Economic Structure And Crime: The Case of Japan

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ABSTRACT: Despite a high rate of industrialization, crime rates in Japan have declined overall since World War II. This is inconsistent with the "Durkheimian-Modernization" perspective which argues that rapid socioeconomic changes increase crime rates. Although a number of qualitative studies investigate possible reasons for Japan's low and declining crime rates, few employ quantitative analyses with aggregate data. This paper systematically examines the impact of poverty, economic inequality, and unemployment, on homicide, robbery, and larceny rates among the 47 prefectures in Japan. The multiple regression analysis reveals a significant positive relationship between unemployment rates and homicide and robbery, and between the degree of economic inequality and larceny. The poverty level is significantly and positively correlated only with homicide, but this relationship vanishes when controls for unemployment rate, the percent of young males, and the level of industrialization are introduced. The implications of these findings for Japanese economic policy are discussed.

One well-known theoretical approach in comparative criminology is the "Durkheimian-Modernization" perspective, which explains ". . . crime rates in terms of industrialization, urbanization, the division of the labor, social disorganization, anomie, modern values, and cultural heterogeneity" (Neuman & Berger, 1988: 282). That is, crime rates are expected to be relatively low in societies characterized by a homogeneous population and simple technological development because social norms are relatively strong, unambiguous, and binding. In societies characterized by heterogeneous populations, perhaps as a result of rapid socioeco-

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nomic change (i.e., industrialization and urbanization), individuals are less likely to accept group-oriented discipline over personal desires due to confusion over norms and values.

These theories, in general, assume that rapid industrialization and urbanization increase crime rates. However, the Durkheimian-Modernization perspective does not seem applicable to postwar Japan. In Japan, rates for felonious crimes (i.e., homicide, robbery, arson, and rape) have declined sharply since World War II, despite a high rate of industrialization and economic development.

A number of studies point to the "classical case of Japan" (Braithwaite, 1989: 49) and investigate possible reasons for Japan's low crime rates. However, most of these studies employ solely qualitative and theoretical analyses. Few studies examine socioeconomic factors associated with crime, or whether the causes of crime in Japan are the same as in Western countries. Quantitative studies with aggregate data are needed to establish general theories that will enable us to understand and predict criminological phenomenon in Japan.

CRIME IN JAPAN: THE PROBLEM

Crime rates in Japan peaked in the postwar period (1945-1959). Since then, these rates have declined continuously. Specifically, the homicide rate dropped from 2.84 per 100,000 population in 1960 to 1.00 in 1990 (*Japan Statistical Yearbook*[s] [Statistics Bureau, Management and Coordination Agency]). More surprisingly, during the same period, the rate for robbery fell from 5.57 per 100,000 population in 1960 to 1.34 in 1990. Although larceny increased slightly during the same period (1,112 per 100,000 population in 1960 to 1,168 in 1990), the total crime rate,[1] which for the most part consists of property crimes, declined slightly from 1,476 per 100,000 population in 1960 to 1,324 in 1990.

Thus, crime rates in Japan have declined overall during the last three decades, while most Western countries have experienced significant increases in crime during the same period. For example, the total crime rate for England and Wales increased by 5.5 times between 1960 and 1990, former West Germany 2.5 times (1963-1987), Canada 3.6 times (1962-1990), and the United States 5.2 times (1960-1990).[2] Braithwaite (1989) concludes that Japan and Switzerland may be the only developed countries in which crime rates have declined.

Accordingly, Japan's current crime rate is quite low, compared with those of Western countries. A comparison of homicide rates provides a useful method for the comparative analysis of crime because homicide is "among the most fully enumerated crimes and the least subject to reporting changes over time" (Gartner & Parker, 1990: 355). Based on Interpol's *International Crime Statistics* for the year 1988, the homicide rate for Japan was 1.47 per 100,000 population. The homicide rates for 16 major European countries[3] ranged from 12.26 (Netherlands) to 0.92 (Norway) per 100,000 population (3.98 per 100,000 on the average). The homi-

cide rate for the United States (7.91 per 100,000) was 5.4 times higher than that for Japan.

