MILITARIZATION AND ITS EFFECTS ON WOMEN'S ECONOMIC STATUS:
A CROSS-NATIONAL STUDY

THESIS

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BY

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This research tested the hypothesis that militarization of societies, as defined by the percent of national budgets spent on military expenditures, has adverse effects on women's economic status relative to men's. This study also examined other predictor variables known to affect women's status. Data from sixty different nations were analyzed by means of multiple regression techniques. Results show that the militarization variable increased women's share of agriculture, which suggests that as men are mobilized into military activities, women are left to produce food for the country, a situation which can have contradictory effects on women's economic status. What is more important than militarization in predicting women's economic status relative to men's are high birth rates and sex ratios, which clearly depress women's economic opportunities.
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CHAPTER 1

STATEMENT OF THE PROBLEM

Introduction

Rosa Delgado, a Nicaraguan peasant woman, looks sadly at her children as they run out to play. Recently widowed, she knows that danger lurks in the countryside with the war raging between the government soldiers and the "contras." Several thousand miles away in the United States, Lucinda flips through the want-ad section of her local newspaper as she looks for a job as a social worker. It seems to her that there are fewer advertisements in her profession during the past several years. Rosa Delgado is painfully aware of how the militarization of her country has adversely affected her life. Lucinda is oblivious to the fact that the war machine in her own nation may be diminishing her employment opportunities.

Global military expenditures have grown at an increasing rate in the last half of the twentieth century. Military spending reached $825 billion in 1986, which is estimated in constant dollars to be almost 2.5 times the level of spending in 1960. From 1961 through 1986, eighty-one major wars have been fought killing approximately 12,555,000 men, women and children (Sivard, 1987). These human beings are the obvious casualties of war. But what are the indirect effects of such massive military activities? And more specifically, how does this affect the women of the world?
Statement of the Problem

Analyzing the effects of military spending on job opportunities, Marion Anderson (1982a) concludes that in 1980 the U.S. defense budget of $135 billion cost American women over 1,280,000 jobs. She, along with others, (Anderson, 1982b; Brock-Utne, 1985; Dumas, 1986) argues that military spending is not good for the overall economy, while Anderson (1982a) also shows that it is especially detrimental to women. A study conducted in Italy indicates similar adverse affects of defense spending on Italian women (Addis, 1988).

Researchers who have looked at the issue of militarization and its effects on women generally agree that the relationship is negative, but few have attempted to quantify their conclusions. None have looked at the problem across cultures and nations. This study analyzes 60 countries to show the effects that militarization has on women’s status relative to men’s status.

Women’s status is conceptually defined as how well women are doing economically relative to men. This study primarily concentrates on the economic indicators of women’s status as this is the most important component of women’s status (Blumberg, 1984; Sanday, 1981; Ward, 1984). Economic power gives people access to other social positions of power, prestige and freedom.

Militarization is conceptually defined as the “process of emphasizing military values, policies, and preparedness” (Reardon, 1985, p. 14). This research focuses on one significant measure of military policies and preparedness which is the amount that national governments spend on the maintenance of their military institutions and the procurement and/or production of weapons.

In addition to testing the effects of militarization, this study also examines other variables that in prior studies have shown significant effects on women’s economic status. These variables include women’s labor force
participation rate, birth rate, marriage rate, divorce rate, sex ratio, energy consumption per capita, and percent of the total work force in manufacturing. This thesis tests to see if these predictor variables have the same effects as previously reported, as well as determine how much more of the variance in women's economic status relative to men's can be explained by adding the effect of militarization to the equation.

Importance of the Study

This study expands our knowledge about the subtle consequences of militarization. It gives empirical emphasis to abstract theories that suggest the adverse effects of military spending on the women of the world. It looks at the issue of militarization across diverse cultures to trace the common effects on women's status.

Additionally, this study tests certain theories of gender stratification and the results obtained from prior research. It also determines whether militarization makes a difference in women's economic status in addition to other variables known to effect women's status. In doing so, this research project adds to our knowledge about the structural determinants of gender inequality.
CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter begins with theories on how warfare came into existence and what kinds of effects the warfare complex had on women's status in general. The discussion starts with preliterate horticultural societies, moves through ancient agrarian states, and ends with modern industrialized nations. It shows some important links between military ideology and women's status relative to men's. It indicates how contemporary militarism differs from historical militarism and the current effects on women's status. This literature review builds the theoretical framework for the major focus of this research project which is the effects of contemporary militarism on women's economic status relative to men's.

In addition, there is a discussion of several predominant gender stratification theories and a review of empirical studies which tested structural determinants of gender inequality. This review will build the framework for the design of the remainder of the project which is to determine how much more of women's economic status relative to men's can be explained by adding the effect of militarization.

Historical Militarism

Marvin Harris (1977) proposes that the warfare complex is the core reason for women's subordination to men. Men's control of political institutions,
patrilineality, patrilocality and all other patriarchal processes are consequences of "warfare and the male monopoly over military weaponry" (Harris, 1977, p. 60). In Harris's view, as the first warfare complex developed in horticultural societies, women's status declined relative to men's. Human beings began settling down, living in one location, and accumulating wealth. But their lack of mobility strained the environment and people began fighting over scarce resources. Harris contends that men, rather than women, were typically trained as warriors due to their heavier muscular and skeletal structures. In addition, and perhaps more importantly, the ideology that supports the warfare complex is one of gender hierarchy--men are superior to women. Warriors must be motivated to risk their lives in battle. "Males who are successful warriors are rewarded with several wives and sexual privileges that depend on women being reared to accept male supremacy" (Harris, 1977, p. 43). If women are allowed to show that they can be as victorious on the battlefield as men, the belief system in male supremacy may begin to fall apart.

Overpopulation and scarce resources in pre-literate societies not only resulted in warfare but also brought about another major consequence that reflects the devaluation of women relative to men--the practice of female infanticide. Babies were killed to curtail overpopulation. Eliminating male children would not be as effective in controlling population size as eliminating female children, the potential child bearers, because it is the number of women that determine the birth rate of a society. Warfare does not kill sufficient numbers of men to depress long-term population growth. Even large industrialized wars such as World War I and II did not reduce growth rates for any substantial period of time (Harris, 1974 & 1977).
The militaristic ideology of male supremacy not only provided the motivation for men to sacrifice themselves in battle, for women to subjugate themselves to men, and for parents to kill their female offspring, it also ensured men's control over the weaponry. This pattern of male dominance over warfare and military weapons prevails in industrialized nations as men traditionally control decisions regarding the military. Even the civilian production of weaponry in the United States is male dominated as 77 percent of employees in defense-related industries are men. Men are even more grossly over represented in the professional and technical occupations of the defense industry (Blank and Rothschild, 1985).

Betty Reardon (1985) agrees with Harris (1977) that there is a strong relationship between patriarchy and militarism. However, she contends that patriarchy is a world system dominated by white male elites and that patriarchy invented war to control the non-elites, men and women. "The system produced war, rather than war produced the system" (Reardon, 1985, p. 11). But she never expands on this hypothesis to make it as convincing as Harris's contention that patriarchy was a result of war. Also, as pointed out by Blumberg (1984), "not all warfare societies are male-supremacist," such as the colonial era Iroquois tribe (p. 38). This was a matrilineal society where women controlled the economic resources. The men, who were known as fierce warriors, directed war and other political activities. Harris's (1977) contention is that although the Iroquois women were influential, men still were considered the superior gender. He also notes that matrilineal societies predominantly engage in external war and patrilineal societies engage in internal war.

Distinctions between internal and external warfare are critical to understanding the effects of warfare on women. Internal war occurs between
"culturally similar peoples who are geographically close and intermittently fighting over local resources" (O'Kelly and Carney, 1986, p. 48). Internal war can have devastating effects on the infrastructure of a country. As it destroys human lives, it also destroys economic resources that are vital to women's economic status. Civil war can create poverty stricken refugees that flee war torn areas. Most of these refugees are women. (Berhane-Selassic, 1988).

External war is fought in a distant geographical location. This type of warfare sometimes creates a different pattern that can actually improve women's status (Chafetz, 1986, p. 42). In societies where men are absent for long periods of time in far-off lands and women are left in charge of economic resources, women's status can improve. In ancient agrarian city states involved in chronic external warfare, women's status was higher than in those city-states engaged in internal wars. However, women's status declined when external warfare diminished and the men returned home (O'Kelley and Carney, 1986).

