The Contributions of Female Independence and Gender Equality to Rape in Metropolitan Areas

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ABSTRACT

Recent examinations have placed importance on gender equality and women's independence as determinants of violence against women. These examinations have resulted in mixed results about the importance of different theoretical constructs and levels of analysis. This examination integrates macro strain constructs with the feminist perspective and utilizes the Uniform Crime Reports U.S Census data from year 2000 to determine how gender differences in social and economic status can be used to explain rape rates in the 75 most populated Standard Metropolitan Statistical Areas (SMSAs). Implications for future research based on these results are presented and discussed.

Keywords: Rape, gender equality, female independence, macro strain theory, backlash hypothesis.

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Introduction

According to the Bureau of Justice Statistics (BJS) (2006), there were almost 190,000 rape and sexual assault victimizations in the United States during 2005, a rate of 80 rapes per 100,000 people. Rape and sexual assault are unique crimes in that they are almost always committed by a man against a woman; of these victimizations reported in 2005, approximately 92% of the victims were women and nearly 98% of the offenders were men (BJS, 2006). Many criminological theories offer possible explanations for rape and sexual assault, but investigations completed over the past 20 years have placed increased importance on gender differences in social and economic constructs as possible determinants of violent crime in general, and the violent victimization of women in particular (see Avakame 1999a, 1999b; Baron & Straus, 1984, 1987, 1989; Bailey, 1999; Ellis & Beattie, 1983; Blau & Blau, 1982; Gartner & McCarthy, 1991; Grana, 2001; Hunnicutt & Broidy, 2004; Lee & Stevenson, 2006; Peterson & Bailey, 1992; Whaley, 2001). These investigations are particularly relevant given the argument that sexual gratification is not the motive for rape or sexual assault, but rather, it is argued that men use rape to control and dominate women (Avakame, 1999a).

Although all violent crimes and victimizations are interpersonal in nature, a body of research has examined the violent victimization of women on the macro level using a combination of strain, social disorganization, and feminist theories. These macro-based studies identify group constructs that identify correlational and causal relationships. Drawing from Merton's (1938) macro strain theory, criminal behavior is presented as one response to the strain that develops from the failure to achieve individually desired or socially proscribed goals, such as economic or professional success. In a gendered strain hypothesis, this strain might escalate if men who are unsuccessful are aware of women who have been successful in achieving these same goals.

Men have traditionally been more successful in attaining educational achievements, professional employment, and economic status, but gender differences in these accomplishments have diminished as society has become more progressive. When women reach comparable levels of success, men oriented towards a more traditional social expectation might view successful women as a threat to their masculinity and social status. To express or relieve their anger and frustration, these men might commit acts of violence against women. This backlash hypothesis (Avakame, 1999a) applies a feminist structure to victimology and suggests that men attempt to punish

women in an effort to exert power and control because women as a class have deviated from traditional gender roles that prefer the dominance of men and the subordination of women. Other strands of feminist thought suggest that a move towards gender equality might result in an escalation of violence towards women initially, but will taper off once society begins to recognize and be more accepting of women's upward mobility.

Investigations (reviewed below) that have examined the effects of gender equality on the violent victimization of women have produced mixed conclusions about the relative importance of these theoretical constructs. The current research attempts to provide further identification of the relationship between gender equality, female social independence, and rape rates by applying a strain-based backlash hypothesis to official data drawn from the 2000 decennial census and the Federal Bureau of Investigation's (FBI) Uniform Crime Reports (UCR). First, a brief review of the literature is offered. Then, rape rates are regressed on measures of female social independence and gender equality. These results are presented to assess if the rape is in fact influenced by evidence of male-centered macro-level strain and frustration that might be a result of the upward mobility of women. Finally, suggestions for future research are offered.

Review of The Literature

The foundation of this investigation is the idea that the relative deprivation of men is related to the rate of female rape victimization and is grounded in a macro-strain theory. Merton (1938) argued that personal satisfaction results from the success of attaining goals and participating in competitions and surpassing other competitors. Competition with others results in the pursuit of success and status, which can be attained either by either legitimate or illegitimate means. When these means fail and an individual is unable to achieve desired goals, strain will often develop. This investigation expects that men who experience strain as a result of their inability to satisfy their desired goals and have knowledge of independent women who have been successful in achieving these goals will respond to their relative deprivation and subsequent feelings of strain by committing violence against women, specifically rape.

