STRUCTURAL DETERMINANTS OF FEMALE LABOR FORCE PARTICIPATION AND WOMEN'S INVOLVEMENT IN CRIME: AN EXAMINATION OF RECIPROCAL EFFECTS*

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摘　　要

　　本研究探討「社會經濟發展論點」及「性別比例論點」如何用來解釋婦女勞動參與與其犯罪涉入之間的關係。利用國際統計資料做跨國比較研究，並以兩階段最小平方迴歸方法，針對各變項同時方程式模型進行交互影響關係之探析後發現：婦女勞動參與與女性竊盜犯罪率之間存在正面交互影響的關係；平均婦女謀殺被害比率亦如預測對婦女勞動參與有負面影響效果；但「例行活動理論」所意涵婦女勞動參與對婦女謀殺被害比率的影響則未得到支持。社會經濟發展對婦女勞動參與有些微負面影響但解釋力不大；性別比例則對婦女勞動參與無任何預期影響效果。本研究結論認爲在解釋婦女勞動參與與其犯罪涉入上其他結構上的成因值得進一步探討。

Introduction:

The socioeconomic development explar `on of women's involvement in crime has been widely explored by many scholars (Simon 1975; Bowker 1978; Shelley 1981; Steffensmeier 1978). Some research has found that the level of socioeconomic development has a substantial influence on sex differences in homicide victimization and theft offending (Norland and Shover 1977; Shichor 1985; South and Messner 1986). However, other researchers have argued that it is difficult to assess the extent to which social and economic development affect the increase of crime rates (Shichor 1985, p. 96). Several studies reveal rather weak, inverse or even no relationship between rates of homicide and measures of socioeconomic development (Krohn 1976; Messner 1982; Grove et al. 1985; Rogers 1989). This casts a doubt on whether socioeconomic development is an important determinant of women's involvement in crime.

Recently, some scholars emphasizing the importance of the sex ratio effect on Women's roles have cited historical evidence in Guttentag and Secord's book — Too many women? The sex ratio question (1983) to formulate hypotheses linking the sex ratio with women's involvement in crime (e.g., South and Messner 1986). South and Messner found that a high sex ratio (i.e., a relative undersupply of women) decreases significantly women's criminal offending rate, in spite of the fact that they also found that the sex rato at ages 15 to 49 exhibits no significant relationship with relative female homicide victimization rate. Nevertheless, their study suggests that the hypothesized influence of the sex ratio on the indication of women's involvement in crime is expected to be indirect, i.e., the effect of the sex ratio on women's rate of victimization and property offending is believed to operate through an important intervening mechanism — a societal emphasis on traditional or nonfamilial roles for women. This important intervening mechanism linking the sex ratio and women's involvement in crime has also been indicated by many scholars exploring the relationship between socioeconomic development and changing patterns of female crimes (e.g., Simon 1975; Steffensmeier 1980). Thus, the socioeconomic development and the sex ratio explanations of the women's roles (e.g., female labor force participation) and women's involvement in crime are the two competing theorizings worth exploring further. This study is intended to examine these two widely discussed theses: the sex ratio thesis and the socioeconomic development thesis to determine which is more supported by the cross-national data in explaining female labor force participation and women's involvement in crime. Also examined are reciprocal relationships among socioeconomic development, sex ratios, females labor force participation, and women's involvement in crime which have very rarely been explored by previous studies.

Theory:

Most of the the theories about women's involvement in criminal activities have proposed that female criminality is the result of atomized, physiological or psychological feminine traits (e.g., Klein 1973; Rosenblum 1975) rather than of social, structural problems such as poverty or access to opportunity. On the other aspect, factors that might initiate a rise in female criminality have been seen as present in social change that permitted women to seek employment outside of the home, or to otherwise increase their social autonomy (Smart 1976; Adler 1975). However, traditional explanations of male crime, such as anomie theory, control theories, or the labeling perspective have not been applicable to female crime.

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This is because the emphasis in these theories is on the nature of social rules and labels, or on the social reaction to individuals who break rules. In all of these theories, the wider origins (social structural factors) that act as determinants of social behavior and societal reaction are not adequately elucidated (Taylor et al., 1973). With regard to crimes committed by women, this is an especially crucial omission. The social structural placement of women is more embracing as a causal explanation than any current sociological theories propose. Therefore, an examination of the structural determinants of female labor force participation and women's involvement in crime might be very helpful in understanding the importance of the social structural factors.

As has been argued, a definitive assessment of the sex ratio thesis and the socioeconomic development thesis would require operationalization of all of the referenced variables, including the intervening variables, and an analysis of all of the hypothesized relationships. Thus, an indication of participation of women in nontraditional roles — female labor force participation — and its determinants will be first discussed.

The sturctural determinants of female labor force participation have been broadly explored by many previous studies (Pampel and Tanaka 1986; Word and Pampel 1985; Ward 1984; Youssef 1974). However, research on whether socioeconomic development or the sex ratio is the most important determinant of the female labor force participation is rather inconclusive. For example, an inverse association between the sex ratio and female labor force participation has been reported by some studies (Stewart and Winter 1977; Ward and Pampel 1985; South and Trent 1988). This negative relationship has been questioned by other scholars emphasizing the importance of socioeconomic development as ''the'' determinant of female labor force participation (Boserup 1970; Oppenheimer 1970; Pampel and Tanaka 1986). They argue that the sex ratio explanation of female labor force participation is limited in that women's participation in the labor force is a rather late social phenomenon accompanying economic and industrial development. By contrast, researchers emphasizing the importance of the sex ratio effect on women's roles argue that the results from most recent studies on socioeconomic development and female labor force participation are rather confusing. Some studies have even reported a spurious and nonexistent relationship between the two phenomena. Before turning to the discussion of the relationship between female labor force participation and women's involvement in crime, I will first describe some theoretical arguments regarding the socioeconomic development and the sex ratio explanations of female labor force participation.

Sex Ratios and Female Labor Force Participation:

The sex ratio of the populaton has been identified as a crucial determinant of women's socioeconomic, familial, and educational options. Guttentag and Secord (1983) argue that in societies where women are in oversupply, they will tend to be devalued by society, and with the opportunity for marriage limited because of the relative shortage of men, women will be more inclined to strive for economic independence. Because women's traditional roles as mothers and homemakers are not encouraged, they will be more likely to pursue educational and career goals, and their levels of literacy, schooling and labor force participation will be high. Many previous analyses of sex ratios in developed societies have focused mainly on their implications for the rate of women's participation in the labor force. For example, Ward (1984) provides a population competition explanation of female labor force participation by focusing on relative size of groups competing (e.g., males vs females) for available jobs. Citing Guttentag and Secord's work she argues that the greater the supply of female adults relative to the size of the male adult population, the fewer traditional opportunities there are for marriage and families and the more opportunities for work there are for women. Ward and Pampel (1985)'s study has also found the positive effect of the size of the female population on women's participation share.