The industrialized nations of the United States and Great Britain witnessed a similar pattern when after World War II, "Rosie the Riveter" was pressured out of factory jobs to go back into the home and perform unpaid labor (Blumberg, 1984; Chafetz, 1986; Enloe, 1983a; Ward, 1984).

Lack of control over the means of production in addition to other factors result in women's status being lower in agrarian societies than in other types of society (Blumberg, 1984; Chafetz, 1984). O'Kelly and Carney (1986) indicate that another factor that led to such low status in historical agrarian societies was the militaristic nature of the societies. Ancient agrarian communities were primarily formed through conquest, thus warfare was prevalent. The control over weapons was a primary distinguishing characteristic of the elite as compared to the masses and warfare pervaded their "lifestyle, self-concepts, and
culture" (O'Kelly and Carney, 1986, p. 89). Men maintained control over the tools of war, just as they did in earlier horticultural societies, and the belief in male supremacy continued. Analyses of these and other warfaring societies led Chafetz (1984) to hypothesize that "the more a society engages in warfare, the greater its ideological/religious support for sex inequality will tend to be" (p. 41).

The military ideology of agrarian civilization carries over into modern industrialized nations (Divale, 1974, cited in Divale & Harris, 1976; O'Kelly and Carney, 1986). The military institutions of the 18th century, in fact, shaped the industrial revolution in a variety of ways. In an attempt to manage large standing armies, the military was the forerunner of rationalized production. Industrialists borrowed generously from the model of military management to operate their own burgeoning businesses (B. Hacker, 1988). Also, "the rise of standing armies contributed to the divorce between gainful labour and family life which is a feature of the modern economic order" (Nef, 1950 cited in B. Hacker, 1988, p. 21). This division of labor is cited as narrowing women's sphere of influence (Cancian, 1987 cited in Giele, 1988).

In the 19th century, militarism was connected with colonialism, imperialism and expansionism. The 20th century ushered in one of the most bellicose periods in human history with the first and second world wars and subsequent regional wars. In the last half of this century, a period considered by many as relatively peaceful, there have been over one hundred major wars, all but one fought in the less developed nations, commonly called the Third World (Dumas, 1986).
Contemporary Militarism

Contemporary militarism is different than historical militarism. The current manifestations of militarism are classified as "outward oriented" and "inward oriented" (Thee, 1980, p. 21). Nations practicing outward-oriented militarism focus on broadening their economic sphere of influence rather than expanding territorial boundaries. This practice has been called neo-colonialism. Much of this militarism goes undetected because the internal influence of the military is not readily apparent to the civilian population. The military does not openly control the government, there are no military parades of soldiers and tanks, and the country may not be engaged in actual warfare. But, at the same time, the nation's elected officials are spending huge sums of public money on the production of weapons and the maintenance of standing armies (Oberg, 1980). Outward-oriented militarism is characteristic of developed countries (Thee, 1980).

Inward-oriented militarism, on the other hand, is characteristic of military regimes in the Third World. The military is in direct control of the political institutions and socioeconomic policies. These military controlled governments turn to the more developed countries for economic aid and arms supply. Thus the developed nations expand their sphere of influence as the less developed countries become economically and militarily dependent on them.

Just as external war and internal wars can affect women differently, outward-oriented militarism and inward-oriented militarism may also create different patterns. Most developed countries that practice outward-oriented militarism have a large weapon-producing industry. As indicated above, research shows that this industry is predominantly male. In addition, most armies are composed of men. Of all NATO and Warsaw Pact countries, the
United States has the largest proportion of women in the armed services at 9.5 percent, followed by Canada at 8.9 percent (Enloe, 1988). So, military spending creates jobs, education, training, and veteran benefits that flow primarily to men.

Inward-oriented militarism is usually conducted in countries with no indigenous arms industry. Thus no jobs are created in the private sector by military spending. In the past few years, Third World countries have received 75 percent of the world's total arms imports which has burdened some of these nations with massive foreign debt (Sivard, 1977).

Thee (1980) contends that the critical variable in both outward-oriented and inward-oriented militarism is the importance placed on the armed forces and armaments. Percentages of public expenditures allotted to military programs is one significant indicator of the degree of militarization of a society (Enloe, 1983; Leitenberg & Bell, 1980; Reardon, 1985; Skjelsbaek, 1980; Sivard, 1987). The allocation of public funds represents the priorities of a nation. Defense programs must compete with social programs for allocation of limited resources in the budgetary processes. Therefore, if the defense budget is large, there are usually cuts in social programs due to lack of sufficient funds. These slashes in public programs appear to disproportionately affect the women and children of the world (Ames & Bolus, 1989; Brock-Utne, 1985; Enloe, 1983b; Midgeley, 1988; Reardon, 1985; Sivard, 1987). According to one analysis of 141 countries, there is a positive correlation between infant mortality rates and military spending (Science News, 1985). This could be an indication that women are not receiving adequate health care or education for effective pre-natal and after-birth care for their babies.
Large military budgets may adversely affect women's employment and employment opportunities. Anderson (1982a) calculates the number of civilian jobs lost in the United States economy due to the defense budget. This is computed for six sectors (Durable Goods, Non-durable Goods, Residential, Construction, Services, State and Local Government) of each state's economy. She shows how many jobs would have been created if the same number of dollars had gone into industries other than the defense industry and the armed services. Then she subtracted the number of jobs created by military spending, sector by sector, state by state. This yielded the net number of jobs foregone in each of the categories. The number of military personnel was then subtracted resulting in the total number of jobs lost in each state due to military spending. Her results indicate that when military expenditures are high, the hardest hit sectors of the economy are those in which women workers are concentrated, i.e. services, durable goods, and state and local government. As pointed out earlier, Anderson estimated that in 1980, the military budget of $135 billion cost women 1,280,000 jobs. This trend existed in 49 out of the 50 states, with Virginia as the only state that showed an estimated increase in jobs for women.

Addis (1988) takes a different approach in her study conducted in Italy. Italy has an all male army with a compulsory draft system. She shows how military dollars flow unequally to benefit men in Italian society. By looking at women's and men's labor force participation rates and unemployment rates, she points out how a similar civilian service program for women would reduce women's unemployment rate from 17.10 percent to 13.72 percent. She also points out that men's participation in the armed services gives them benefits, such as education, job training and networking capabilities, that are not available to women.
Societal support for contemporary military activities is derived from the same ideology that historically supported warfare in band and village and agrarian communities. Just as women were not allowed on the battlefield in preliterate societies, they are still, for the most part, banned from combat. Even in the United States where women make up a larger proportion of the armed services than in any other nation, the idea of women in combat is unthinkable to many citizens, as evidenced by the current furor over women soldier's activities in the U.S. invasion of Panama. Men maintain their control over war, weaponry and all military activities. Reardon (1985) hypothesizes that "the more militaristic a society tends to be, the more sexist are its institutions and values" (p. 14). Reardon claims that war and sexism are twin symptoms of social violence and are symbiotically linked. But contemporary militarism has subtle effects on women that are not easily detected. This study focuses on these subtleties and brings to light the influence of military spending on women's economic power.

Structural Determinants of Women's Economic Status

The following empirical works reviewed are predominantly based on three major theories of gender stratification that emphasize the structural determinants of gender differences. Rae Lesser Blumberg (1984) contends that the most important variable affecting gender inequality is women's relative economic power and that the most important component of economic power is control of the means of production and allocation of surplus production. However, she warns that women will not gain economic power by merely participating in the workplace. What is more critical than participation is the "strategic indispensability" of their work (p. 56). This is a function of several
things including the relative size of women's contribution to total output, how
difficult it is to replace individual female workers, the extent to which women
control technical expertise, the extent to which women work apart from male
supervision, and the degree to which women can collectively organize
themselves.

Janet Chafetz (1984) presents a similar theory that stresses the
importance of the nature of the work organization in determining gender
inequality. She cites technological level and type as the most important
independent variable affecting gender stratification because the technology
level determines the structure of production and the nature of the work
organization. She names six variables which constitute the nature of work
organization: the extent to which women participate in activities that are
highly valued by society; the extent to which women can be easily replaced in
their work, either by men or by other women; the extent to which men and
women are employed in gender-segregated jobs; the extent to which women
control the means of production; the extent to which women control the
products of production; and the length of time or attention span involved in
work activities.