Merton (1938) offered his concept of strain within the context of anomie; anomie and strain have historically been considered as having a linear and chronological development. Although the constructs and arguments of strain and anomie are not completely related or unique, parallels do exist and this connection suggests a theory of violence that might explain the

victimization of women by men. In Durkheim's (1951 [1897]) *Suicide: A Study in Sociology*, he presents a convincing argument that anomie can lead to frustration and/or violent actions. He (1951, p.285) argued that,

> A man abruptly cast down below his accustomed status cannot avoid exasperation at feeling a situation escape him from which he thought himself master, and his exasperation naturally revolts against the cause, whether real or imaginary, to which he attributes his ruin. If he recognizes himself as to blame for the catastrophe, he takes it out on himself; otherwise, on someone else. In the former case there will be only suicide; in the latter, suicide may be preceded by homicide or by some *other violent outburst* [emphasis added]. In both cases the feeling is the same; only the application varies.

Durkheim specifically identified homicide as a violent manifestation of the stress that occurs as a result of losing control of situations that an individual expects to control, but he also specifies that "some other violent outburst" is another possible reaction to this stress. Rape could be considered as some other type of violent outburst that is relevant to Durkheim's argument.

Merton (1938) built his development of strain theory on this assumption that social strains lead to deviant behavior. He argued that "…stress on pecuniary success…invites exaggerated anxieties, hostilities,…and antisocial behavior" (p.60). The subsequent development and assessment of Merton's argument has most often been examined in relation to property and juvenile crimes. Despite this, it is not implausible that the anxieties and hostilities that Merton referred to might include the stress or strain experienced by men as a result of female success, and might contribute to the explanation of rape victimization.

Along with strain theory, feminist perspectives can also contribute to the understanding of why men might pursue women as rape victims as a result of their personal shortcomings. Two positions within feminist thought have been offered to explain this phenomenon. The first, often referred to as a backlash hypothesis, argues that as men and women move towards equality on various measures of economic success, such as earnings, professional employment, and educational attainment, violence against women will increase as men punish women for their success (Avakame, 1999a; Whaley, 2001). An alternative explanation offered by feminist scholars asserts that a move towards gender equality will result in decreases in violence against women because men, and society in general, will become more accepting of women and their elevated social status (Ellis & Beattie, 1983; Whaley, 2001).

When men perceive their traditional gender role in society as being threatened by women, they might feel increased pressure to define their masculinity. Messerschmidt (1993, p. 32) referred to this as doing gender and argued that "force or threat of force may be used to enable men to maintain some level of hegemonic masculinity." This force or threat of force can include rape or attempted rape. Messerschmidt further argued that when men perceive their status in society as being threatened by women, achieving hegemonic masculinity becomes increasingly important.

Possibly because of inconsistent theoretical explanations, investigations examining the female social independence, gender equality, and rape rates have generated mixed conclusions about the impact of these theoretical constructs on rape victimization. In one of the first tests of rape as the result of traditional male dominance in society, Ellis and Beattie (1983) used measures of economic equality that included gender differences in median earnings, educational attainment, employment status, and number of professional and managerial occupations. In their assessment of UCR and National Crime Survey data for Standard Metropolitan Statistical Areas (SMSA) across the United States, they controlled for other social constructs such as percent black, mean family income, and percent of the population living in urban centers. Their research indicated that gender equality was positively associated with rape rates. In other words, in SMSA where women and men neared equality in social and economic status in areas such as educational attainment, income, and professional employment, rape rates were higher. These findings provide support for the backlash hypothesis.

In 1984, Baron and Straus conducted a similar examination of the impact of gender equality on rape rates in individual states. Their measures of gender equality were taken from the Status of Women Index, which consisted of 22 items that measured four areas of equality, including politics, economics, education, and the law. Their findings indicated that gender equality was positively associated with rape rates. These results must be interpreted cautiously, however, as there are several methodological limitations of Baron and Straus' research. Using an index that is comprised of 22 different items measuring gender equality might be problematic because variation within the index could mask the specific impact of individual measures of gender equality on rape rates. Also, the use of states as the unit of analysis poses a problem because states have very different geographic areas and might be too large for any meaningful social contact between professionally successful women and unsuccessful men.

