td></td>
</tr>
<tr>
<td>Large Campus</td>
<td>1.06/2.886 0.68</td>
<td>1.42/4.137 0.94</td>
<td>2.03/7.614 1.26</td>
<td>60.46/1.81* 0.02</td>
<td></td>
</tr>
<tr>
<td>Percent Minority</td>
<td>.027/1.027 1.63</td>
<td>.035/1.036 1.78</td>
<td>4.38/97.51 0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Fraternities</td>
<td>-.163/.850 -0.92</td>
<td>-.145/.736 -1.02</td>
<td>.010/1.010 0.00</td>
<td>-50.84/8.33* -0.02</td>
<td></td>
</tr>
<tr>
<td>Total Liquor Disciplinary Actions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Drug Disciplinary Actions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Liquor/Drug Arrests</td>
<td>-.599.02/7.06 -261</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| N                        | 183                             | 182                             | 178                             | 158                             | 158                             |
| Intercept                | -.248                           | .153                            | .154                            | .214                            | .007                            |
| Log Likelihood           | -532.74                         | -527.81                         | -514.47                         | -467.04                         | -447.01                         |
| X²                       | 62.15*                          | 68.98*                          | 67.33*                          | 68.26*                          | 87.42*                          |

*p < .05
CHAPTER 6
DISCUSSION AND CONCLUSION

The focus of this study was to analyze the macro level factors that are associated with forcible rapes on college campuses. Macro level factors including colleges’ and universities’ institutional demographics and situational factors are used to understand their relationship of the number of forcible rapes occurring on these campuses. The components of the routine activities theory including an accessible target, the absence of a capable guardian, and the presence of a motivated offender explains college campus rape are incorporated in the analysis. The analysis revealed the main characteristics of college campuses contributing to campus rape are the number of students living on campus, the numbers of males attending, whether the school is located in an urban setting, and the school’s population.

The results only support Hypothesis 1 and 2 that college campuses located in major urban areas or having a higher percentage of males attending will have a higher number of forcible rapes than campuses located in non-urban settings or colleges with lower percentages of males attending. However, the urban setting variable is no longer related to on campus rapes when the alcohol and drug disciplinary actions and arrests variables are taken into consideration. Hypotheses 3, 4, and 5 are not supported by the data. Schools with larger sized campuses, predominantly minority students enrolled, larger number of fraternity chapters, and higher numbers of disciplinary actions and
arrests for liquor law violations and drug abuse violations were not supported in contributing to on-campus forcible rape in this analysis. The institutional level measures explain the number of forcible rapes on campus rather than if a rape occurs or not. The findings of this analysis relates to the theory of routine activities theory as the more males attending a college and bigger the population (more motivated offenders), the more percent of students living on campus and bigger the population (more easily accessible targets), and the location being in a major urban area (larger environment with limited law enforcement or capable guardians).

Limitations

There are several limitations in the data used to analyze the number of forcible rapes on campuses. The main limitation is the actual number of forcible rapes due to underreporting. The numbers used in this analysis are only numbers of incidents reported to authority. Not all victims report their victimization of rape. In a related study, it was found that less than 5 percent of sexual victimization on college campuses was reported to law enforcement (Wolitzky-Taylor et al., 2011). Factors such as rape resulting in physical injuries or rape by a stranger offender are more likely to be reported to police and rape victims victimized by someone they know (an acquaintance) are less likely to report the incident (Wolitzky-Taylor et al., 2011). As mentioned, alcohol and drugs play a major role in the college rape culture. Victims of rape that occurred with the presence of alcohol or illicit drugs are less likely to report the crime (Wolitzky-Taylor et al., 2011).

The count of forcible rapes is also limited due to the non-acknowledgement of rape or the victim’s ignorance of knowing they were raped. College students may
consider an act that is actually forcible rape as unwanted sex or a date gone wrong. The count can also be inaccurate due to college law enforcement or campus police not reporting known incidents of rape to avoid the institution having negative publicity. Other limitations of this data are the numbers of incidents from the US Department of Education’s cutting tool does not disclose whether the victims and offenders are male or female and does not disclose whether the perpetrators or victims are actual students of the institution. Another limitation is that rapes may occur at fraternity houses and not all fraternities are located on campus. Those that occur at fraternity houses may not be included in on campus rape statistics. An additional limitation to the study is that this analysis only analyzes university/college characteristics. Incorporating macro level measures with micro level measures would strengthen the analysis. Location of the rapes would also be important but due to the nature of the secondary data, where the rape(s) took place were unavailable.