Elizabeth Almquist (1983) also presents a model of gender stratification
that stresses the structural determinants of women's status. She points out that
economic status is a pivotal variable because it is both a dependent and an
independent variable. It is an independent variable that explains the
differences in women's rights and privileges as compared to those conferred on
men. Women's economic status is also a dependent variable that can be
explained by other structural features of a society. Almquist contends that the
type of work that women perform determines their economic status. She
presents a hierarchical list of five separate work activities that garner different economic rewards from society. These activities in ascending order of their economic importance are: maintenance activities that do not result in a tangible product; use value production activities that result in a product that can be used or consumed by the worker's family; production activities that result in the worker receiving goods, services or money in return; supervision of production activities outside the home; and societal control activities.

Another important component of gender stratification theory is the relationship between societal complexity and gender inequality. Blumberg (1984) proposes that there is a curvilinear relationship between gender inequality and the social complexity of a society. Gender inequality is highest in societies at intermediate levels of development, such as agrarian-based economies, and lowest in societies at the two outer ends of the spectrum, simple hunting and gathering and complex modern industrialized nations.

This curvilinear relationship helps to explain the contradictory findings regarding the impact of modernization and development on women's status. Development appears to help women gain more control of their lives through better education, birth control and political participation. However, modernization also appears to adversely impact women by removing them from productive labor and forcing them into low-paying jobs (Giele, 1989). Some researchers claim that current development schemes for Third World countries are detrimental to women (Boserup, 1972; Boulding, 1977). Kathryn Ward (1984) demonstrates that foreign investment and trade dependency on developed countries works to reduce women's status relative to men's in the developing countries. Economic opportunities introduced by foreign firms are given to indigenous men while women are confined to subsistence agriculture, the
informal sector of petty trade and domestic service, or the low-paying global assembly line.

These theories of gender stratification point to several predictor variables which have a significant impact on women's economic status. The first four variables affect the supply of women workers in the labor force. These supply variables include women's labor force participation rate, birth rate, marriage rate and divorce rate. The remaining variables to be discussed are sex ratio, energy consumption and the percent of the total workforce that is in manufacturing.

Women's labor force participation rate is considered a supply variable because it tells how many women of the total population of women are employed outside the home. It also indicates how many women are not working outside the home, which constitutes a pool of reserve labor from which employers can recruit workers. This affects the strategic indispensability and replaceability of women to which Blumberg (1984) and Chafetz (1984) refer to in their theories of gender stratification. If there is a large pool of reserve labor, then women workers can be easily replaced by other women in the reserve labor pool. This makes them easily dispensable and diminishes their bargaining power.

Birth rates, marriage rates and divorce rates are also supply variables because they determine how readily women enter and leave the labor market. These variables have push and pull effects on women's lives. Marriage may pull women from the workplace, while divorce may push women back into employment outside the home. Birth rates and marriage rates suggest the amount of domestic labor in which women are engaged. The heavier the
domestic labor load, the more difficult it is for women to compete effectively with men in the labor market.

The following discussion highlights the effects of these variables.

Women's labor force participation rate is an interesting variable that has mixed results in previous research. As stated above, Blumberg (1984) hypothesizes that "women's participation in production seems to be generally a necessary but clearly an insufficient precondition to their achieving a relatively high level of economic power (p. 55)". What is of more importance is the strategic indispensability of their work. Chafetz (1984) also stresses that in order to gain economic status, women must participate in those activities that are highly valued by society and not easily replaced by men or other women. Almquist (1983) also focuses on a hierarchy of activities, some of which are rewarded better than others by society. Therefore, theoretically a high labor force participation rate by itself is not expected to increase women's economic status. A high labor force participation rate combined with high birth and marriage rates may be especially deleterious to women's economic status. High birth and marriage rates indicate conditions that may make it very difficult for women to obtain higher level jobs in better paying industries.

In one cross-national study of 59 nations, women's labor force participation is negatively correlated with the variable, women's aggregate occupational position, which measures women's economic status (Almquist & Darville, 1983). A subsequent study examines women's labor force participation rate in 176 Standard Metropolitan Statistical Areas (SMSA's) of the United States, the 50 states of the United States, and 60 different nations (Almquist, Darville & Dunn, 1985a). The authors hypothesize that:
"sustained labor force participation will eventually lead to an improvement in women's occupational status, because over time, women will begin to prepare more for higher positions and/or they will organize to fight for more control and better positions in the labor force, as well as for a lighter domestic load. These processes take time, however, including perhaps two generations of women who experience high rates of employment. In the short run, then, we predict that women's labor force participation rates will be negatively related to their aggregate occupational position, because women usually enter the labor force without significantly reducing their domestic work" (p. 8).

The study supports this hypothesis as women's labor force participation rate was negatively correlated with all but one measure of women's occupational status. Similar results were reported in another research project that focused on 168 SMSA's in the United States (Almquist et al. 1985b).

However, a more recent study (Jones & Rosenfeld, 1989) of SMSA's in the United States shows women's labor force participation having positive effects on measures of women's economic status, such as women's share of total employment, women's share of salaried managerial occupations, and women's share of male dominated professions which are typically higher in pay, prestige and power than the occupations usually held by women. The authors acknowledge previous research that indicates negative effects of women's labor force participation and state that the difference in their results is due to the fact that the ever increasing women's labor force participation rates in the United States have increased overall job opportunities and women now have greater access to higher status jobs. This supports what Almquist et al. (1985a)
had previously predicted. However, when Jones and Rosenfeld (1989) introduced other independent variables into their research equations, women's labor force participation lost its significance and had little effect on women's occupational status.

Birth rate is an indicator of how much women are confined to domestic duties and cannot access economic resources to the extent that men can. In this respect, it affects the female supply of labor. Research in the United States has consistently shown a negative relationship between women's labor force participation and the number of children of married women (Chafetz, 1984). This can be interpreted as the fewer the children, the more likely women are to be employed. However, recent research also indicates that women who work outside the home choose to have fewer children (Cramer, 1980; Stolzenberger & Waite, 1977 cited in Chafetz, 1984). This leads Chafetz to hypothesize that the more women are involved in work that is valued by society, the lower the average fertility rate will be. Blumberg (1984) postulates a similar theory: "The greater women's relative economic control, the more control they will have to ensure that their fertility pattern serves their own interest" (p. 68). These hypotheses suggest that improvements in women's economic status have feedback effects that lead to improvements in women's control over other aspects of their lives.

Marriage rate also affects the supply of women workers. Single women are more likely to be employed than married women (Bose, 1984; Mason & Laslett, 1983; Smith & Ward, 1984 cited in Jones & Rosenfeld, 1989). Marriage rate has been used as an indicator of women's confinement to household duties (Almquist & Darville, 1983) and an indicator of the supply of women workers (Jones & Rosenfeld, 1989). Almquist found marriage rate negatively correlated
with some measures of women's occupational status, such as women's share of managerial positions, but not with other measures of women's occupational status. Jones & Rosenfeld (1989) found the percentage of women married decreased women's share of total employment, women's share of managerial positions, and women's share of male dominated professions.

Divorce rate affects women's supply of labor because it creates the necessity for women to enter the work force to support themselves and their families. Almquist et al. (1985a) argue that a high divorce rate indicates that there are less traditional restrictions on women. However one interprets divorce rate, the effects of it shows up as a weak predictor of women's economic status because of mixed results in cross-national research. In two studies divorce rate is found to be positively correlated with women's share of managerial occupations, but it has no effect on women's share of professions (Almquist et al. 1985a, b). But in a more recent study, there is no significant correlation between divorce and women's share of professions or women's share of managerial jobs (Almquist, Nickum & Oakes, 1988).

The sex ratio compares how many men there are in a society to how many women. A high sex ratio of over 100 indicates an oversupply of men and a shortage of women. A low sex ratio indicates that there are more women than men. The effects of a skewed sex ratio were initially examined by Guttentag and Secord (1983). They first focused on male-female dyadic relationships and then expanded their research to macrostructures of societies. They found that if there is a shortage of women, they tend to be prized as wives and mothers and have considerable dyadic power with the opposite gender. However, because men have structural power, a high sex ratio can result in a culture of traditional sex roles that confines women to the home and limits their freedom. Ironically,
as women are put on a pedestal, they have less control over their lives. On the other hand, if there is a shortage of men, or a low sex ratio, these traditional sex roles begin to break down and women can gain freedom in certain areas of their lives.