Several qualitative comparative studies (Bayley, 1991; Braithwaite, 1989; Westermann & Burfeind, 1991) suggest that the relatively low crime rate in Japan, in spite of rapid modernization, is attributable to Japan's community-like society, where social organizations (e.g., school, work place, community) highly value interdependency among group members. Westermann and Burfeind (1991: 149) describe Japanese society as follows:

> In Japan, the core values of group-relatedness, respect for tradition, harmony, and hierarchy have led to very strong forms of informal social control. The ethnically homogeneous Japanese stress conformity to group norms, and individuals prize the approval of the groups that monitor their behaviors and provide their identities. As a consequence, there is relatively little crime, and the structures of formal social control operate with effectiveness.

Such qualitative studies imply that the Japanese economy is grounded upon "healthy" communities where solidarity and interdependence are reinforced by reciprocal relationships between teachers and students, employers and employees, community leaders and citizens.

One of the few quantitative studies of crime in Japan to employ aggregate data is Evans' "Changing Labor Markets and Criminal Behavior in Japan" (1977). Evans believes that crime rates can be explained by the degree to which expected profits through criminal activities outweigh those through legitimate labor, and predicts that ". . . increased economic opportunities in the labor market associated with sustained economic growth should result in a diminished crime rate" (478). To Evans, the inverse relationship between the level of economic development and crime rates in postwar Japan seems to be very reasonable.

Using annual time-series data for Japan for the period between 1955 and 1970, Evans finds that the number of persons employed in modern industries[4] is significantly and negatively correlated with the total crime rate and the adult arrest rate. Income inequality, measured by the Gini coefficient for employee households, is significantly and negatively correlated with the total crime rate (unexpected sign) and positively correlated with the juvenile arrest rate. No significant relationships are reported between real wages (average level of wages in manufacturing divided by consumer price index) and total crime rates or adult arrest rates. These findings suggest that, in Japan, income level is not associated with crime.

After reviewing crime trends for England and Wales and for the United States during the period between the late 19th century and the beginning of the 20th century, Evans speculates that, in capitalist countries, crime rates are relatively low and stable during the periods of intense expansion and job creation. He concludes, then, that currently declining and low crime rates in Japan are explainable and not at all exceptional.

There are three limitations to Evans' study. First, his study includes only the total number of crimes. He does not differentiate by type of crime (i.e., violent vs. property) even though the characteristics and causes of crime may differ by offense type. Second, theoretical support for the findings that legitimate economic opportunity influences crime is not included or discussed. Third, although Evans includes a measure of income inequality in his analysis, he does not explain how, during periods of economic growth, unequally distributed economic opportunity affects the level of criminal activity. These critical questions remain unexplained. However, Evans' study does suggest that economic opportunity is important to understanding crime in Japan.

Given the above, the purpose of the present study is twofold: (1) to examine systematically the impact of economic structure, that is, poverty, economic inequality, and unemployment, on rates of homicide, robbery, and larceny in Japan; and (2) to apply Western criminological theories to an Eastern country to examine cross-cultural similarities and differences.

REVIEW OF THE LITERATURE AND HYPOTHESES

The idea of connecting economic structure to crime is derived from the notion of economic determinism, "which assumes that all people respond the same way to similar conditions" (Nettler, 1984: 140). In other words, behavior can be largely predicted by the social environment: "The abnormal element in crime is a social, not a biological, element. . . . , crime lies within the boundaries of normal psychology and physiology" (Bonger, 1916: 75-76). Economic elements are especially fundamental to all social structures. Economic structure has a considerable impact on human activities such as crime, especially in terms of income level or poverty, economic inequality, and economic opportunity.