Future Research

To overcome this conflict in recording rape incidents, instruments or surveys need to be modified to include definitions of rape and thoroughly explain what incidents constitute a rape. Surveys need to also provide examples and scenarios to help college women easily differentiate between desired and unwanted sex. Wording on surveys need to be altered to adequately encompass all figures. It is important to accurately record all numbers of rape incidents to help us understand the trends, causes, and common factors associated to college rape and help prevent future incidents in our college campuses across the country. According to Fisher, Cullen, and Turner (2000), the majority of rapes occurring on college campuses are date or acquaintance rapes. Surveys need to be altered
and scripted in a way to clearly explain that rapes can happen on dates with a person the victim knows or even with the victim’s boyfriend. Most college women will categorize this or any other incident of unwanted sex as a date gone wrong, the result of a bad date, or a friend just going too far. Most schools do not categorize sexual assault as sexual assault but instead refer to it as unwanted sex, because in a college setting the perpetrator is normally an acquaintance of the victim.

**Policy Implications**

This study’s purpose is to understand which macro level factors contribute to on-campus forcible rapes in order to help reduce or prevent this crime from occurring in colleges. It is important for parents to feel a sense of security when sending their children (especially females) off to college instead of worrying about their vulnerability to unwanted experiences or possible victimization of rape. More than just college students, parents of students, and campus police should be concerned about the reduction and prevention of campus rapes. External stakeholders and community officials should also have a role in this matter. Making colleges a safer place for students is also a main concern for the government. In early 2014, President Barack Obama challenged a task force comprised of administration officials to come up with recommendations for colleges to prevent and respond to rape on campus, increase public awareness of each college’s track record and enhance coordination among federal agencies to hold colleges responsible if they do not confront the problem (Pickler, 2014).

Certain acts have also been put in place to combat female rape and to monitor whether colleges are accurately reporting the number of rape incidents occurring on
college campuses. One such act called the Violence Against Women Act (VAWA) has made provisions on college rape (Pickler, 2014). This act brought about the Campus Sexual Violence Elimination Act (SaVE) that ensures that college victims of sexual violence have legal or disciplinary recourse against their perpetrators (Janik, 2013). The Clery Act requires colleges and universities to disclose statistics about crime on or near campus in annual crime reports including the Uniform Crime Report (Guffey, 2013). This includes the crime of rape. Students Active for Ending Rape (SAER), a nonprofit group working to change policies on sexual assaults on campus, reported over 80 percent of college policies that do not comply with the Clery Act (Pickler, 2014). The US Department of Education has investigated and fined several schools for not accurately reporting crimes. Fines can be imposed on colleges and universities not complying with the Clery Act up to $35,000 per violation and these institutions can also be suspended from participating in federal student aid programs (Kiss, 2013).

Rape prevention programs have also been created in college environments to combat rape on campus. Each college and university should have prevention programs or a team of prevention coordinators to reduce the incidents of unwanted behaviors that normally occur on college campuses. The US Department of Education’s Higher Education Center points out five strategies to address the problem of unwanted behavior on college campuses involving drugs and alcohol that can lead up to incidents of rape: offer alcohol-free social gatherings, create an environment that promotes healthy normative behaviors, limit alcohol availability, restrict the marketing and promoting of alcoholic beverages on and off campus, and develop and enforce local, state, and federal laws related to alcohol and drugs (Stubbs, 2008).
Rape prevention programs are aimed toward female and male students. As this study supports the notion that the more males attending a college, the more rapes will be reported at that college, rape prevention programs for men are highly needed. Programs for college males should not assume men are rapists but instead suggest positive lasting attitudes and behavior changes to produce successful outcomes. Some rape prevention programs for male college students are called The Men’s Program, The Men’s Project, and The interACT Program. These programs promotes empathy for rape survivors and understanding of post rape trauma and men in these programs report less likelihood of raping (Foubert & Cremedy, 2007). Rape prevention programs like these are important in eliminating the motivation in possible “motivated” offenders of rape.