However, some other studies have questioned sex ratios as an important determinant of the roles women occupy. For example, South and Trent (1988)'s study concludes that the effects of the sex ratio on women's roles are weaker than effects of socioeconomic development. This conclusion raises an important question regarding the relative effect of sex ratios and socioeconomic development in determining the rate of female labor force participation. Therefore, a further examination of the socioeconomic development explanation of the female labor force participation will probably provide more understanding as to the relative sex ratio effect.

Socioeconomic Development and Female Labor Force Participation:

The economic development explanation of female labor force participation argues that more rational and universalistic hiring practices exist in advanced economies, reducing discrimination against women and increasing their work opportunities (Wilensky 1968; Land et al., 1980). Similar changes occur in the educational system, where universalistic schooling provides higher educational qualifications and better

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work opportunities for women. In addition, economic growth in developed nations involves a shift of the labor force to the service sector of the economy, where many jobs (e.g., service and white-collar occupations) have been labeled female and working hours are flexible. Growth of the proportion of jobs in this sector thus increases demand for female workers not found in most developing nations (Ward and Pampel 1985). This is because technological and scientific progress linked with the development of modern economies seems to generate rational allocation of skill and talent to occupational positions regardless of gender. As economic development takes place, new opportunities for women to work arise, and such opportunities are coupled with reduced fertility and household responsibilities that seems to generate both a supply of and a demand of female laborers. Previous research on female labor force participation has operated on the premise that participation increases with economic development. A positive impact of socioeconomic development on female labor force participation has been observed frequently.

Nevertheless, some scholars such as Tinker (1976) have extensively discussed the possible adverse impact of development on women's life. Many previous studies of the relationship between socioeconomic development and female labor force participation also show that it is either nonexistent or spurious (Ferber and Lowry 1977; Nuss and Majka 1983; Youssef 1974). For example, Youssef concluded that ''the level of economic development does not explain the extent to which women participate in the non-agricultural labor force'' (p. 21). Other studies suggest a bivariate linear relationship exists, but that relationship disappears with controls for other important variables such as income inequality (Semyonov 1980). Some other studies have even found a curvillinear (U-shaped) rather than linear relationship, i.e., development initially forces women out of the labor force but as advanced levels increases female participation (Pampel and Tanaka 1986). The findings are thus rather contradictory and need further exploration.

Female Labor Force Participation and Women's Involvement in Crime:

The issue of female participation in the labor market is extremely crucial in explaining women's involvement in crime since it has been commonly argued that changing patterns of females crime can be best understood by some social-structural changes in economic opportunities offered women (Simon 1975). According to most observers, the role of women in crime is responding to changes in sex roles and the emergence of the contemporary women's movement. Female crime is coming

to resemble more closely that of men as ''employment opportunities of women expand and their interests, desires, and definitions of self shift from a traditional to a more liberated view'' (Simon 1975, p. 32). Thus, scholars tend to argue that changes in the roles of women over time would narrow sex differences in crime (Shelley 1981). Because socioeconomic development promotes a more active role of women in business and economic affairs, therefore, as women become more active in economic roles outside of the home, they are more likely to support themselves financially and hence to experience a greater need to commit e.g. property crime. This is also consistent with the sex ratio thesis that imbalanced sex ratios not only influence women's roles and status, they also expected to influence women's criminal offending. For example, where women are scarce, their roles tend to be traditional and limited primarily to the family. Women's activities center around domestic responsibilities, and they have few opportunities to engage in crime (Adler 1975). By contrast, an oversupply of women promotes their adoption of nonfamily roles and their integration into economic life which in turn expands their opportunities to commit criminal acts. This would seem to be particularly true for property crime such as larceny and theft, which ordinarily occur outside of the family unit.

A routine activity explanation of criminal victimization has been explored by some scholars (e.g., Cohen and Felson 1979) in explaining how a shift of routine activities away from the home into nonhousehold activities involving nonhousehold members increases the probability that motivated offenders will converge in space and time with suitable targets in the absence of capable guardians, and thus entail higher risk of criminal victimization. The dispersion of activities away from households and families increases the opportunity for crime and thus generates higher crime rates. Cohen and Felson argue that crime rate trends in the U.S. 1947-1974 was a by product of changes in such variables as labor force participation and single-adult household. This might partially explain the women's homicide victimization accompanying female labor force participlation. Thus, according to the above theoretical arguments, a positive relationship between female labor force participation and female property crime, or homicide victimization can be expected.

As discussed above, the relative effect of socioeconomic development and sex ratios on female labor force participation is somewhat confusing. However, a positive relationship between female labor force participation and women's involvement in crime such as female property crime or homicide victimization is rather clear. With regard to the relative effect of socioeconomic development and sex ratios as a determinant of female labor force participation, some previous studies (e.g., South and Trent 1988) have reported that with few exceptions, the effects of sex ratios

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on various women's roles are weaker than the effects of socioeconomic development (p. 111). One of these exceptions is female labor force participation, which they found a strong sex ratio effect. Because previous studies have focused mostly on the socioeconomic development effect of female labor force participation (e.g., Pampel and Tanaka 1986), the relative effect of sex ratios and socioeconomic development on female labor force participation is worth exploring further. Furthermore, South and Trent's study points out a positive and moderately strong association between socioeconomic development and the sex ratio, but they failed to indicate the actual causal direction between these two important determinants of female labor force participation. An exploration of the causal relationships between socioeconomic development and sex ratios may thus provide more understanding to how they affect female labor force participation, and in what ways.

South and Trent in their final analysis also suggest a reversed of the causal direction from that of the Guttentag and Secord (1983) thesis — that observed sex ratios are influenced by women's status. They assume that this is because the measures of women's status and roles either directly cause or are indicators of some larger factors that influences sex differentials in mortality or migraton and consequently has an effect on the sex ratio (p. 1112). The possible reciprocal relationship between the sex ratio and female labor force participation is thus also worth exploring further. Some scholars have pointed out the importance of recirprocal effects in criminological studies (e.g., Greenberg 1979; Thornberry and Christenson 1984). Thus, the possible reciprocal relationships between female labor force participation and women's involvement in crime (female property crime or homicide victimization) will also be explored. Therefore in this study, the two theses (the sex ratio thesis and the socioeconomic development thesis) will be tested by exploring the reciprocal relationships among socioeconomic development, the sex ratio, female labor force participation, and women's involvement in crime. Because previous studies have rarely discussed these possible reciprocal relationships, more theorizings about possible causal relationships (e.g., socioeconomic development ↔ sex ratios; sex ratios ← female labor force participaton; female labor force participation ← women's involvement in crime) are needed before moving forward to the empirical test.