Poverty

The attempt to connect poverty to crime focuses on the relationship between factors such as malnutrition, unsanitary dwellings or habitats and congested living, and involvement in illicit activities as a result of despair associated with the inability to cope effectively with these conditions. Poverty is defined here in an "absolute" sense and can be measured by a "poverty line" that reflects the minimum cost of living for maintaining satisfactory health.

Some early studies concluded that there is no relationship between poverty and crime. For example, Quetelet (1835) argued that crime is especially significant in areas with rapid social or economic change, rather than in areas where people are poor but are able to satisfy their basic needs. Shaw and McKay (1969) also concluded that poverty, in itself, does not seem to cause crime, because crime rates do not consistently change with the number of poor people.

Despite the above, there is some evidence that poverty may be important. The most simple notion of poverty is that people who are hungry steal in order to eat.

More subtly, but more importantly, "poverty (taken in the sense of absolute want) kills the social sentiments in man, destroys in fact all relations between men" (Bonger, 1916: 436). Philips (1991) argues that the pressure of poverty can create individual irresponsibility, correspondingly deviance, especially when they suffer stress from powerlessness or when they are unable to control their own lives. She concludes that economic independence for the poor is the single most crucial element in any plan to fight crime.

Essentially, the position is that, directly and indirectly, poverty increases the probability that individuals will engage in criminal activities. Accordingly, societies that have many poor people should have high crime rates. Consistent with this, recent American empirical studies, using Standard Metropolitan Statistical Areas (SMSAs) as the unit of analysis, have found that poverty is positively associated with property crimes such as burglary (Crutchfield et al., 1982; Jacobs, 1981). However, whereas the partial effect of poverty on homicide is significantly and negatively associated with the homicide rate in Messner's study (1982), it is positively associated with homicide rates in studies by Bailey (1984) and Williams (1984). Finally, Blau and Blau (1982) report that poverty, in itself, does not affect violent crime rates although poverty is positively related to criminal violence.

Economic Inequality

Economic inequality, as opposed to poverty, is represented by the number of rich as well as the number of poor people. The distinction between economic inequality or "relative" poverty, and "absolute" poverty is that the former refers to the *manner of distribution* of wealth while the latter counts the *total amount* of wealth based on the number of people whose incomes are below "poverty line." When economic inequality is stressed, the emphasis is on relative deprivation in a social context, rather than the living conditions of the least privileged people.

A society that encourages individuals to pursue self-interest without considering others' welfare is likely to shut out the disadvantaged. That is, persons of low socioeconomic status have limited access to formal education. Later, these people will be shut out of the dominant society because they will be unable to enter positions that require high levels of education and training. Consequently, society promotes the development of crime and delinquency by creating drop-outs from education, the labor market, and the community. Those who accept culturally mandated goals such as material success, but do not have access to socially approved means, such as a college education, to attain these goals, are more likely to resort to illegitimate means, such as stealing, to meet their goals (Merton, 1968).[5]

Aronson (1988) points to a study on riots by psychiatrist Jerome Frank, suggesting that the most serious riots by American blacks in the 1960s took place in those areas where blacks had limited rights and ample opportunities to become aware of their impoverished conditions relative to their white counterparts. He

argues that frustration, which can lead to aggression, arises primarily when goals for a better life become clear, when expectations are high, and when these hopes are blocked unjustifiably. According to Aronson, "[f]rustration is not simply the result of deprivation; it is the result of *relative deprivation*" (1988: 212-13). From this perspective, a society with the high level of economic inequality will have high crime rates.