As it relates to females, rape prevention programs on campuses for women tend to focus on being aware of their surroundings and teach self defense mechanisms. These programs are not effective either, because they are more related to stranger rape. Universities tend to focus more on crime prevention strategies though an environmental design such as better lighting, security cameras, and additional campus police monitoring on campuses (Rich et al., 2010). This may be more effective for stranger rape but not assailant rape. Prevention programs for female students should address strategies on how to avoid unwanted sexual behavior in social gatherings. To address assailant rape, college rape prevention programs should incorporate attitudinal and behavioral issues more related to date rape. When these metrics are incorporated in prevention programs for both male and female college students, they may result in successful programs that reduce the likelihood of college rape occurring on campuses.
LIST OF REFERENCES


APPENDIX A

INSTITUTIONS USED IN THE SAMPLE
Stephens College
SUNY Binghamton
SUNY Fredonia
SUNY Plattsburgh
Temple University
Texas A&M University-Commerce
Towson University
Tulane University
UCLA
UMN
University of Alabama Birmingham
University of Chicago
University of Cincinnati
University of Hartford
University of Houston
University of Idaho
University of Kansas
University of Louisiana Lafayette
University of Maine
University of Michigan Flint
University of Nevada-Reno
University of New Hampshire
University of Scranton
University of Tennessee Knoxville
University of the Sciences
University of Wisconsin-Milwaukee
University of Wisconsin-Oshkosh
University of Tennessee Chattanooga
Wagner College
Washington & Jefferson College
West Chester University of Pennsylvania
West Liberty University
Western Connecticut State
Western Michigan University
Wichita State University
William Paterson New Jersey
Wisconsin-River Falls
American University
Benedictine University
Bethany Lutheran College
Boise State University
Central College
Colorado at Colorado Springs
Colorado Christian University
Columbia College - South Carolina
Franklin University
Greenville College
Husson University
Illinois State University
Indiana University-Kokomo
Indiana University of Pennsylvania
Iona College
IUPUI
Johnson & Wales University
Le Moyne College
LeTourneau University
Marymount University
Marywood University
Mills College
Minneapolis College of Art & Design
Mississippi College
New York University
Newberry College
Niagara University
North Park University
Notre Dame of Maryland University
Pomona College
Portland State University
Ringling College of Art & Design
Saint Mary's College
Saint Peter's University
Savannah College of Art & Design
Siena College
Siena Heights University
Sonoma State University
St. Lawrence University
St. Philip's College
University of St. Thomas-MN
Suffolk University
Trinity Washington University
University of Hawaii, Hilo
Vanguard University of Southern California
Warner Pacific College
Wayne State College
Weber State University
Western Illinois University
Western New England University
Wisconsin Lutheran College
Woodbury University
Brigham Young University
California Institute of Technology
Columbia College - Chicago
Concordia University - Wisconsin
Earlham College
Elizabethtown College
Fordham University
Freed-Hardeman University
Georgetown University
Grinnell College
Hampshire College
Harvey Mudd College
Haverford College
Hood College
Ithaca College
Juniata College
La Roche College
Loyola University Maryland
Marlboro College
Messiah College
Misericordia University
Mount Holyoke College
University of Northwestern Christian College - St. Paul/Northwestern College
Regis University
Santa Clara University
Sarah Lawrence College
Seattle Pacific University
Skidmore College
SUNY Empire State College
University of Notre Dame
Vassar College
Webster University
William Jessup University
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL FORM
DATE: July 9, 2014

MEMORANDUM

TO: MARTIN, LAKESHA R
FROM: Institutional Review Board for Human Use
RE: Macrolevel Factors Contributing to Rapes on College Campuses
    UAB IRB Protocol Number: X130912025

IRB approval for the above referenced protocol expires on October 18, 2014.

UAB’s Assurance of Compliance with the Office for Human Research Protections within the Department of Health and Human Services requires that the UAB IRB provide continuing review of the protocol on at least an annual basis. At the time of review by the IRB, the protocol was approved for continuing review on an Annual basis. The protocol received Expedited review.

If you plan to continue the protocol beyond the expiration date, you will need to submit renewal materials to the IRB. Current instructions for renewal may be found on the UAB IRB website at http://www.uab.edu/irb.

In order to assure that your protocol approval does not lapse, the IRB strongly recommends that all renewal materials be submitted to the IRB office two months prior to the expiration date. If the protocol does not receive continuing IRB approval by the expiration date of October 18, 2014, all protocol activities must cease including participant recruitment and enrollment. If your protocol approval does lapse, you must contact the IRB office to receive approval to continue the research interventions if it is in the best of interest of the participant.

If the protocol is complete, you must submit a final report for the IRB’s review. Instructions may be found on the UAB IRB website noted above. If you have questions or need assistance, please contact the IRB office at 934-3789.

CC: MCGRATH, SHELLY A.