Empirically, a positive relationship between socioeconomic development and sex ratios could be divided into two direct effects. One direct is from socioeconomic development to the sex ratio, another direct effect is from sex ratios to socioeconomic development. Theoretical explanations for these two direct effects are not impossible. For example, demographic transition theory has already pointed out that as socioeconomic development takes place, relevant demographic outcomes such as

dramatic decreases in fertility and mortality rates have resulted in some fundamental changes in the population structure. A good example is usually found in those developed countries, where the demographic transition resulted in an old age structure of population in which higher proportion of females in contrast to males is usually found. By contrast, a direct effect from sex ratios to socioeconomic development is also possible in that the labor force supply (especially the males manpower) is an important mechanism of socioeconomic development, and differential sex ratios represent differentiated division and supply of the labor force. An undersupply of males might hinder the development of productivity. Therefore sex ratios may have a negative effect on socioeconomic development.

As to the reversed direction from female labor force participation to sex ratios, an explanation given by South and Trent — that the measures of women's status and roles either directly cause or are indicators of some larger factor that influences sex differentials in mortality or migration and consequently has an effect on the sex ratio — is worth nothing. A recent explanation given by the chief of the census bureau (see World Journal, Apr. 10,1990) also indicated that female involvement in the labor force has a high correlation with various diseases encountered by the women, e.g., more and more women smoking leads to lung cancer that results in higher women's mortality rate in contrast to that of males. These arguments are very helpful in predicting a positive effect of female labor force participation on the sex ratio.

With regard to the direct effect from women's involvement in crime to female labor force participation: both female property crime and homicide victimization are expected to have negative effects on female labor force participation. This is because the higher female property crime rate will reduce the willingness of employers to provide working opportunities for the women. As a result, lower female labor force participation can be expected. This is also applied to the higher female homicide victimization rate that reduces the willingness of women to participating the labor market because of the fear effect. Hence, a relative lower female labor force participation can also be predicted. As discussed above, an exploration of the reciprocal effects among the variables will provide more understanding about these expected effects.

Data and Methods:

(1) Data: Most of the previous studies on female labor force participation

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were at the individual level, few studies have examined women's labor force participation from a cross national perspective before Semyonov (1980). Thus, a cross-national study like this is consistent with the recent development in this field (see also South and Messner 1986; Steffensmeier et al., 1989). Cross-national data on criminal behavior (e.g., various offending rates) can be obtained from International Crime Statistics published by International Police Organization. Other variables can also be drawn from some international agencies such as United Nations, World Bank, etc.

(2) Variables: The variables to be analyzed in this study include: 1) Socioeconomic development (SOCIODEV): this is represented by per capita gross national product in 1982 (in logged form to reduce the skewness of the variable). The data available for 109 countries are taken from World Development Report published by World Bank. 2) The sex ratio (SEXRATIO): this is measured by the number of males per 100 females at ages 15 to 49 in logged form. The exact year in which the sex ratio is measured ranges from 1973 to 1982. The data including 93 counties was taken from Demographic Yearbook published by United Nations. 3) Female labor force participation (EAF): the data covering 84 countries come from the international labor organization in 1982 which defines the labor force as employed persons including paid and unpaid family workers, and unemployed workers seeking employment. 4) Average female theft offending rate (THRTFAVE): this dependent variable is the relative female offending rate for theft (1976-1982) published in International Crime Statistics by International Police Organization. The data are available for 62 countries. To increase the stability of these rates, an average theft offending rate for the seven-year period between 1976 and 1982 or for as many years as data are available during this period is calculated. 5) Average female homicide victimization rate (LNFHRAVE): this homicide victimization data including 56 countries taken from World Health Organization's Annual Vital Statistics Reports. An average rate in logged form for the same seven-year period is also calculated. Other important variables will be used as instrumental variables in the analysis such as infant mortality rate (IMR), percent of urban population (URPOP), percent of females literate (ADLITF), and percent of females 15-44 married (PERUN), are taken either from World Development Report or Demographic Yearbook.

(3) Instrumental Variables:

In order to estimate the reciprocal relationship between socioeconomic development (SOCIODEV) and the sex ratio (SEXRATIO), the following models shall be examined:

$$SEXRATIO = a_1 + b_1 \; SOCIODEV + u_1 \qquad (1)$$
$$SOCIODEV = a_2 + b_2 \; SEXRATIO + u_2 \qquad (2)$$

Estimation of this model involves finding some instrumental variables which are thought to directly cause one but not the other of the "endogenous" variables theoretically.

The instrumental variables chosen for the equation which predicts the sex ratio is infant mortality rate (IMR), because theoretically, infant mortality rate leads "directly" to the variations in the sex ratio, but not "directly" to the socioeconomic development. This has been well documented by the scholars that the changing conditions of early infancy have been found to benefit more for male infants than for female infants (Verbrugge 1980). Thus, the first equation becomes:

$$SEXRATIO = a_1 + b_1 \; SOCIODEV + b_2 \; IMR + e_1 \qquad (3)$$

For second equation predicting socioeconomic development, urbanization (percent of urban population, URPOP) was chosen as an instrumental variaable. Theoretically, there is a relationship between socioeconomic development and urbanization, and urbanization also leads directly to the socioeconomic development. This has been extensively explored and empirically supported by London and Smith (1988). On the other aspect, no relationship can be assumed between the sex ratio and urbanization in that although urbanization implies more and more people concentrating in the urban areas, this movement usually involves migration in a family unit that does not cause variations in the sex ratio. Even if males migrated selectively to urban areas, this would not affect the national sex ratio, only the sex ratio across jurisdictions within nations. Therefore, the second equation is:

$$SOCIODEV = a_2 + b_3 \; SEXRATIO + b_4 \; URPOP + e_2 \qquad (4)$$

Because the effect of female education on labor force participation has been reported by Youssef (1974), an instrumental variable, percent of females literate (ADLITF) can also be chosen for female labor force participation. Thus, for