Both Blumberg (1984) and Chafetz (1984) built the concept of the sex ratio into their theories. Blumberg hypothesizes that women can be drawn in large numbers into activities that are normally performed by men if there is a shortage of men, and vice versa. Chafetz postulates almost the same thing and contends that when one gender is in oversupply, the more likely they will engage in activities traditionally monopolized by the other gender. This sex ratio pattern fits in with the previous discussion on marriage rates and women’s labor force participation. The fewer the men, the more single women. The more single women, the higher women’s labor force participation. The higher women’s labor force participation eventually leads to higher economic status.

Also, if a shortage of men exists, then jobs traditionally held by men are more available to women. However, a shortage of women, or a high sex ratio, equates to a lower economic status because women are confined to traditional sex roles and because there are plenty of men to fill the available jobs.

Almquist and Darville’s (1983) cross-national research shows a significant negative correlation between the sex ratio and women’s occupational status. A subsequent study of the 50 states in the United States and 60 nations indicates that the sex ratio has negative effects on women’s economic status (Almquist et al. 1985a). However, in the United States, the effects were weaker. So it is with considerable interest that one looks at a more recent study of SMSA’s in the United States over time, 1950-1980 (Jones & Rosenfeld, 1989). The authors include sex ratio as a measure of the male supply of labor. They find
significant negative correlations between sex ratio and women's share of employment, women's share of managerial positions, and women's share of male professions. However, they also find that the effect of this variable declined over the years.

Energy consumption per capita is a variable used to measure industrialization or economic development of a country (Almquist & Darville, 1983; Ward, 1984). The more energy consumed, the more developed the country. Chafetz (1984) proposes that technology level and type is the most important independent variable affecting women's economic status because it determines the nature of the work organization. Blumberg (1984) points out the curvilinear relationship between societal complexities and gender inequality. Results in prior studies show a positive relationship with the percent of women workers who are professionals and the percent of women workers who are managers (Almquist & Darville, 1983; Almquist et al. 1985a). However, another cross-national study found that higher levels of economic development reduced women's labor force participation and women's share of the total labor force (Ward, 1984). Apparently, a higher level of economic development means more women are in higher status jobs. But it also means that more men are in higher status jobs as well. The result may be no net gain in women's status relative to men's.

Previous research conducted has shown that the larger the share of the labor force employed in the manufacturing sector, the lower women's occupational status (Almquist & Darville, 1983). Women enter the labor market in jobs that are closely associated with their traditional role of caretakers, such as teachers, nurses, and day care attendants. These jobs are mainly concentrated in the service sector (England, 1983, cited in Jones & Rosenfeld, 1989). In
addition, in the United States the manufacturing sector has fewer white collar jobs that are typically filled by women workers than the service sector (Blau, 1977, cited in Jones and Rosenfeld, 1989). Since the manufacturing sector is predominantly made up of men workers, the emerging pattern is that the larger the percent of the labor force in this industry, the smaller the women's labor force participation rates (Parcel & Mueller, 1983 cited in Jones & Rosenfeld, 1989). Cross-national studies found women's share of professional occupations and women's share of managerial occupations negatively correlated with the percent of the work force in manufacturing (Almquist & Darville, 1983; Almquist et al. 1985a). These results are repeated in a study of the United States (Almquist et al. 1985b). A more recent study of the United States found that the percent of the work force in manufacturing had a slightly negative effect on women's overall employment share in 1950, but the effects became positive over time. The authors contend that the change in effect is due to manufacturing moving from heavy industry to high tech which hires a larger proportion of women workers. However, the percent of the total work force in manufacturing has negative effects on women's share of managers. This effect is increasingly negative over time (Jones & Rosenfeld, 1989).

Summary of the Chapter

This chapter began with a review of theories on how the warfare complex came into existence and how this affected women's status. It discussed historical militarism and contemporary militarism and drew critical links between military ideology and women's status relative to men's. In doing so, it presented the theoretical framework for the first part of the study, which is to test the effects of militarization on women's economic status. In addition, the
literature reviewed revealed that many researchers argue that militarization of societies adversely affects women, but no one has looked at this issue across diverse cultures and nations. This study analyzes the effects of militarization on women's economic status in 60 different nations.

Then there was a brief description of major gender stratification theories followed by a review of several empirical studies which tested these theories. These studies identified several important independent variables which had significant effects on women's economic status relative to men's. These predictor variables were women's labor force participation rate, birth rate, marriage rate, divorce rate, sex ratio, energy consumption per capita, and the percent of the total work force in manufacturing. This gave the additional framework for the remainder of this study which is to determine how much more variance in women's economic status is explained by adding the effect of militarization.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter presents the research design and methodology used in this study. It includes a statement of the central research hypothesis and describes the sample, research variables, and the statistical techniques employed.

Research Hypothesis

The central research hypothesis is that militarization has negative effects on women's economic status. In other words, as militarization of societies increases, women's economic status is lowered. As stated in chapter one, militarization is conceptually defined as the "process of emphasizing military values, policies, and preparedness" (Reardon, 1985, p. 14). Women's economic status is conceptually defined as how well women are doing economically relative to men.

Description of the Sample

Cross-national samples pose certain problems because it is difficult to obtain reliable and uniform data from many countries. Military expenditure information is readily available on 142 countries, but data on women's status is much more sketchy. This sample is composed of 60 countries which were selected because reasonably reliable information is available for each of them.
Therefore, there are few missing cases. This sample gives a good cross-national view of different societies at different levels of development. It includes developed nations with energy consumption per capita as high as 16,170 kilowatts and Third World countries with as little as 11 kilowatts. The average energy consumption per capita is 2,903.43 kilowatts. There is a slight bias in the sample toward developed countries because of the unavailability of information about women's status from several developing nations. In actuality, there are approximately 29 developed countries and 113 developing countries in the world (Sivard, 1987), which equals 20 percent developed and 80 percent developing. This sample contains 18 developed nations and 42 developing, which is 30 percent developed, 70 percent developing. However, this slight bias is taken into account during the interpretation of the research findings. The data gathered are from the 1980's, which is more recent than data analyzed by previous cross-national studies mentioned in the last chapter (Alquist & Darville, 1983; and Almquist et al. 1985a). The list of specific countries in this research project is in the appendix.

Independent Variables

(1) Militarization is operationally defined by military expenditures as a percent of central government expenditures (ME/CGE). It has been argued that this is a good measurement of militarization because it focuses clearly and precisely on government priorities (Leitenberg & Ball, 1980; Dumas, in conversation). The data were gathered from World Military Expenditures and Arms Transfers 1987, Table 1, p. 48-84, which is published by the United States Arms Control and Disarmament Agency.
In addition to looking at the effects of militarization, this study also looks at independent variables discussed earlier that are significant predictors of women's economic status. These variables are:

(2) Women's labor force participation rate (WLFP) is measured by calculating the percentage of total women in the population who are economically active. The data were collected from the 1983, 1984, 1985, 1986 Yearbook of Labour Statistics, 42-46th issues, published by the International Labour Office in Geneva.

(3) Crude birth rate is the annual number of births per 1,000 population. The data were gathered from Demographic Yearbook 1984, Table 4, pages 156-160, published by the United Nations.

(4) Marriage rate is the annual number of marriages per 1,000 population. The source for this data is Demographic Yearbook 1984, Table 4, pages 156-160, published by the United Nations.

(5) Divorce rate is the number of divorces per 1,000 population. The data source is Demographic Yearbook 1984, Table 4, pages 156-160, published by the United Nations.

(6) Sex ratio is the number of men per 100 women. It is calculated by multiplying the total male population by one hundred and then dividing by the total female population. The source for this information is Demographic Yearbook 1984, Table 3, published by the United Nations.

(7) Energy consumption per capita in kilowatts for each nation was taken from World Handbook of Political and Social Indicators, Taylor & Jodice (1983), published by Yale University Press.

(8) Percent of the total work force in manufacturing was calculated by adding the total number of men in manufacturing to the total number of women

Dependent Variables

The dependent variable is women's economic status relative to men's economic status. In other words, the dependent variable compares women's access to economic power to men's access to economic power. Because economic power gives people access to other social positions of power, prestige and freedom, it is the most important factor affecting women's status (Blumberg, 1984; Sanday, 1981; Ward, 1984). The dependent variable is operationalized by using measurements of (1) women's share of the labor force (2) women's share of professional and managerial occupations and (3) women's share of industry sectors. These dependent variables are somewhat different from one another, so the effects of the independent variables on each dependent variable were expected to be different. The following is a list of these dependent variables, a rationale for their use as measurements of women's economic status, and the source from which the data were collected.