To correct for these limitations, Baron and Straus (1987, 1989) further examined the impact of gender equality on rape rates using a refined Gender Equality Index and state-level UCR data. Their subsequent findings contradicted the earlier results, as well as Ellis and Beattie's (1983) findings. In this research, Baron and Straus found that greater levels of gender equality resulted in lower rape rates. One explanation provided for the contradictory results was the use of a better and more specific model and the improved Gender Equality Index. These findings are more in line with traditional feminist hypotheses that argue that gender inequality reaffirms the social belief that men are the dominant gender and that women have a lower status in society.

Peterson and Bailey's (1992) examination of the impact of gender equality on rape rates supported Baron and Straus' (1987, 1989) findings. Using SMSAs as their unit of analysis and UCR data from 1980, they concluded that gender inequality in earnings was positively associated with rape rates; that is, larger gaps between male and female earnings were associated with higher rape rates. Other measures of female independence, including the differences in high school graduation rates and differences in percent of men and women employed in professional occupations, did not have a significant relationship with rape rates. More recently, Avakame (1999a) conducted a study to determine the impact of female's labor force participation on rape rates. He found that unemployed women were at a higher risk for victimization than employed women, which contradicts the backlash hypothesis.

Bailey (1999) also attempted to determine the effects of gender equality on rape rates. His measures of gender equality include the absolute and relative status of women (to men) across educational attainment, income, and type of occupation. Unique to his study is the use of both cross-sectional and longitudinal analyses of data from both the 1980 and 1990 decennial census. His longitudinal analysis examined the changes in women's status and rape rates from 1980 to 1990. His results indicated that for both 1980 and 1990, only income predicted rape rates. In cities where the median income of females was higher, the rape rates were lower. These findings were consistent with more traditional feminist arguments that assert that increases in gender equality will move towards eliminating the traditional societal beliefs that women are of a lower social status than men. These findings were not present in the change analyses however. Bailey's explanation for this discrepancy is that the change in women's median income levels from 1980 to 1990 was too small to produce a meaningful effect.

For 1990, Bailey (1999) found that cities with higher levels of gender equality had higher rape rates. This finding supports the backlash argument, and is contradictory to more traditional feminist hypotheses. Overall, Bailey's (1999) findings provided mixed support for both explanations for the relationships between female social independence, gender equality, and rape rates. In an attempt to further clarify the direction of the relationship between female social independence, gender equality, and rape, Whaley (2001) conducted a study that attempted to test both the traditional feminist hypothesis (i.e., that increases in gender equality are related to decreases in rape rates) and the backlash hypothesis.

Whaley (2001) used cities as her units of analysis and her measures of gender equality included male to female median income, difference in male and female employment, sex disparity in educational attainment, percentage of males employed as executives, managers, and administrators, and legal inequality from the 1970, 1980, and 1990 population census for the largest cities across the United States. Her measure of rape victimization was obtained from the UCR. Similar to Bailey (1999), Whaley also performed cross-sectional and longitudinal analyses. Her results indicated that in the short term, gender equality resulted in higher rape rates, which supports the backlash hypothesis. In the long term, however, a move towards gender equality resulted in lower rape rates; Whaley argued that this is due to a greater acceptance of men and women as equals when considering economic success.

Martin, Vieraitis, and Britto (2006) also looked at the relationships between gender quality and women's absolute status and rape rates across major U.S. cities using census data from the year 2000. They found that increases in gender equality were related to high rape rates, but found that when women had a higher absolute status, rape rates were lower.

Collectively, this research has used data from various time periods and sources but has not been successful in consistently confirming or refuting either a traditional feminist hypothesis or the backlash hypothesis with respect to the relationship between female social independence, gender equality, and rape. Building from existing research, the present study seeks to replicate recent investigations to confirm if these measures of social situations have importance to contemporary rape rates.

Methodology

Sample

This investigation examined the influence of social conditions, including gender economic equality and female social independence, on official rates of forcible rape. To do this, a list of the 100 most populous Standard Metropolitan Statistical Areas (SMSAs) was drawn from the 2000 decennial population census. Although each of the 100 most populous SMSAs were intended to be analyzed, the UCR only publishes data for SMSAs with at least 75% of the jurisdictions reporting. As a result, only 75 of the 100 largest SMSAs with at least 75% of the jurisdictions reporting are included here.[1] These ranged in size from a population of 400,000 to 21.2 million people; additions to the sample would increase the population range and would begin to capture relatively small metropolitan communities. Additional descriptive statistics, for this and all variables, are presented in Table 1.