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exploring the reciprocal relationship between socioeconomic development and female
labor force participation, the equations become:

$$EAF = a_1 + b_1 \; SOCIODEV + b_2 \; ADLITF + e_1$$
$$SOCIODEV = a_2 + b_3 \; EAF + b_4 \; ADLITF + e_2$$

The equations for reciprocal relationship between the sex ratio and female labor
force participation are:

$$EAF = a_1 + b_1 \; SEXRATIO + b_2 \; ADLITF + e_1$$
$$SOCIODEV = a_2 + b_3 \; EAF + b_4 \; IMR + e_2$$

The same equations can also be constructed for the reciprocal relationships
between female labor force participation and average female theft offending rate
(THRTFAVE), and between female labor force participation and average female
homicide victimization rate (LNFHRAVE). Here percent of females literate (ADLITF)
is chosen as an instrumental variaable for female labor force participation; and
percent of females 15-44 married (PERUN) is chosen as an instrumental variabale
for THRTFAVE and LNFHRAVE. Theoretically, percent of females 15-44 married
leads negatively to women's involvement in crime because married women
tend to have more supportive social networks and usually perform most of the
function of the children socialization at home that both prevent them from becoming
involved in criminal activities (Hagan 1988, p. 266-274). No relationship between
percent of females 15-44 married and female labor force participation can be
theoretically assumed in that both phenomena are independent to each other and
affected by some other variables. Thus, the equations become:

$$EAF = a_1 + b_1 \; THRTFAVE + b_2 \; ADLITF + e_1$$
$$THRTFAVE = a_2 + b_3 \; EAF + b_4 \; PERUN + e_2$$
$$EAF = a_1 + b_1 \; LNFHRAVE + b_2 \; ADLITF + e_1$$
$$LNFHRAVE = a_2 + b_3 \; EAF + b_4 \; PERUN + e_2$$

(4) Statistical Method:

After these instrumental variables are selected, an estimation technique — — —
two-stage least squares (2SLS) can be used. Ordinary least squares (OLS) regression
is inappropriate because the error term is correlated with the endogenous

variables in the equation. As a result, the estimation of the parameters for each pair of equations is biased. The method of two-stage least squares attempts to purge the endogenous variables of the error term by making an estimate of their value which is uninfluenced by the error term (Erlander and Winsborough 1977). In the first stage, I regress each endogenous variable on all of the instrumental variables using ordinary least squares. The equations for these regressions, called the reduced form equations, can be shown as follows:

$$\text{SEXRATIO} = a_3 + b_5 \ \text{IMR} + b_6 \ \text{URPOP} + e_3 \qquad (5)$$
$$\text{SOCIODEV} = a_4 + b_7 \ \text{IMR} + b_8 \ \text{URPOP} + e_4 \qquad (6)$$

Likewise, for the other pairs of equations:

$$\text{EAF} = a_3 + b_5 \ \text{URPOP} + b_6 \ \text{ADLITF} + e_3$$
$$\text{SOCIODEV} = a_4 + b_7 \ \text{URPOP} + b_8 \ \text{ADLITF} + e_4$$
$$\text{SEXRATIO} = a_3 + b_5 \ \text{ADLITF} + b_6 \ \text{IMR} + e_3$$
$$\text{EAF} = a_4 + b_7 \ \text{ADLITF} + b_8 \ \text{IMR} + e_4$$
$$\text{EAF} = a_3 + b_5 \ \text{ADLITF} + b_6 \ \text{PERUN} + e_3$$
$$\text{THRTFAVE} = a_4 + b_7 \ \text{ADLITF} + b_8 \ \text{PERUN} + e_4$$
$$\text{EAF} = a_3 + b_5 \ \text{ADLITF} + b_6 \ \text{PERUN} + e_3$$
$$\text{LNFHRAVE} = a_4 + b_7 \ \text{ADLITF} + b_8 \ \text{PERUN} + e_4$$

Calculated values can thus be generated for the instrumental variables in the reduced form equations as shown in Table 1 and Table 1-1. For the first pair of equations in Table 1, both infant mortality rate (IMR) and percent of females literate (ADLITF) have direct direct effects on sex ratios (b= -0.0005, $p < 0.001$ and b= -0.0004, $p < 0.05$ respectively). However, a comparison of beta weights shows that infant mortality rate has a greater effect (beta= -0.759) on sex ratios. In comparison to that of percent of females literate (beta= -0.469), this might imply infant mortality rate is probably a better instrumental variable for sex ratios. It has to be noted that although percent of female literate has been theoretically justified not directly affecting sex ratios, empirically it is not totally uncorrelated to the sex ratio. This is also held for percent of females literate as an instrumental variable for female labor force participation. Likewise, urbanization and percent of female literate were chosen as instrumental variable for the second pair of equations; infant mortality rate and urbanization were instrumental variables for the third pair of equations.

In Table 1-1, although percent of females literate (ADLITF) seems to have

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Table 1: Reduced Form Coefficients for the Three Pairs of Equations: (The Sex Ratio Vs The Socioeconomic Development Thesis)

Dependent variable	Intercept	Infant mortality rate (IMR)	% urban population (URPOP)	% females literate (ADLITF)
sex ratio (SR15)	2.06	$-.0005^{a}$*** $(-0.759)^{b}$	——	$-.0004$* (-0.469)
female labor force participation (EA)	13.814	0.168 (0.408)	——	0.253 (0.446)
socioeconomic development (LNGN)	5.119	—— ——	0.0278*** (0.528)	0.017*** (0.412)
female labor force participation (E)	42.312	—— ——	-0.301** (-0.413)	0.2* (0.353)
socioeconomic development (LNGNN)	6.954	-0.013*** (-0.454)	0.027*** (0.511)	——
sex ratio (SR154)	1.962	0.00003 (0.03)	0.0007** (0.358)	——

Notes: a — metric regression coefficient.
       b — standardized regression coefficient.
     * $p<0.05$ **$p<0.01$ **$p<0.001$

a lower beta weight for female labor force participation (beta = 0.342), its direct effect on female labor force participation has been theoretically justified by Youssef (1974). Likewise, percent of females 15-44 married (PERUN) has been theoretically justified as having a direct effect on women's involvement in crime (see Hagan 1988), however, it seems to have a lower beta weight than the other instrumental variable (ADLITF) empirically. It has to be noted that previous research (e.g.,

Table 1-1: Reduced Form Coefficients for the Two Pairs of Equations: (Female
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Dependent variable	Intercept	% females 15-44 married (PERUN)	% females literate (ADLITF)
average female theft offending rate (THRTF)	−365.32	3.956[a]* (0.388)[b]	2.804*** (0.76)
female labor force participation (EAFF)	−20.54	0.734** (0.448)	0.194* (0.342)
average female homicide victimization rate (LNFH)	1.777	−0.03 (−0.136)	−0.007 (−0.177)
female labor force participation (E)	−20.54	0.734** (0.448)	0.194* (0.342)

Notes: [a] — metric regression coefficient.
　　　 [b] — standardized regression coefficient.
　　　 * $p < 0.05$ 　 **$p < 0.01$

Erlander and Winsborough 1977, p. 242) has pointed out that specification of
instrumental variables is a rather difficult or even not possible job, especially in
secondary analysis of data. This is, of course, a limitation of two stages least squares
technique. However, for the interest of examining the possible reciprocal effects
among the variables, "theoretical" justification for the selection of instrumental
variables is very important, although empirically the results are sometimes inconsistent
with what has been theoretically justified.