(1) Women's share of the labor force (WSLF). If equality existed in the economic sphere, then women should have a share of the labor force which equals that of men's share (Jones & Rosenfeld, 1989; Ward, 1984). This variable is computed by dividing the total number of adult women in the labor force by the total number of adults in the labor force. The source for the data is 1983, 1984, 1985 and 1986 Yearbook of Labour Statistics, published by the International Labour Office, Geneva.
(2) Occupation indicators. Women have historically been segregated into occupations that are of lower pay, prestige and power than those jobs held by men. As women gain access to higher positions in the hierarchy of the business world, their economic status improves. Women's share of professions (WSPRO) and women's share of managerial positions (WSMGR) are, therefore, good measures of women's status relative to men's. It is important to measure professional occupations and managerial occupations separately because each of these tap into a slightly different aspect of women's occupational status.

Women's share of managerial positions is probably a clearer measure of women's share of the higher status positions. Women's share of professions include not only the higher status male-dominated professions, but also the lower status female-dominated professions, such as nursing and teaching. As countries industrialize, women gain entrance into lower level professions before they gain access to managerial positions. Both occupational categories are heterogeneous in terms of the pay and prestige that they offer. However, the professional category is probably more heterogeneous than the managerial category. Therefore, the representation of women in management is possibly a harder test of women's occupational status. In previous studies using these variables, conditions that affect women's share of professional occupations are different than those that affect women's share of managerial positions (Almquist, 1987; Almquist & Darville, 1983; Almquist et al. 1985a, b; Almquist, Nickum & Oakes, 1988; Jones & Rosenfeld, 1989). Women's share of professions was calculated by multiplying number of women in the professional category by 100 and dividing by the total number of men and women in the professions. Women's share of managerial positions was calculated by the same formula. The
source for this data is the 1983, 1984, 1985, and 1986 Yearbook of Labour
Statistics, published by the International Labour Office.

(3) Industry indicators. The occupational variables are especially
effective for measurement of women’s status in developed countries where
women have made greater progress up the corporate ladder into professional and
managerial positions. However, there are so few women in professional or
managerial positions in the developing countries that measurements of
professional and managerial occupations might not capture women’s status in the
Third World as efficiently as variables that show women’s share of industry
sectors. Women of the world have typically been segregated into sectors of the
economy that are of lower pay and prestige. Women in the developed countries
have been segregated into the service sector, while women in developing
countries live in rural areas and are mainly in agriculture (Sivard, 1985). The
manufacturing sector pays better wages and is considered higher status than the
agricultural and the service sectors. So an increase in women’s share of the
manufacturing sector should indicate an increase in women’s economic status.
An increase in women’s share of agriculture could very well mean a decrease in
women’s economic status. This sector has the lowest pay and prestige when
compared to the other industries. Modernization of agriculture has generally
meant a decline in women’s status (Sivard, 1985). The service sector is fairly
heterogeneous across nations. It includes a diversity of occupations, such as
highly paid hotel managers and lower paid domestic servants (Ward, 1984).
Because of this, it is a more difficult sector to interpret. But it is important to
look at the effect of predictor variables on all three sectors to effectively
interpret the results. A positive change in women’s share of service along with
a negative change in women’s share of agriculture could indicate improved
economic status for women. Conversely, a negative change in women's share of service and a positive change in women's share of agriculture could indicate a decline in women's economic status. Therefore, the industry variables used will be women's share of agriculture (WSAGR), women's share of manufacturing (WSMFG), and women's share of service (WMSER). These measures were also used by Ward (1984) in her cross-national study of 126 countries. These variables were calculated by multiplying the number of women in the industry sector by 100 and then dividing by the total number of men and women in the particular sector. The source for the data is the 1983, 1984, 1985, 1986 *Yearbook of Labour Statistics*, published by the International Labour Office, Geneva.

The six different measures of the dependent variable, women's economic status relative to men's economic status, tap women's location at different points in the economic structure. Therefore, the results for the six measures were not expected to be consistent.

**Statistical Techniques**

The data were analyzed using both zero-order correlation and multiple regression techniques. The zero-order correlation technique was used to look at the simple one to one relationship among the dependent variables, among the independent variables, and among the dependent variables and the independent variables. These results are shown in subsequent tables and discussed in detail in the following chapter. One important reason to look at the zero-order correlations was to determine if there was collinearity in the independent variable set.
Because the purpose of the study was to examine the relationship between a dependent variable and a set of independent variables, the main statistical technique employed was multiple regression analysis. This technique allows one to determine the relative strength of each predictor variable in the equation, in addition to determining the amount of variance in the dependent variable explained by the independent variable set. This study was designed to determine how much more variance in women's economic status was explained when militarization was added to the other predictor variables already tested in prior research. The data are appropriate for multiple regression because all variables are measured at the ratio level.

Two separate equations were used in this research project. Equation 1 included each of the dependent variables regressed on all independent variables listed above. Because of some very high zero-order correlations and standardized regression coefficients among women's labor force participation rate and several measures of women's economic status, women's labor force participation is dropped in Equation 2, with some interesting changes in results.
CHAPTER 4

DATA RESULTS AND ANALYSIS

Introduction

This chapter begins with a general description of the data. Because this research project's main focus is on the effects of militarization on women's economic status, those results will be discussed first, followed by a discussion of the effects of the other predictor variables on women's economic status. All tables are presented at the end of this chapter.

Description of the Data

Table 1 presents the zero-order correlations among all dependent variables and shows the mean and standard deviation for each variable. As one can see from examining the data, women's average share of the world's labor force (WSLF) is 31.04 percent, which means men have 68.96 percent of the total occupations. Women are more strongly concentrated in the service sector (WSSEC), where the average women's share is 36.23 percent; next is manufacturing (WSMFG) with the women's average share at 28.66 percent; and then agriculture (WSAGR) with the average women's share of the sector at 22.38 percent. When comparing these averages to previous research, it appears that women have a slightly smaller share of service and agriculture and a larger share of the manufacturing sector than in 1975 (Ward, 1984). Women's share of agriculture may be understated due to the slight bias toward developed nations.
in the sample which was discussed in the last chapter. Ward (1984) also suggests the same bias in her sample. It is also interesting to note that women have a much greater share of the professions (WSPRO), 40.74 percent, than managerial positions (WSMGR), 15.44 percent. As stated earlier, women’s share of professions includes not only the higher status male-dominated professions, but also the lower status professions dominated by women. This variable has the highest zero-order correlation (.57) with women’s share of service, which suggests that many of these professional jobs are the traditional "caretaker" occupations. However, women’s share of manager’s also has the highest zero-order correlation with women’s share of service (.59). So in the sector where there are more women, women are making inroads in obtaining the higher status jobs. Both women’s share of professions and women’s share of managers are unrelated to women’s share of agriculture. This suggests that women employed in agriculture have the lower status jobs and have made little progress in obtaining higher status jobs.

Effects of Militarization on Women’s Economic Status

A critical step in the analysis was to check for collinearity in the independent variables. A slightly larger group of independent variables measuring militarization was considered, including military expenditure as a percent of Gross National Product (GNP) and the number of armed services personnel per 1,000 population. However, the three measurements of militarization were highly intercorrelated above .60. Therefore, military expenditures as a percent of GNP and armed services per 1000 were dropped from the independent variables. The decision to retain military expenditure as a percent of central government expenditures (ME/CGE) was based on the
argument that this measurement focuses more precisely on government priorities than the other two measurements. Fluctuations in military spending can be hidden by a large Gross National Product (Leitenberg & Ball, 1980; Dumas, in conversation). In addition, a country may spend a very large proportion of their national budget on military activities, such as the procurement of weapons, but not necessarily have a disproportionately large armed service. Therefore, military expenditures as a percent of central government expenditures is the best measurement of militarization.

Table 2 presents the zero-order correlations among all the independent variables, as well as the means and standard deviations. Most of the independent variables have low correlations with one another, except for women's labor force participation (WLFP) and birth rate (BIRTH), which have a rather strong correlation (-.55). Each variable measures different structural features of society that affect women's economic lives. Women's labor force participation is negatively correlated with military expenditures, which indicates that military spending may depress women's labor force participation or women's labor force participation may decrease military spending. The other independent variables will be discussed in a subsequent section of this chapter.

Table 3 shows the zero-order correlations among all independent and dependent variables. Militarization (ME/CGE) is negatively correlated with every measure of women's occupational status. Statistically significant relationships occur between ME/CGE and women's share of service (WSSER), women's share of the labor force (WSLF), and women's share of managers (WSMGR). So as military spending goes up, women's share of the total work force goes down, as does their share of the managerial positions. In addition, as military spending increases, women's share of every industry sector goes down,
especially in the service sector, which employs the most women. Therefore, women do not have access to the economic resources that are more readily available to men. These results support the hypothesis that military spending has adverse affects on women.