Table 1. Descriptive Statistics

	Mean	Median	Sd	Range
Average Rape Rate: Total Population	19.0	14.8	15.0	.42 – 71.8
Average Rape Rate: Total Female Population	66.0	63.7	27.6	7.9 - 143.5
Divorce Rate	6137.2	4500.0	9980.4	570.3 - 80863.3
Female-Headed Household Rate	132.0	135.7	18.5	80.1 - 199.1
Female Self-Employment Rate	1851.8	1350.4	3842.9	139.8 - 36764.3
Gender Differences in Earnings	10138.4	9836.0	2414.1	3632 - 16984
Gender Differences in Unemployment	-503.7	145.1	17231.4	-96649 - 36608
Gender Differences in Professional Employment	3633.4	-140.3	21596.3	-19777 - 114627
Gender Differences in Higher Education	11325.5	468.8	22180.8	-14217 - 131767
Infant Mortality Rate	12.1	11.3	4.3	6.7 - 35.9
Poverty Rate	9.6	9.2	3.3	1.9 - 21.5
Percent 18-24	10	9.8	1.5	5.7 - 14.7
Percent 25-44	30.3	30.1	2.1	23.0 - 35.3
Males per 100 Females	92.8	91.5	4.1	86.4 - 105.3
Percent Black	11.2	8.1	9.0	.5 - 43.4

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[1]   A complete list of these SMSAs can be found in Appendix A.

Independent Variables

Social Independence

Durkheim (1951) suggested that anomic social conditions could potentially result in suicide, but also suggested that these social conditions could lead to violent crime. To assess this in a contemporary context, the present analysis examined the relationship between measures of female social independence and rape rates. Female social independence was measured through several variables including the rate of female-headed households, the rate of female self-employment, and the female divorce rate as reported in the 2000 population census.[2] It is expected that these rates provide a measure of the degree that women have rejected subordinate roles in society and have adopted a more dominant social role.

Gender Economic Equality

Measures of economic equality between genders also were included and were taken from the 2000 population census. The variables presented here are consistent with theoretical expectations and similar to those used in recent research and they are expected to measure the equality between men and women on a selection of different social and economic constructs in any given SMSA. The measure of income equality, computed as the difference in male and female median earnings, is similar to measures used by Bailey (1999), Ellis and Beattie (1983) Peterson and Bailey (1992), and Whaley (2001).

Separate variables measuring employment equality were also included. One variable identifies the difference in male and female unemployment rates. It is expected that when this value is positive, the male unemployment rate in a SMSA is higher than that of females. According to the backlash hypothesis, a higher male unemployment rate will result in frustration and strain if males are unsuccessful in finding gainful employment and are aware of women around them who have been successful in this regard. A similar measure was used by Avakame (1999a). Following Bailey (1999), Peterson and Bailey (1992), and Whaley (2001), a second employment equality measure considered the difference between the rate of males and females employed in professional occupations. Professional occupations include management, legal, healthcare, education, and social service positions, among others. As the difference between rates of professionally employed

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[2]   These data, as well as the data used to compute all other independent variables, can be found in Summary Files 1 and 3 of the 2000 population census.

men and women nears zero, men and women are employed in professional occupations equally, but when this value is negative, women are more often employed as professionals than men. It is expected that smaller or negative values will be associated with frustration among men because of the higher status of women. Men might believe that more professionally employed women could diminish their achievements as professionals or in the case of a higher rate of female professionals than male professionals, men might become frustrated at the increased competition within or failure to achieve professional employment.

A final measure of economic gender equality is based on the expectation that economic success is related to educational attainment. To examine how the educational attainment of women might threaten men, the difference between the rate of men and women with a Bachelor's or higher degree is included. When this value is positive, men have higher rates of educational achievement than women. Similar to professional employment, as this value nears zero, men and women have more equal levels of educational attainment. When this value becomes negative, women have higher levels of educational attainment, and it is expected that men could become frustrated at the increases in women's education levels and perceived professional competition. According to the backlash hypothesis, men might then rape women to reverse the social equality of women by forcing their subordination to men.

General Anomic Conditions

Two variables were also included to provide measures of the general anomic conditions in any given SMSA. These are the infant mortality rate and the poverty rate. These were included in the analysis to control for anomic social conditions that are also associated with economic frustration.