　　　Here, the new calculated values of the dependent variable (e.g., LNGNN) are
revealed as a determinant of the endogenous variable (e.g., the sex ratio) that is
uncorrelated with any disturbance of the endogenous variable. In the second stage,
I compute ordinary least square estimates for the structural equation by substituting
these new calculated values (e.g., LNGNN, SR154 as shown in the reduced form

equations) for the endogenous variables as they appear as independent variables in the equations. This can be shown as follows:

$$SEXRATIO = a_1 + b_1 \; LNGNN + b_2 \; IMR + e_6 \qquad (7)$$
$$SOCIODEV = a_2 + b_3 \; SR154 + b_4 \; URPOP + e_7 \qquad (8)$$

Likewise, for the other equations:

$$EAF = a_1 + b_1 \; LNGN + b_2 \; ADLITF + e_6$$
$$SOCIODEV = a_2 + b_3 \; E + b_4 \; URPOP + e_7$$
$$EAF = a_1 + b_1 \; SR15 + b_2 \; ADLITF + e_6$$
$$SEXRATIO = a_2 + b_3 \; EA + b_4 \; ADLITF + e_7$$
$$EAF = a_1 + b_1 \; THRTF + b_2 \; ADLITF + e_6$$
$$THRTFAVE = a_2 + b_3 \; EAFF + b_4 \; PERUN + e_7$$
$$EAF = a_1 + b_1 \; LNFH + b_2 \; ADLITF + e_6$$
$$LNFHRAVE = a_2 + b_3 \; EAFFF + b_4 \; PERUN + e_7$$

These estimates are taken as the estimates of the parameters of equations (3) and (4) which can be shown in Table 2, 2-1, and Table 3.

Results:

Table 2 presents the two-stage least square estimates of the structural parameters. For the reciprocal effects between sex ratios and female labor force participation, female labor force participation is found to have a negative effect on the sex ratio (beta $= -0.28$, $p < 0.05$), but there is no direct effect from the sex ratio to female labor force participation (beta $= -0.149$, $p > 0.05$). Although previous studies have indicated a strong negative sex ratio effect on female labor force participation (South and Trent 1988), this study suggests a possible reversed relationship between the two variables. That is, the more female participation in the labor force, the smaller the number of males in contrast to that of females in the population. This finding is consistent with South and Trent's suggestion tht observed sex ratios are probably influenced by women's status. In other words, the measures of women's status and roles either directly cause or are indicators of some larger factor that influences sex differentials in mortality or migration and consequently has an effect on the sex ratio. However, the negative direct effect from female labor force participation

Table 2: Structural Coefficients for Simultaneous Equation Model Using Two Endogenous Variables: The Sex Ratio Vs The Socioeconomic Development Thesis.

dependent variable	intercept	endogenous	variables	instrumental variable	R^2
socioeconomic development	120.003	−57.33***SR154 (−0.06)***	−0.002E (−0.009)	0.062URPOP (0.07)	0.801***
sex ratio	2.01	0.009LNGNN (0.317)	−0.002*EA (−0.28)***	−0.00003IMR (−0.045)	0.214**
female labor force participation	519.19	−9.976*LNGN (−0.603)	−213.75SR15 (−0.149)	0.396*ADLITF (0.698)*	0.127*

Notes: Standardized regression coefficients in the parenthesis.
$* \ p < 0.05 \qquad ** \ p < 0.01 \qquad *** \ p < 0.001$

to sex ratio is inconsistent with previous prediction. That is, the mortality explanation given by the census bureau that female involvement in the labor force leads directly to various diseases encountered by the women resulting in higher women's mortality rate is not empirically supported by the data. Thus, the higher proportion of females in contrast to males in the population accompanying higher female labor force participation could probably be explained by the fact that the female labor market has induced more female migration streams from other less developed countries. This sex differential in migration consequently has an effect on the sex ratio. However, more evidence is needed for this kind of explanation.

For the reciprocal relationships between socioeconomic development and female labor force participation, it is clear from the Table 2 that socioeconomic development is found to have a certain negative effect on female labor force participation (beta = −0.603, $p < 0.05$), while no direct effect is found from female labor force participation to socioeconomic development (beta = −0.009, $p > 0.05$). This finding is inconsistent with some previous studies that have shown no direct relationship between socioeconomic development and female labor force participation (e.g., Ferber and Lowry 1977; Nuss and Majka 1983; South and Trent 1988). However, it is worth noting that R square for this equation is only 0.127, that means only a small proportion of variance in female labor force participation is accounted for

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by socioeconomic development and other two variables. This might indicate that socioeconomic development, although has some effect on female labor force participation, is not a good determinant of it. The instrumental variable, percent of females literate, is also found to have a direct effect on female labor force participation. The beta weight of the percent of females literate (0.698) is in the expected direction and a little stronger than that of socioeconomic development (-0.603).

A negative direct effect from socioeconomic development to female labor force participation implies that the higher the socioeconomic development, the lower the rate of female labor force participation. Thus, in contrast to other determinants of female labor force participation as discussed by other scholars, the effect of socioeconomic development seems not so important in explaining the rate of female labor force participation in that socioeconomic development has a negative effect on female labor force participation and with only a small proportion of variance explained. Nevertheless, because a later analysis shows that this negative effect is also held for both less and more developed countries, a probable explanation is that because socioeconomic development has been argued as having some possible adverse impact, e.g., high competition, on women's life (Tinker 1976), this might reduce the willingness of many women in seeking participation in the labor force. Furthermore, many researchers (e.g., Pampel and Takana 1986; Ward and Pampel 1985) have indicated many other possible important determinants of female labor force participation, e.g., female fertility, patriarchal family structure, activist ideology for female employment, expansion of the labor force and demand, etc. These variables are all important for explaining the rate of female labor force participation. Further studies focusing on more complete causal modelling construction would be very useful in determing the relative effect of socioeconomic development. For this study, a tentative conclusion is that socioeconomic development has a certain but unexpected negative effect on female labor force participation.