However, when other predictor variables were introduced into the analysis and multiple regression techniques employed, the results changed. Multiple regression analysis indicates how much of the total variation in the dependent variable can be explained by all the independent variables acting together. Standardized regression coefficients, or Betas, indicate how much change in the dependent variable is produced by a standardized change in one of the independent variables, controlling for the other independent variables in the model. Therefore, an independent variable, such as militarization, may or may not be important when taking the other predictor variables into account.

This study focused on two separate equations. In the first equation each dependent variable was regressed on the independent variable set composed of military expenditures as a percent of the national budget (ME/CGE), women’s labor force participation rate (WLFP), marriage rate (MAR), divorce rate (DIV), crude birth rate (BIRTH), sex ratio (SEX), energy consumption per capita (ENERGY), and percent of the total work force in manufacturing (%WFMFG).

In the second equation, women’s labor force participation was dropped from the independent variable set because of significant correlations among it and birth rate (-.55) and sex ratio (-.33). Women’s labor force participation rate depresses the effects of these two predictor variables. In addition, women’s labor force participation was such a strong predictor of some dependent variables, such as women’s share of the labor force (Beta=.78), women’s share of agriculture (Beta=.90), and women’s share of manufacturing (Beta=.74), that it
explained almost all the variance in these dependent variables. To check for multicollinearity in the independent variable set, each independent variable was treated as a dependent variable and regressed on the other independent variables. The results pointed out that women's labor force participation rate had a very high multiple $R$ (.84), as did birth rate (.86), sex ratio (.76), and energy consumption (.77). When women's labor force participation rate was dropped from the independent variables the multiple $R$ of birth rate (.68) and sex ratio (.68) dropped considerably. These results further suggest that women's labor force participation rate is too highly intercorrelated with other predictor variables. Dropping women's labor force participation rate from Equation 2 allowed more analysis on the effects of the other predictor variables.

Table 4 shows the standardized regression coefficients (Betas), $R$ squares, and adjusted $R$ squares for Equation 1. ME/CGE is significantly correlated with one measure of women's economic status, women's share of agriculture. In this cross-national sample, two thirds of the 60 nations are less developed, or Third World countries, which have agriculturally based economies. Of the 41 Third World countries, 18 of these have spent a greater proportion of government monies on military activities than the world's average military spending. Nineteen of the governments are controlled by the military and 13 of these have been involved in wars in the past ten years (Sivard, 1987). The positive relationship between ME/CGE and women's share of agriculture indicates that because so many of these countries are involved in warfare, the men are engaged in fighting or other military activities, while the women are left to produce food for the country. A case study of Nicaragua notes that as men were mobilized into the military, women moved into production of food. Nicaraguan women now form 40 percent of the rural work force, which is
double what is was in the early 1980's (Harris, 1988). Further research needs to be conducted to determine what kinds of effects these wars are having on the women. If the women are left in charge of critical economic resources while the men are off fighting, it can actually improve women's economic status, as it did in the United States during World War II. However, in many cases, the women are left at home as the sole provider with devastating consequences. If war has destroyed the infrastructure of a country, there is little economic opportunity for women. One of the direct results of civil war is the creation of refugees, most of whom are women. These women live in poverty in refugee camps and seek employment as domestic help in the host country (Berhand-Selassie, 1988). It is beyond the scope of this research to determine all the consequences of war. However, it is safe to say that war destroys human lives and economic resources that are vital to women's improved status. But because the effects of war on women may be contradictory, it is important to conduct further research into the conditions created by war in the specific countries.

The relationship between military expenditures and women's share of agriculture would have been more interpretable if a significant negative correlation existed between ME/CGE and women's share of service and women's share of manufacturing. Both of these sectors contain jobs that are considered higher status than occupations in the agriculture industry. A negative relationship between ME/CGE and women's share of service and manufacturing could have been interpreted to mean that military spending creates jobs for women in the agriculture sector, but diminishes jobs in the more prestigious sectors. The results in the first equation indicate that the correlations between ME/CGE and women's share of service (Beta= -.14) and women's share of manufacturing (Beta= -.05) are negative but so weak as to be nonexistent.
Table 5 presents the results of the second equation from which the variable women’s labor force participation rate was excluded. The militarization variable is even more strongly correlated with women’s share of agriculture. Because there is a slight bias in this sample toward developed countries, the effect of military spending on the Third World is probably de-emphasized.

In addition, to know more precisely how this positive relationship between the militarization variable and women’s share of agriculture affects women’s economic status, further information is needed on what kinds of jobs women are occupying in the agriculture industry. A case study of India indicates that jobs in the agriculture sector are divided into two broad categories, cultivators and laborers. Women are segregated disproportionately in the lower status occupation of laborer, while men are over represented in the higher status job of cultivator (Dunn & Strauss, work in progress). Another reason to look at specific occupations within the agriculture sector is that modernization of agriculture has intensified inequality between men and women.

In general, commercialization of agriculture has had the effect of increasing women’s workload, while reducing their opportunities for independent cash income. As the production of crops for sale increased land under cultivation, women’s work in the fields also increased. Men, however, controlled the marketing of cash crops. Women continued to have responsibility for child care, producing food, gathering fuel, getting water, functions that were economically invisible and yielded little or no cash. Their customary sources of small earnings from the production of
small handcrafts or the sale of produce and fish in the market
diminished in competition with commercial operations (Sivard, 1985, p.
17).

Some researchers would argue that high military spending adversely
affects the development of a country (United Nations, 1982; Dumas, 1986). This
study found no correlation between ME/CGE and the measure of development,
energy consumption per capita. However, military spending might affect
development of nations in ways that are difficult to capture in this statistical
analysis. High military expenditures have reportedly reduced the dollars
available for foreign aid from developed countries to less developed countries.
In addition, Third World countries borrow money from developed countries to
finance the purchase of armaments which contributes to their debt crisis and
reduces investment spending (Sivard, 1987). When inordinate amounts of a
country's budget go to military expenditures, there is little left to build the
of Third World countries adversely affects women's economic status. It would
be interesting to know how much of the debt dependency is due to military
expenditures.

Furthermore, in more directly financial terms, it is interesting to note
that over only six years (1977-1982) combined military expenditures by
the LDC's [less developed countries] were cumulatively greater than the
total Third World debt outstanding in 1982. If the LDC share of world
military spending had been the same in those years as it was in the early
1960's, they would have saved enough money from this one source to
finance repayment of nearly two-thirds of their outstanding debt (Dumas, 1986, p. 244).

Additionally, when the military devours large chunks of the national budget, few dollars remain for social programs that improve the overall status of women. Average military spending as a percent of the national budget is 14.10 percent. As pointed out earlier, 30 percent of the countries sampled have spent more than the international average and 83 percent of these are Third World countries. The others include the United States whose military spending is at 26.4 percent of its national budget, Israel at 26.1, and Bulgaria at 18.5.

Effects of Other Predictors on Women’s Economic Status

The zero-order correlations among the independent variables, displayed on Table 2, are low, except for birth rate (BIRTH) and women’s labor force participation rate (WLFP), which have a fairly high negative correlation. Once again, this can be interpreted as the more children that women have, the less likely they are to participate in the labor force or that women who are employed choose to have fewer children. Although the correlation is below .60, women’s labor force participation is perhaps too highly correlated with birth rate to leave in the multiple regression equation. Including women’s labor force participation rate depresses the effect of birth rate on the dependent variables in the multiple regression. Women’s labor force participation rate also has a significant negative correlation with sex ratio (SEX). Including women’s labor force participation rate in the equation also depresses the effect of the sex ratio.

The zero-order correlations shown on Table 3 indicate that women’s labor force participation rate has a significant positive correlation with every measure of women’s economic status, birth rate has a negative relationship with every
measure except one, and sex ratio has a significant negative correlation with each dependent variable.

These results stay relatively constant with multiple regression analysis in Equation 1, results of which are displayed on Table 4. Women's labor force participation rate is very highly correlated with women's share of agriculture (Beta=.90), women's share of the labor force (Beta=.78), and women's share of manufacturing (Beta=.73). It has no significant relationship with either women's share of professions or women's share of managers, which indicates that a higher labor force participation rate does not increase women's share of higher status occupations. The difference in these results and previous research (Almquist & Darville, 1983; Almquist et al. 1985a) may be due to the fact that the data in the current study is from a later time period. What is especially interesting is that there is no relationship between women's labor force participation and women's share of service, the sector in which so many women are employed.