Controls

Additional control variables, gathered from the 2000 population census, were also included in the analysis. The control variables include the percent of the population between the ages of 18 and 24, the percent of the population between the ages of 25 and 44, and the percent black in the population. The younger age category and the race variables were included to control for the anticipated relationships between certain segments of the population that are likely to be associated with crime rates, and the older age category was included to control for the segment of the population most likely to be part of the active professional workforce. The ratio of males per

100 females was also included in the analysis to control for the relative concentration of gender. Similar control variables have also been used by Bailey (1999), Peterson and Bailey (1992), and Whaley (2001).

Dependent Variables

The dependent variable is the natural log of the three-year average forcible rape rate among the total population and among the total female population for each SMSA, as reported by the Federal Bureau of Investigation's (FBI) Uniform Crime Report (UCR) for the years 1999, 2000, and 2001. The three-year average was computed to account for potential year-to-year fluctuations in rape rates due to things such as reporting differences and changes in enforcement policies and the natural log was used because of the skewed distribution of the homicide rates. The UCR was selected as a data source because the data are already aggregated at the SMSA level. Similar studies have also used the rape rate reported by the UCR in their examinations of the relationship between gender equality, female social independence, and rape (e.g., Avakame, 1999a; Baron & Straus, 1987, 1989; Ellis & Beattie, 1983; Peterson & Bailey, 1992; Whaley, 2001).

Results

This investigation examined the relationship between rape rates and variables that reflect conditions of female social independence and gender equality in two stages. First, bivariate correlations were computed and analyzed; the complete correlation matrix is presented here as Table 2. Following this, a series of Ordinary Least Squares (OLS) regression models were estimated. The series of OLS regression models first estimated the relationship between forcible rape rates and general anomic conditions while controlling for the concentration of blacks, the population aged 18 to 24 years, the population aged 25 to 44 years, and either gender concentration (identified as Model 1 across tables). Subsequent models added variables of interest in a series of conceptually-related blocks, beginning with measures of female social independence (reported as Model 2). Model 3 estimated the impact of economic equality measures on forcible rape rates, and the fourth and full model included the measures of general anomic conditions, control variables, female social independence measures, and gender equality measures.

An examination of the correlation matrix[3] revealed no significant relationships between any of the independent variables and the dependent variables. For the most part, colinearity issues among the independent variables are not apparent, but there is one relationship that should be observed with some caution. The correlation between the female divorce rate and the female self-employment rate is significant and indicates that the two are related ($r = .989$) and nearly perfectly colliner. Although speculative, it is possible that self-employed women are more socially independent and this might lead to their interest in seeking a divorce; a true causal interpretation is not appropriate.

The analysis proceeded by estimating a series of Ordinary Least Squares (OLS) regression models. These results are presented in Tables 2 and 3, and four separate models were estimated for both of the dependent variables. By estimating models that included each conceptual block as well as a full model, it was possible to examine the relationships between forcible rape rates, female independence, and gender economic equality individually and collectively.

Social Independence, Economic Equality, and Rape among the Total Population

Table 2 presents the regression models estimating the relationships between measures of social independence, economic equality, and rape rates across the most populated SMSA. Across models, one measure of general anomic conditions and several control variables are significant, but none of the independent variables of interest (i.e., female social independence or economic equality measures) has a significant relationship with the dependent variable. In Models 1 and 2, the poverty rate is significantly and negatively associated with the rape rate. These relationships suggest that as the poverty rate increases rape rates decrease. Across all models, the percent of the population aged 18 to 25 years is significantly and positively related to rape and this is consistent with the expectation that a younger population is more violent. In Models 1, 3, and 4, the percent of the population aged 25 to 44 was significantly and negatively related to rape, which indicates that as the population ages, the rape rate is lower. One further control variable, the percent black, was significantly and positively related to rape in Models 1, 3, and 4.

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[3]   A full correlation matrix can be obtained from the first author.