For the reciprocal effects between socioeconomic development and sex ratios, the sex ratio has a moderate and negative influence on socioeconomic development (beta = -0.6, $p < 0.001$), but socioeconomic development seems to have no direct effect on sex ratios (beta = 0.317, $p > 0.05$). Previous theoretical discussion has already pointed out a possible direct effect from sex ratios to socioeconomic development because sex ratios imply differentiated division and supply of the labor force which is very crucial for the socioeconomic development. Thus, the higher the sex ratio (i.e., the more underesupply of women in contrast to men), the lower the level of socioeconomic development, according to this simultaneous equation

model.

As can be shown in Table 2-1, there are reciprocal relationships between female labor force participation and average theft offending rate. Female labor force participation has a positive direct effect on average female theft offending rate (beta = 0.806, p<0.001), while average female theft offending rate also has a positive direct effect on female labor force participation (beta = 0.764, p<0.01). The former finding is consistent with pervious research finding that women's participation in the labor force leads directly to the female theft offending rate (e.g., Shichor 1985; South and Messner 1986). However, the latter finding is

Table 2-1: Structural Coefficients for Simultaneous Equation Model : Female Labor Force Participation and Women's Involvement in Crime

dependent variable	intercept	endogenous variables	instrumental variable
female labor force participation	47.29	0.185**THRTF (0.764)	−0.326*ADLITF (−0.574)
average female theft offending rate	2604.26	144.57***EAFF (0.806)	−6.65***PERUN (−0.653)
female labor force participation	79.88	−56.51**LNFH (−0.582)	−0.2ADLITF (−0.353)
average female homicide victimization rate	−5.923	−0.374EAFFF (−0.35)	−0.013PERUN (−0.133)

Notes: Standardized regression coefficients in the parenthesis.
     * p<0.05   ** p <0.01   *** p<0.001

inconsistent with previous expectation in that here average female theft offending rate has a positive rather than negative effect on female labor force participation. Thus, the higher female property crime rate tends to induce more women participation in the labaor force. This is probable due to the fact that there are so many women devoting their career to the labor market in the modern economies (including

female migration streams from other countries). As female property crime rate increases, employers tend to replace with other female labor force quickly that results in more and more women participation in the labor force.

The reciprocal relationships between female labor force participation and average female homicide victimization rate can also be shown in Table 2-1. Here female labor force participation is found to have no direct on average female homicide victimization rate (beta = −0.35, p>0.05). However, average female homicide victimization rate is found to have a negative effect on female labor force participation (beta = −0.582, p<0.01). The latter finding is consistent with previous prediction that the higher female homicide victimization rate has an adverse effect on female labor force participation. However, the former finding is inconsistent with Cohen and Felson (1979)'s prediction tht the dispersion of activities away from households and families increases the opportunity for female victimization rate. The result of this study fails to find a direct effect from female labor force participation to female homicide victimization rate.

Table 3 shows the estimates of reciprocal effects for the five pairs of equations. It is clear from the Table that the sex ratio leads directly to socioeconomic development (b = −57.33, p<0.001); while female labor force participation has a negative effect on sex ratios (b = −0.002, p<0.05); and socioeconomic development has certain effect on female labor force participation (b = −9.976, p<0.05). It is also worth of noting that female labor force participation has reciprocal relationships with average female theft offending rate, and that average female homicide victimization rate has a negative direct effect on female labor force participation. The patterns of simultaneous equation coefficients suggest that both socioeconomic development and the sex ratio are not appropriate determinants of female labor force participation, while the sex ratio is related to socioeconomic development. By contrast, female labor force participation is a good predictor of sex ratios and female theft offending rate but not female homicide victimization rate, while women's involvement in crime leads directly to female labor force participation. Thus, the results of this cross- national study do not support the socioeconomic development as well as the sex ratio explanation of female labor force participation. Although female labor force participation leads directly to female theft offending rate, no conclusion can be made regarding the effect of socioeconomic development on women's involvement in crime in that a negative rather than positive direct effect from socioeconomic development to female labor force participation has been found. This is consistent with Steffensmeier et al. (1989)'s finding that the traditional view of the relation between development and sex differentials in crime as a result of

Table 3: Estimates of Reciprocal Effects Using Simultaneous Equation Models

Reciprocal effects	b	beta
SOCIODEV → SEXRATIO	0.009	0.317
SEXRATIO → SOCIODEV	−57.33***	−0.6***
SEXRATIO → EAF	−213.75	−0.149
EAF → SEXRATIO	−0.002*	−0.28*
SOCIODEV → EAF	−9.976*	−0.603*
EAF → SOCIODEV	−0.002	−0.009
EAF → THRTFAVE	144.57***	0.806***
THRTFAVE →	0.185**	0.764**
EAF → LNFHRAVE	−0.374	−0.35
LNFHRAVE → EAF	−56.51**	−0.582**

Notes: * p<0.05   ** p<0.01   *** p<0.001

the greater equalization of gender roles accompanying development was not supported (p. 277). A reversed relationship between sex ratios and female labor force participation is also consistent with South and Trent (1988)'s suggestion. The direct effect from sex ratios to socioeconomic development is also very helpful in promoting the understanding of the causal relationship between the two variables which has rarely been explored.

Because a negative direct effect from socioeconomic development to female labaor force participaton is contrary to many previous studies' finding, further exploration of this negative effect using subsamples would probably provide greater understanding about it. Many previous studies have alreayd pointed out possible interaction relationship between socioeconomic development and the sex ratio — that is, the effect of the sex ratio (or other variables) on female labor force participation varies by the level of socioeconomic development (Ward and Pampel 1985; Pampel and Tanaka 1986; South and Trent 1988). This study will replicate this possible interaction process by using the median of the GNP (7.842) to dichotimize the full sample into less and more developed countries. Table 4 shows the estimates of reciprocal effects using simultaneous equation model for both less and more developed countries.

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Table 4: Estimates of Reciprocal Effects Using Simultaneous Equation Model for
Less Developed (LD) and More Developed (MD) Countries.