Birth rate in Equation 1 shows significant effects only on one measure of women's occupational status, women's share of professions (WSPRO). However, in Equation 2, when women's labor force participation is dropped from the equation, birth rate is significantly correlated with all but one measure of women's occupational status, which is women's share of managerial positions (WSMGR). Birth rate has considerably more effect on women's share of the labor force (WSLF) in Equation 2 (Beta= -.77) than in Equation 1 (Beta= -.15). Birth rate has negative effects on women's share of professions in Equation 1 and Equation 2. It could be that once women acquire some economic independence, they choose to have fewer children. As discussed before, women's share of managers is probably a better measure of women's climb up the
business ladder because female dominated professions, such as nursing and teaching, are included in women's share of the professions. If these lower status professions could be subtracted from the variable and only the higher level professions such as doctors, lawyers, and scientists remained, then this measurement might act more like women's share of managers. These differences in results will be apparent throughout this analysis.

The other two female supply variables, marriage rate and divorce rate, showed no significant effect on any measure of women's occupational status, in the zero-order correlations or in either of the multiple regression equations. Once again these results are different from previous cross-national research (Almquist et al. 1985a) in which marriage and divorce rates had significant effects on women's share of professions and women's share of managers. The difference may be in this study's more recent data. Marriage and divorce do not appear to play the same role as they once did. This interpretation coincides with one study of variations in the United States that found that although high marriage rates decreased women's share of employment, this effect was decreasing over time (Jones & Rosenfeld, 1989). Apparently, birth rate is a much more important variable affecting the supply of female labor than marriage rate or divorce rate.

In Equation 1, sex ratio is an important predictor of women's share of the labor force, women's share of managers, and women's share of service. In Equation 2 (Table 5), with women's labor force participation omitted, sex ratio has even stronger and more significant effects. It shows a much stronger negative effect on women's share of the labor force, women's share of managers, and women's share of service. In addition, it has a significant negative relationship with women's share of manufacturing. These results indicate that
in a society with an oversupply of men, women's share of the total job market, as well as their share of manufacturing and service, is diminished. This suggests that when there is an oversupply of men, they are picked first for the jobs and women are encouraged to stay out of the paid labor force. These results are consistent with Guttentag and Secord's (1983) view on the effects of the sex ratio.

Energy consumption per capita measures the level of development or industrialization of a country. The more energy consumed, the more industrialized the country. In Equation 1, Table 4, energy consumption (ENERGY) is negatively correlated with women's share of professions and women's share of manufacturing. However, in Equation 2, energy consumption loses its significant effect on women's share of manufacturing. Also, in Equation 2, energy consumption has a stronger negative effect on women's share of professions and a significant positive effect on women's share of managers. This makes a clear interpretation difficult. It does show evidence that the more developed a country, the higher status jobs, such as managerial positions, are more available to women. The less developed countries have few professional jobs available and those that are available go to men. Perhaps the curvilinear relationship between economic development and women's status also explains the difference in the effects on these two variables.

The effects of the percent of the total work force in manufacturing (%WFMFG) are opposite those of energy consumption. It has a moderate negative correlation with women's share of managers and a positive correlation with women's share of agriculture and women's share of manufacturing. In Equation 2, it has a stronger negative effect on women's share of managers, but
it no longer has a significant effect on women's share of agriculture or women's share of manufacturing.

The positive relationship between percent of the total work force in manufacturing and women's share of agriculture and women's share of manufacturing in Equation 1 may indicate that in less developed countries, men are leaving the agriculture jobs to go into the manufacturing industry and women are left to fill the agricultural positions. In developed countries, there has been a trend in manufacturing to move from heavy industry to high-tech which hires a larger number of women, so the negative effect of the manufacturing industry reported in previous research has decreased (Jones & Rosenfeld, 1989). However the negative correlation with women's share of managers in both Equation 1 and Equation 2 indicates that women have not been in the manufacturing industry long enough to gain the higher status jobs. In order for women to garner a larger share of the managerial jobs, their share of the industry must increase. However, it is critical that in the future scholars analyze what kinds of jobs that women are occupying in the manufacturing sector. If they are trapped in menial assembly-line production jobs and secretarial jobs, women's economic status may not change much with their penetration into the manufacturing sector.

Explained Variance in Dependent Variables

This section will discuss the proportion of the variance explained in each dependent variable, comparing Equation 1 and Equation 2. These results are shown on Tables 4 and 5, designated by the adjusted R squares.

Eighty-eight percent of the variance in women's share of the labor force is explained in Equation 1. However, all the variance is explained by one
variable, women's labor force participation. These two variables are so highly correlated that it appears that they may be measuring the same thing. Equation 2 explains 67 percent of the variance in women's share of the labor force. Birth rate and the sex ratio have the strongest effects on the dependent variable. A high birth rate and a high sex ratio clearly diminish women's share of the labor force.

Equation 1 explains 14 percent of the variance in women's share of professions. Birth rate and energy consumption per capita are the most important predictor variables and both have a negative correlation with women's share of professions. Equation 2 explains 16 percent of the variance and the same two independent variables have significant negative effects on the dependent variable. Dropping women's labor force participation rate from the equation does not significantly affect women's share of professions.

In Equation 1, 20 percent of the variance in women's share of managers is explained by this model. The most important variables are percent of the total work force in manufacturing and the sex ratio, which are both negative correlated with women's share of managers. Equation 2 explains 21 percent with the most critical predictor variables being sex ratio, percent of the total work force in manufacturing, and energy consumption. Sex ratio and the percent of the work force are still negatively correlated while energy consumption is positively correlated with women's share of managers. Dropping women's labor force participation rate did not have much affect on this dependent variable.

Fifty percent of the variance in women's share of agriculture is explained by Equation 1. However, women's labor participation explains almost all the variance in the dependent variable. The other two important variables
are percent of the total work force in manufacturing and military expenditures
as a percentage of central government expenditures. Both of these predictor
variables are positively correlated with women's share of agriculture. Without
women's labor force participation rate, the explained variance drops to 25
percent. Interestingly enough, percent of the work force in manufacturing is no
longer significant. The positive correlation between women's share of
agriculture and military expenditures gains in strength. This is the only
dependent variable that shows any significant relationship with military
expenditures. In equation 2, birth rate and sex ratio are also significant
predictor variables and both are negatively correlated with women's share of
agriculture.

Equation 1 explains 45 percent of the variance in women's share of
manufacturing, but women's labor force participation rate is once again the
predominant predictor variable. Energy consumption and the percent of the
total work force in manufacturing are next in importance. Energy consumption
is negatively correlated with the dependent variable and the percent of the total
work force is positively correlated. When women's labor force participation rate
is excluded, the explained variance drops to 28 percent and these two variables
are no longer significant. Birth rate and sex ratio come to the forefront again.
Both variables are negatively correlated with women's share of manufacturing.

The dependent variable, women's share of service, does not follow the
same pattern as the other two industry indicators of women's economic status.
Equation 1 explains 53 percent of the variance, with sex ratio being the most
important variable. Sex ratio is negatively correlated with the dependent
variable. Equation 2 explains slightly more of the variance, 55 percent. Sex
ratio gains in strength and significance and maintains its negative effect. Birth
rate becomes significant and is negatively correlated with women's share of service.

In conclusion, it appears that although women's labor force participation increases the proportion of explained variance in three of the dependent variables, results are more consistent and interpretable in the equations which exclude this variable. When the results of the two equations are compared, interesting patterns emerge. In the three equations that showed little change from Equation 1 to Equation 2, women's labor force participation rate is not a significant predictor of the independent variable. In the cases where there were changes from Equation 1 to Equation 2, the effects of the relevant independent variables, birth rate and sex ratio were depressed by women's labor force participation rate in the first equation. Both birth rate and sex ratio have significant zero-order correlations with women's labor force participation rate. However, the correlations were lower than .60, so it did not indicate a problem of multicollinearity. All three of these independent variables affect the supply of women's labor. Evidently, the effects of these supply variables are overlapping. Therefore, when women's labor force participation rate is removed, the effects of birth rate and sex ratio become stronger.