Table 2. The Impact of Social Independence and Economic Equality on Rape among the Total Population of the 75 Most Populated SMSAs

	Model 1 B (Se)	β	Model 2 B (Se)	β	Model 3 B (Se)	β	Model 4 B(Se)	β
Social Independence								
Female Divorce Rate			.000 (.001)	-.329			-.001 (.001)	-.564
Female Headed Household Rate			.009 (.102)	.013			.025 (.112)	.036
Female Self-Employment Rate			.001 (.002)	.200			.001 (.003)	.425
Economic Equality								
Gender Differences in Earnings					.299 (.6887)	.056	.355 (.742)	.067
Gender Differences in Unemployment					.000 (.001)	.032	.000 (.001)	.027
Gender Differences in Higher Education					.000 (.002)	.031	-.001 (.002)	-.055
Gender Differences in Professional Employment					.002 (.001)	.181	.002 (.001)	.192

Independent Variables	Model 1 B (Se)	β	Model 2 B (Se)	β	Model 3 B (Se)	β	Model 4 B (Se)	β
General Anomic Conditions								
Infant Mortality Rate	.660 (.578)	.167	.655 (.535)	.166	.676 (.531)	.171	.708 (.559)	.179
Poverty Rate	-.714* (.376)	-.240	-.729* (.411)	-.245	-.654 (.419)	-.219	-.621 (.476)	-.209
Controls								
Percent 18-24	2.280** (1.094)	.259	2.689** (1.189)	.306	2.411** (1.131)	.274	2.847** (1.221)	.324
Percent 25-44	-2.028** (.913)	-.331	-2.255 (.965)	-.367	-2.125** (.991)	-.346	-2.121* (1.076)	-.346
Males per 100 Females	.605 (.480)	.191	.683 (.520)	.216	.537 (.502)	.170	.697 (.563)	.221
Percent Black	.375* (.222)	.263	.385 (.235)	.270	.443* (.230)	.310	.425* (.251)	.298
Constant	17.039 (37.585)		12.788 (48.172)		19.504 (45.509)		2.719 (65.061)	
R^2	.153		.169		.186		.204	
F	2.048*		1.470		1.463		1.204	
df	6		9		10		13	

Significance: $p<.10$ = *, $p< .05$ = **, $p< .01$ = ***

Table 3. The Impact of Social Independence and Economic Equality on Rape among the Total Female Population of the 75 Most Populated SMSAs

	Model 1		Model 2		Model 3		Model 4	
	B (Se)	β	B (Se)	β	B (Se)	β	B(Se)	β
Social Independence								
Female Divorce Rate			.000 (.002)	-.167			-.001 (.002)	-.314
Female Headed Household Rate			.062 (.205)	.041			.080 (.225)	.053
Female Self-Employment Rate			.000 (.005)	.057			.001 (.005)	.191
Economic Equality								
Gender Differences in Earnings					.188 (1.380)	.016	.250 (1.493)	.022
Gender Differences in Unemployment					.001 (.002)	.030	.001 (.002)	.026
Gender Differences in Higher Education					.001 (.004)	.029	-.001 (.005)	-.045
Gender Differences in Professional Employment					.003 (.002)	.164	.003 (.002)	.172

Independent Variables								
	Model 1		Model 2		Model 3		Model 4	
	B (Se)	β	B (Se)	β	B (Se)	β	B (Se)	β
General Anomic Conditions								
Infant Mortality Rate	2.970*** (1.040)	.348	2.977*** (1.075)	.349	2.971*** (1.068)	.348	3.020*** (1.125)	.354
Poverty Rate	-1.795*** (.755)	-.279	-1.758** (.825)	-.273	-1.778** (.843)	-.276	-1.681* (.959)	-.261
Controls								
Percent 18-24	5.914*** (2.196)	.311	6.586*** (2.390)	.347	6.231*** (2.274)	.328	6.929*** (2.458)	.324
Percent 25-44	-5.668*** (1.833)	-.428	-6.103*** (1.939)	-.460	-5.915*** (1.993)	-.446	5.968*** (2.166)	-.450
Males per 100 Females	1.522 (.964)	.223	1.750* (1.044)	.256	1.355 (1.009)	.198	1.733 (1.133)	.254
Percent Black	.469 (.445)	.152	.459 (.473)	.149	.608 (.463)	.197	.554 (.504)	.180
Constant	25.567 (75.543)		4.364 (96.783)		40.082 (91.494)		-10.249 (130.995)	
R²	.269		.282		.295		.309	
F	4.166***		2.830***		2.681***		2.098**	

Significance: p<.10 = *, p< .05 = **, p< .01 = ***

Social Independence, Economic Equality, and Rape among the Total Female Population

Because the official measure of rape only includes victims who are female, it is logical to examine the relationships between social independence and economic equality and the rape rate as computed for the total female population for each SMSA. Table 3 presents the regressions that estimated these relationships. Four models, identical to those presented in Table 2, were also estimated for this dependent variable. Similar relationships were also found when examining the impact of social independence and economic equality on rape rates among the total female population as were found when examining the total population. Again, no variables of interest had significant relationships with rape rates. The only variables that had significant relationships with the rape rate were the general anomic conditions and control variables.