Reciprocal effects	b	beta
SOCIODEV→SEXRATIO	MD:0.015	0.167
	LD:−0.007	−0.129
SEXRATIO→SOCIODEV	MD:−30.53***	−0.936***
	LD:129.0**	0.791**
SEXRATIO→EAF	MD:366.5	0.270
	LD:−1118.3	−0.276
EAF→SEXRATIO	MD:−0.001**	−0.671**
	LD:−0.0005	−0.148
SOCIODEV→EAF	MD:−28.15*	−0.398*
	LD:−35.68*	−0.995*
EAF→SOCIODEV	MD:−0.009	−0.172
	LD:0.044	0.582

Notes: * $p < 0.05$ **$p < 0.01$ ***$p < 0.001$

A negative direct effect from socioeconomic development to female labor force participation is also held for both more and less developed countries. This is inconsistent with scholars' (e.g., Boserup 1970; Oppenheimer 1970) prediction. They argued that socioeconomic development has a positive effect on female labor force participation in more advanced rather than less advanced economies. However, for less developed countries, this negative effect (beta = −0.995, $p < 0.05$) is rather stronger than that in more developed countries (beta = −0.398, $p < 0.05$). This is probably due to the fact that women in less developed countries tend to play more important roles in the labor force. Therefore the direct effect of socioeconomic development is rather strong for them. For more developed countries, this negative effect is diminished in that although women no longer have to support their families, the adverse impact of development on women's life still works to reduce women's willingness to participate in the labor force (see Tinker 1976).

As can be shown in Table 4, the direct effect of the sex ratio on socioeconomic development is also found to hold in both less and more developed countries. That is, the sex ratio does exert certain direct effects on socioeconomic development.

Consistent with previous theoretical prediction, there is an expected negative direct effect from sex ratios to socioeconomic development in more developed countries (beta = -0.936, p$<$0.001), and an expected positive direct effect from sex ratios to socioeconomic development for less developed countries (beta = 0.791, p$<$0.01). A positive direct effect from sex ratios to socioeconomic development for less developed countries implies that an undersupply of females is related to the higher level of socioeconomic development. In other words, socioeconomic development of less developed countries relies upon male manpower for serving the production function. By contrast, a negative direct effect from sex ratios to socioeconomic development for more developed countries implies that an oversupply of females is related to the higher level of socioeconomic development. That is, for more developed countries women devoting their career in the service sector are conducive to the socioeconomic development. Furthermore, socioeconomic development seems to have no direct effect on the sex ratio for both more and less developed countries. This is consistent with that found by using full sample.

A direct effect from female labor force particiaption to sex ratios for more developed countries can also be found in Table 4 (beta = -0.671, p$<$0.01). But this negative effect does not hold for less developed countries (beta = -0.148, p$>$0.05). This result is consistent with the argument discussed above that female migration streams from less developed to more developed countries seeking jobs in the labor force. Thus, sex ratios in more developed countries are changed as a result of more females migrating from other less developed countries.

By dichotomizing the full sample into less and more developed countries, the results are rather similar to that found by using full sample. The only exception is that the negative effect from female labor force participation to sex ratios no longer helds for less developed countries. This is probably due to some other reasons still unidentified in less developed countries. Overall, the results discussed above contrary to the socioeconomic development thesis in that there are some unexpected negative direct effects from socioeconomic development to female labor force participation for all nations as well as for more or less developed countries. The results also do not support the sex ratio thesis in that no direct effect from the sex ratio to female labor force participation was found. The negative effect of socioeconomic development on female labor force participation, accompanying only a very small variance explained, both can not provide any further explanation for women's involvement in crime. Other structural determinants of the female labor force participation in addition to socioeconomic development and the sex ratio might probably be more useful in explaining women's involvement in crime.

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Discussion and Conclusion:

In this study, two explanations of female labor force participation (the socioeconomic development thesis and the sex ratio thesis) are presented and discussed to determine whether female laabor force participation leads to women's involvement in crime. A test of these two theses using cross-national data shows that socioeconomic development has an unexpected negative effect on female labor force participation, while sex ratios have no direct effect on female labor force participation. A negative rather than positive effect from socioeconomic development to female labor force participation probably means the possible adverse effects of development on women's life as suggested by Tinker (1976). This negative direct effect thus can not be fully used further to explain women's involvement in crime.

An examination of the reciprocal effects among the five variables by using two-stage least square regression shows that female labor force participation has reciprocal relationships with female theft offending rate. Consistent with the previous theoretical prediction, female labor force participation leads positively to the female theft offending rate. However, a positive reversed effect from female theft offending rate to female labor force participation is inconsistent with theoretical expectation. This has been justified as the flexible replacement of female labor force by employers in facing the growing female crime rate. Further, female labor force participation is found to have no effect on female homicide victimization rate, while a negative direct effect from female homicide victimization rate to female labor force participation is consistent with the fear effect explanation as discussed previously. Moreover, female labor force participation is also found to be an important determinant of sex ratios. This finding is consistent with South and Trent (1980)'s suggestion for reversing the causal ordering of the variables, i.e., observed sex ratios are influenced by women's status. However, a negative direct effect from female labor force participation to sex ratios is inconsistent with the mortality explanation provided by the chief of the census bureau. Sex ratios have also been found to have a negative direct effect on socioeconomic development. This is because differential sex ratios representing differentiated division and supply of labor force, it can be expected that sex ratios are related to the socioeconomic development.

In order to further explore the negative effect of socioeconomic development on female labor force participation, the full sample was dichotomized into more and less developed countries to see if there is any expected theoretical relationship in the subsample. The results show that socioeconomic development also leads negatively to female labor force participation for both less and more developed

countries. However, because the variance explained by socioeconomic development for all nations as well as for less and more developed countries is rather small, other determinants of female labor participation other than socioeconomic development might be more powerful in explaining female's participation in the labor force. Sex ratios have also been found to have an expected positive effect on socioeconomic development for less developed countries and an expected negative effect for more developed countries. The only exception is that the negative effect from female labor force participation to sex ratios no longer held for less developed countries. This has been justified by the fact that females migrating from less to more developed countries cause variations in the sex ratio. An examination of the subsamples reveals a rather similar result as that found by using full sample. Because both socioeconomic development and sex ratios are not correlated to female labor force participation in the theoretically expected direction, they can not provide any further understanding to the relationships between female labor force participation and women's involvement in crime. Other structural determinants of female labor force participation are suggested as probably having more explanatory power than the sex ratio or the socioeconomic development explanations.