Highlights of Findings

Multiple regression analysis indicates that militarization, as measured by military spending as a percent of the national budget, increases women's share of agriculture, but has no effect on women's share of the other industry sectors or on women's share of the higher status occupations. An increased share in the agriculture sector is not especially good for women's economic status because modernization of agriculture has intensified inequality between men and women
and women may be disproportionately segregated into the lower-status occupations of the agriculture sector. The agriculture sector is considered a lower status sector than either the manufacturing or service sector because both of these sectors traditionally pay better wages than agriculture.

In addition, because so many of the Third World countries with agriculturally based economies have been actively engaged in warfare in the last ten years, this positive relationship between military spending and women's share of agriculture suggests that men are involved in fighting and other military activities and women are left to produce food for the country. This can have contradictory effects on women's economic status.

Women's labor force participation rate, birth rate, and sex ratio are the strongest predictors of women's economic status. These variables affect the supply of women's labor. They have overlapping effects such that women's labor force participation rate depresses the effects of birth rate and sex ratio.

Energy consumption per capita and the percent of the work force in manufacturing are significant predictors of the variables measuring women's share of the higher status occupations, which are the professional and managerial positions. Interestingly, energy consumption and percent of the work force in manufacturing have opposite effects. Energy consumption has negative effects on women's share of professions and positive effects on women's share of managers. The percent of the total work force in manufacturing has negative effects on women's share of managers.

More variance is explained in the dependent variables that are measuring broader categories of women's participation in the workplace, such as women's share of the labor force and women's share of each industry sector. A smaller proportion of the variance is explained in the dependent variables measuring
women's share of the higher status occupations. Women's share of professions and women's share of managers are probably more precise in their measurement of women's climb of the economic ladder of success than the broader industry measures.
### Table 1.

**Zero-Order Correlations Among Dependent Variables.**

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* $p \leq .05$  
** $p \leq .01$  
*** $p \leq .001$
Table 2.

**Zero-Order Correlation Among Independent Variables.**

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**MEAN** | 14.10 | 25.13 | 22.65 | 6.50  | 1.99 | 102.05| 2903.43| 17.29 |

**S.D.** | 12.19 | 13.20 | 12.30 | 2.41  | 4.18 | 16.80 | 3567.07| 17.11 |

* P ≤ .05  ** P ≤ .01  *** P ≤ .001
Table 3.

Zero-Order Correlations Among Independent Variables & Dependent Variables.

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* p ≤ .05  ** p ≤ .01  *** p ≤ .001
Table 4.

**Standardized Regression Coefficients in Equation 1 Which Includes All Independent Variables.**

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* $p \leq .05$  ** $p \leq .01$  *** $p \leq .001$
Table 5.

**Standardized Regression Coefficients in Equation 2 Which Excludes Women’s Labor Force Participation Rate.**

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<td>.41*</td>
<td>-.11</td>
<td>-.25</td>
<td>.23</td>
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<td>-.47**</td>
<td>.12</td>
<td>.13</td>
<td>-.14</td>
</tr>
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<td>.33</td>
<td>.37</td>
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<td>.62</td>
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<tr>
<td><strong>ADJ ( R^2 )</strong></td>
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<td>.21</td>
<td>.25</td>
<td>.28</td>
<td>.55</td>
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</table>

\* \( p \leq .05 \) \hspace{1cm} \** \( p \leq .01 \) \hspace{1cm} \*** \( p \leq .001 \)
CHAPTER 5

CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH

The primary focus of this research project was to determine the effect of militarization on women's economic status. The hypothesis was that militarization, as measured by military expenditures as a percent of central government expenditures, adversely affects women's economic status relative to men's. Some of the results of this analysis do support this hypothesis, but not as strongly as suspected. The zero-order correlations indicate that military spending decreases women's job opportunities. However, when other independent variables are introduced through multiple regression, militarization loses much of its effect. This variable does not explain much more variance in the dependent variables than other predictor variables discussed in this study. The main finding was that militarization, as defined by military spending, increases women's share of agriculture. In this sample of 60 nations, 18 countries have spent more of their government monies on military activities than the international average and many have been involved in warfare in the last ten years. Most of these countries are Third World countries with agriculturally based economies. This suggests that men are engaged in war or other military activities and women are left to produce the food for the country. This could have contradictory effects on women's economic status. If
women somehow gain more control over economic resources, their economic power could be strengthened. However, modernization of agriculture has increased the inequalities between men and women in many countries. Further research needs to be conducted to ascertain which occupations women are occupying in the agriculture sector and to determine if these occupations are of equal, higher, or lower status than those jobs that men occupy.

In addition, it would be beneficial to better determine the effects of contemporary warfare on women's status. It is critical to look at each nation on a case by case basis to see if the country is engaged in internal or external war and how much this has affected the infrastructure of the country. It would be most interesting to design research that tested Chafetz's (1984) hypothesis that the more a society is involved in warfare, the greater its ideological support for sex inequality and Reardon's (1985) hypothesis that the more militaristic a society is, the more sexist its institutions and values.

Also, military expenditures are a large proportion of these government budgets. Of the countries that have spent more than the world's average, 83 percent are Third World countries whose military expenditures range from 15 percent to 54.8 percent of their national budget. Further research should be conducted to see how this has affected the development or deterioration of the infrastructure of the countries who are spending such large amounts on military activities. Also, additional studies should be conducted to understand the relationship between military spending in the Third World countries, their massive foreign debts, and the effects of the debt on women's economic opportunities.

Although this study had few dramatic results regarding militarization, it has helped to not only point out further areas of research, but also point out
that a different research design may be more appropriate. It is possible that
cross-national studies cannot pick up the subtle effects of military spending. A
more productive design would be one that analyzes the developed countries and
less developed nations separately. It would be most advantageous to delineate
which nations have indigenous arms production industries from those that are
wholly dependent on other countries for their armaments. In countries with no
arms production capabilities, money is pouring out of the country to procure
armaments while no jobs are being created in the private sectors. In countries
with an indigenous arms industry, some jobs are created through the production
of the weapons. These situations have different effects on a nation's economy,
so they probably would have different effects on the women workers and their
economic opportunities.

What is more important than militarization in predicting women's
economic status is birth rate and sex ratio. After women's labor force
participation rate is removed from the multiple regression equation, birth rate is
the strongest predictor of women's economic status. Birth rate diminishes
women's share of the labor force, women's share of professions, and women's
share of every industry. These results certainly support the hypothesis that
bearing and caring for children add to the domestic burdens of women to the
point that their economic opportunities are limited. Or, perhaps, women's
participation in the workplace diminishes the birth rate, which supports Chafetz
(1984) and Blumberg (1984) who both propose that as women gain economic
power, they will control their fertility patterns to fit their needs.

The next strongest predictor of women's economic status is sex ratio. An
oversupply of men diminishes women's share of the labor force, women's share
of managerial positions, and women's share of manufacturing and service. Men
are still the preferred employee. It appears that only when there are not enough
men to fill the jobs, do women get an opportunity at the higher status
occupations.

Energy consumption appears to play a significant role only in women's
share of professions and women's share of managers. It has positive effects on
women's share of managers and negative effects on women's share of
professions. This implies that the more developed a country, the higher status
jobs, such as managerial positions, are more available to women. The less
developed countries have few professional jobs available and those that are
available go to men. The percent of the work force in manufacturing is losing
its negative effects on women's economic status due to women's increased share
of the sector, but it still has a negative effect on women's share of managers.
Apparently, women have not been employed in this sector long enough to gain
many of the higher status jobs. However, if they continue to garner a larger
share of this sector, they may eventually gain access to the managerial jobs.

Marriage rate and divorce rate have no effects on women's economic status. It
probably would be advisable to drop these variables from the equation for a
more parsimonious model.

In summary, this study has explored an important issue, the effects of
militarization on women's status. Although it may have raised more questions
than provided clear cut answers, it furnishes a point from which to embark on
further exploration of the subject. The study was original in its attempt to
study the issue across nations and cultures. The second part of the study has
helped to clarify results of other predictor variables of women's economic status.
Some variables that had significant effects ten years ago do not have the same
effects today. This is valuable information to have in order to continue building our knowledge base on gender stratification.
APPENDIX
### COUNTRIES IN STUDY

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CASE #

62  BULGARIA
63  DENMARK
64  SPAIN
65  FINLAND
66  GERMANY (FRG)
68  IRELAND
70  LUXEMBOURG
71  NORWAY
72  PORTUGAL
74  SWEDEN
75  TURKEY
76  UNITED KINGDOM
77  YUGOSLAVIA
79  NEW ZEALAND
83  MOROCCO
84  MEXICO
REFERENCES