Across models, the infant mortality rate was significantly and positively related to the rape rate. This indicates that as the infant mortality rate increases, the rape rate also increases. The poverty rate was again significantly and negatively associated with rape rates, indicating that an increase in the poverty rate results in a decrease in the rape rate in any given SMSA. Further significant relationships include a consistent positive relationship between the percent of the population aged 18 to 24 years and the rape rate and a consistent negative relationship between the percent of the population aged 25 to 44 years and the rape rate. These relationships indicate that a higher percentage of 18 to 24 year olds results in higher rape rates, but a higher percentage of 25 to 44 year olds results in lower rape rates.

The only difference across the models presented in Tables 2 and 3 is that the percent of the population who is black did not have a significant relationship with rape in any models that only considered rapes per female population. One justification for using this construction of the dependent variable is the increased R^2 values and significant F-statistics across models in comparison to those presented in Table 2. It is apparent that these models fit the rape rate per female population much better than the more traditional measurement of the rape rate.

Discussion and Conclusions

This investigation examined the relationship that rates of forcible rape in the most populated SMSAs in the United States had with measures of female

social independence and gender economic equality. Multivariate models were estimated to examine these relationships, but no measures of interest were found to be statistically significant. Rather, only measures of general anomic conditions and other control variables had statistically significant relationships with rape rates. These findings are contradictory to divergent theses that greater female social independence and gender equality will lead to increased rape rates due to a backlash effect fueled by male frustration or decreased rape rates due to social acceptance of women indicated by social and professional equality.

The backlash hypothesis suggests that as men and women become more equal and have similar levels of educational attainment, earnings, and professional occupations, men will punish women as a result of their frustration and anger over their own lack of success. It was expected that increased social independence of women combined with higher levels of gender equality, would result in frustration and stress in men because an adherence to the traditional beliefs that men have a higher status in society and thus should have higher educational levels, earn more money, and hold more professional occupations than women.

A separate theoretical position suggests that as men and women become socially equal with respect to their professional employment, earnings, and educational attainment, the rates of rape and other violence against women will decrease. This decrease will be a result of the increased status of women in society and the gradual abandonment of the view that women are of a lower social status than men and should not achieve personal and economic success over and above the success of males in society. Once society accepts this view of men and women as equals, the violence against women by men that can be used to force women into a subordinate role will cease.

The relationships revealed in this research do not support either thesis. It is likely that a lack of significant findings in support of either position indicates a misspecification in previous analyses. One misspecification could be that there are more specific interpersonal relationships that need to be considered and examined and that official rape rates are more sensitive to these unknown interpersonal relationships than aggregated social conditions. It could also be that variations in the acceptance of female social independence exist across groups of varying generations, races and ethnicities, social classes, or other identifiable subcultures. That is, the competition that leads to the frustration that leads to violence against women could be group specific instead of a general social condition. Although individual-level analyses might specify some of these relationships, it is unlikely that data

exist that will capture both victim and offender characteristics that are not limited due to the likely subcultural variations in reporting crimes against women to the police. A more limited analysis that considers the concentration of victimization within specific groups (such as younger segments of the population or divisions by race and ethnicity) and across varying social situations might provide some important preliminary evidence.

Although the SMSA has been offered as an appropriate unit of analysis for analyzing general social constructs and their relationships with crime and victimization, it is likely that forcible rape is so intimate that its true causes cannot be examined at the macro level. A large proportion of rapes are committed between acquaintances (BJS, 2006). According to the Bureau of Justice Statistics (2006), 73% of the rapes and sexual assaults reported in 2005 were committed by offenders known to the victim, and this might actually be a conservative estimate. Some researchers (e.g., Fisher et al., 1998; Koss, 1985; Warshaw, 1994) have indicated that between 84% and 90% of rapes and sexual assaults are committed by offenders known to the victim. If this is accurate, then it is likely that the relationships hypothesized here should be significant at the macro level. Further investigations might consider measuring these or similar constructs of social independence and gender equality at a more discrete individual level.