Finally, although this study provides some empirical support for the relationship between female labor force participation and women's involvement in crime, some of the limitations of the study can not be ignored. First, by using cross-national data for analysis, the possible sample selection bias problem is not discussed to avoid the further complexity of the two-stage least regression analyses. Moreover, the selection and specification of instrumental variables for endogenous variable is somewhat difficult in that some instrumental variables have relationships with both endogenous variables empirically. Nevertheless, simultaneous equation models are rather useful in exploring the reciprocal relationships between the variables, especially for such kind of exploratory study. Further studies may try to use other determinants of female labor force participation with a special focus on careful selection of instrumental variables (e.g., using two rather than one instrumental variables for each endogenous variable) to increase the understanding of the structural determinants of female labor force participation and women's involvement in crime.

References

Adler, Freda 1975. Sisters in Crime: The Rise of the New Female Criminal. N.Y.: Mcgraw-Hill.

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Boserup, Ester 1970. Women's Role in Economic Development. London: Allen & Unwin.

Bowker, Lee H. 1978. Women, Crime, and the Criminal Justice System. Lexington, MA: Lexington Books.

Cohen, L.E., and Marcus Felson 1979. "Social Change and Crime Rate Trends: A Routine Activity Approach." American Sociological Review 44:588-608.

Erlander, H.S., and H.H.Winsborough 1977. "The Subculture of Violence Thesis: An Example of A Simultaneous Equation in Sociology." Sociological Methods and Research 5:231-246.

Ferber, M., and H.Lowry 1977. "Women's Place: National Differences in the Occupational Mosaic." Journal of Marketing 41:23-30.

Greenberg, D.F., and R.C. Kessler 1979. "A Panel Model of Crime Rates and Arrest Rates." American Sociological Review 44:834-50.

Groves, W. Byron, Richard McCleary, and Graeme R. Newman 1985. "Religion, Modernization, and World Crime." Comparative Social Research 8:59-78.

Guttentag, Marcia, and Paul F. Secord 1983. Too Many Women? The Sex Ratio Question. Beverly Hills, Calif: Sage.

Hagan, John. 1988. Modern Criminology: Crime, Criminal Behavior, and it control. McGraw-Hill international editions.

Klein, Dorie 1973. "The Etiology of Female Crime: A Review of the Literature." Crime and Social Justice: Issues in Criminology (Fall): 3-30.

Krohn, Marvin D. 1976. "Inequality, Unemployment and Crime: A Cross-National Analysis." Sociological Quarterly 17:303-13.

Land, K.C., and F.C. Pampel 1980. "Aggregate Male and Female Labor Force Participation Functions: An Analysis of Structural Differences, 1947-77." Social Science Research 9:37-54.

London, Bruce, and David A. Smith 1988. "Urban Bias, Dependency, and Economic Stagnation in Non-Core Nations." American Sociological Review 53:454-63.

Messner, Steven F. 1982. "Societal Development, Social Equality, and Homicide: A Cross-National Test of a Durkheimian Model." Social Forces 61:225-40.

Norland, Stephan, and Neal Shover 1977. "Gender Roles and Female Criminality: Some Critical Comments." Criminology 15:87-107.

Nuss, S., and L. Majka 1983. "The Economic Integration of Women: A Cross-National Investigation." Work and Occupations 10:29-48.

Oppenheimer, Valerie K 1970. The Female Labor Force in the United States. Institute for International Studies, Berkeley.

Pampel, Fred C., and Kazuko Tanaka 1986. "Economic Development and Female Labor Force Participation: A Reconsideration." Social Forces 64:599-619.

Rogers, John D. 1989 "Theories of Crime and Development." Journal of Development Studies 25:314-28.

Rosenblum, K.E. 1975. "Female Deviance and the Female Sex Role: A Preliminary Investigation." British Journal of Sociology 26:169-85.

Semyonov, M. 1980 . "The Social Context of Women's Labor Force Participation: A Comparative Analysis." American Journal of Sociology 86:534-50.

Shelley, Louise I. 1981. Crime and Modernization: The Impact of Industrialization and Urbanization on Crime. Carbondale, IL: Southern Illnois University Press.

Shichor, David 1985. "Effects of Development on Official Crime Rates, 1967-1978:

Homicide and Larceny Patterns Differ Greatly." Sociology and Social Research 70:96-97.

Simon, Rita J. 1975. The Contemporary Women and Crime. Rockville, MD: National Institute of Mental Health.

Smart, Carol 1976. Women, Crime and Criminology: A Feminist Critique. London: Routledge and Kegan Paul.

South, S.J., and S.F. Messner 1986. "The Sex Ratio and Women's Involvement in Crime: A Cross-National Analysis." The Sociological Quarterly 28:171-88.

South, S.J., and K. Trent 1988. "Sex Ratios and Women's Roles: A Cross-National Analysis." American Journal of Sociology 93:1096-1115.

Steffensmeier, Darrell J. 1978. "Crime and the Contemporary Women: An Analysis of Changing Levels of Female Property Crime, 1960-1975." Social Force 57:566-84.

_____ , 1980. "Sex Differences in Patterns of Adult Crime, 1965-1977: A Review and Assessment." Social Forces 58:1080-1108.

_____ , Emilie Allen, and Cathy Streifel. 1989. "Development and Female Crime: A Cross-National Test of Alternative Explanations." Social Forces 68:262-83.

Stewart, Abigail J. and David G. Winter 1977. "The Nature and Causes of Female Suppression." Signs 2:531-53.

Taylor, Ian, Paul Walton and Jock Young 1973. The New Criminology. N.Y.: Harper Torchbooks.

Thornberry, T.P., and R.L. Christenson 1984. "Unemployment and Criminal Involvement: An Investigation of Reciprocal Causal Structures." American Sociological Reivew 398-411.

Tinker, I. 1976. "The Adverse Impace of Development on Women." In I. Tinker and M. Bramsen(eds.) Women and World Development. Overseas Development Council.

Verbrugge, Lois M. 1980. "Recent Trends in Sex Mortality Differentials in the United States." Women and Health 5:17-37.

Ward, Kathryn B. 1984. Women in the World-System: Its Impact on Status and Fertility. N.Y.: Praeger.

_____ , and Fred C. Pampel 1985. "Structural Determinants of Female Labor Participation in Developed Nations, 1955-1975." Social Science Quarterly 66:654f-66.

Wellford, Charles F. 1974. "Crime and Dimensions of Nations." International Journal of Criminological Penology 2:1-10.

Wilensky, H.L. 1968. "Women's Work: Economic Growth, Ideology and Social Structure." Industrial Relations 7:235-48.

Youssef, Nadia H. 1974. Women and Work in Developing Societies. University of California Press.