In addition, it is likely that there are other ways to measure economic and social advances of women with greater accuracy. Different sources of data might allow for a measurement of these constructs with variables that could identify these relationships more precisely. While the measure of social independence and gender equality used here are presented as valid and consistent with prior research, measurement and analysis of these constructs at the individual level might be more precise and might be more in line with the degree of personal status frustration and social acceptance presented in the hypotheses.

One further limitation is the use of official data as reported by the UCR. Research has shown that rape and sexual assault are grossly underreported offenses (Reid & Konrad, 2004) and it is likely that the UCR data does not provide a complete picture of rape and sexual assault victimization in the United States. Research also uses other sources of victimization data, such as the National Crime Victimization Survey (NCVS), but victimization surveys also suffer from their own limitations. Rape and sexual assault are very personal and intimate offenses, and it is likely that many women are reluctant to report them to the police or interviewers, especially if the

offender is someone known to them, such as a family member, friend, or other acquaintance. It is also possible that the reporting of rape is influenced by the social acceptance of women, a thesis central to this line of research. If women are less likely to report rapes in areas where women are expected to be subordinate, it will be difficult to accurately assess these relationships with official macro-level data.

In conclusion, the present study did not find support for either a backlash or social acceptance hypothesis that independence and gender equality are related to rates of rape and sexual assault. Despite the lack of support, this thesis should not be abandoned. Rather, the findings revealed here can inform future research examining the intersection of female social independence, gender equality, and rape rates. Future research should consider examining the relationship between female social independence, gender equality, and rape by disaggregating the data to inter-group and intra-group relationships to allow for variation across social situations and subcultural contexts that are likely to be unique to specific groups of men and women.

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Appendix A: 75 Most Populated SMSAs with at least 75% of the Jurisdictions Reporting Crime Data Albany-Schenectady-Troy, NY

Albuquerque, NM	Houston-Galveston-Brazoria, TX
Allentown-Bethlehem-Easton, PA	Jacksonville, FL
Austin-San Marcos, TX	Kalamazoo, MI
Bakersfield, CA	Knoxville, TN
Birmingham, AL	Lakeland-Winter Haven, FL
Boston-Worcester-Lawrence-Lowell-Brockton, MA	Lancaster, PA
	Lansing-East Lansing, MI
Buffalo-Niagara Falls, NY	Las Vegas, NV
Chattanooga, TN-GA	Little Rock-North Little Rock, AR
Colorado Springs, CO	Los Angeles-Riverside-Orange, CA
Columbia, SC	Madison, WI
Dallas-Fort Worth, TX	McAllen-Edinburg-Mission, TX
Dayton, OH	Memphis, TN
Daytona Beach, FL	Miami, FL
Denver-Boulder-Greeley, CO	Milwaukee-Racine, WI
Des Moines, IA	Minneapolis-St. Paul, MN
Detroit-Ann Arbor-Flint, MI	Mobile, AL Modesto, CA Nashville, TN
El Paso, TX	
Fort Wayne, IN	New Orleans, LA
Fresno, CA	New York-New Jersey-Long Island, NY-NJ-CT-PA
Grand Rapids-Muskegon-Holland, MI	Oklahoma City, OK
Greensboro-Winston-Salem-High Point, NC	Omaha, NE-IA
	Orlando, FL
Greenville-Spartanburg-Anderson, SC	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
Hartford, CT	Phoenix-Mesa, AZ
Honolulu, HI	Pittsburgh, PA

Portland-Salem, OR

Providence-Warwick-Pawtucket, RI

Raleigh-Durham-Chapel Hill, NC

Richmond-Petersburg, VA

Rochester, NY

Sacramento-Yolo, CA

Saginaw-Bay City-Midland, MI

Salt Lake City-Ogden, UT

San Antonio, TX

San Diego, CA

San Francisco-Oakland, San Jose, CA

Santa Barbara-Santa Maria-Lompoc, CA

Sarasota-Bradenton, FL

Seattle-Tacoma-Bremerton, WA

Spokane, WA

Springfield, MA

Stockton-Lodi, CA

Syracuse, NY

Tampa, FL

Toledo, OH

Tucson, AZ

Tulsa, OK

Washington-Baltimore, DC-MD-VA-WV