Consistent with this reasoning, several studies (Bayley, 1991; Ladbrook, 1988; Tanioka & Glazer, 1991) stress that Japan's low crime rates are attributable to its relatively even distribution of income. Surprisingly, 90% of the Japanese consider themselves as belonging to the middle class (Ladbrook 1988). Bayley (1991) argues that "Japan lacks the kind of racial and cultural diversity that so frequently reinforces economic inequality to produce successive generations of the misery, hopelessness, rage, and family disintegration that are so strongly associated with crime" (171).[6]

As was the case with poverty, recent American studies, using SMSAs as the unit of analysis, have found that economic inequality is, in general, positively associated with property crimes such as burglary (Danziger, 1976; Jacobs, 1981). On the other hand, studies on economic inequality and violent crimes show inconsistent patterns. Blau and Blau (1982) report that economic inequality is positively associated with high rates of violent crime. They conclude that the essential cause of violent crime in the U.S. is economic inequality, especially when inequality is associated with ascribed status, such as race. However, Messner (1982), Bailey (1984), and Williams (1984) find no significant association between economic inequality and homicide rates.

In an analysis of Canadian cities, Hartnagel and Lee (1990), report that economic inequality is positively associated with violent crime and negatively with property crime. However, both associations become insignificant when controls for other factors, such as % of young males in the population and opportunities for crime, are introduced. They speculate that income inequality in Canada is less variable than in other countries due to extensive welfare and income redistribution programs.

Unemployment

Standard definitions of unemployment typically include those who have been laid off by employers, those who have been fired or have quit and are looking for other work, and those who are just entering or reentering the labor force but have not found jobs as yet (Ehrenberg & Smith, 1991: 23). In each instance, individuals are blocked not only from economic opportunities but also from social relationships. In other words, "[u]nemployment brings a loosening and disintegration of a number of previously crucial fixed points in the individual's social environment. . . . [A]s long as an individual is in a job he is, by virtue of his work alone, part of a structure of social relationships" (Kelvin & Jarret, 1985: 55-57).

The unemployed person is often stigmatized as "a social failure" or "a second-class citizen" (Kelvin & Jarret 1985: 53). As social information, these "stigma symbols" of unemployment ". . . are especially effective in drawing attention to a debasing identity discrepancy [between an individual's actual social identity and his virtual one], breaking up what would otherwise be a coherent overall picture, with a consequent reduction in our valuation of the individual" (Goffman, 1963: 44). These labels, then, reinforce the difference between the individual's concept of self as a responsible, working citizen and his/her actual (unemployed) condition. As a result of the stigma on unemployment, the individual often becomes self-conscious and suffers discouragement, anxiety, and frustration.

The gap between the employed and the unemployed seems to be substantial in Japan, where people tend to find a sense of unity between themselves and their work groups, seek their identities from their positions in a particular firm, and stress group solidarity in attaining shared goals and achievement (Nakane, 1970). Braithwaite (1989) states that "the employee is dependent on the job, she cannot walk away from the shaming which is especially important in cultures like Japan where relationships with the boss are rather permanent and have wide ramifications" (90). On the other hand, in Japan where the notion of diligence and perseverance is highly developed and the unemployment rate is very low (2.8% in 1986),[7] those who unfortunately slip through the cracks of the social network, often dropouts from higher education and the unemployed, are highly noticeable and may be easily stigmatized as "inferior."

The unemployed, needless to say, do not have to be afraid of losing a job or attachment to his/her coworkers and employers at work as a result of a criminal offense. Thus, the unemployed are more likely to be exposed to the lure of criminal subcultures because of their lack of involvement in conventional activities and close personal relationships with non-family members (Gottfredson & Hirschi, 1990). Many of those who engage in criminal activities attempt to reestablish their identities by developing relationships with others who have similar backgrounds.

In Japan, the unemployed, who are rejected from mainstream society, tend to seek surrogate relationships by joining deviant groups such as the *boryokudan* (the organized gangs that engage in various illegal activities from labor racketeering to drug dealing accompanied by violence) (Westermann & Burfeind 1991). Smith and Jarjoura (1988: 33), citing Angell (1974), suggest that "social relations are more likely to develop among persons who share similar traits and experiences." To use Goffman's words (1963), "[h]e will be told that he will have an easier time of it among 'his own,' and thus learn that the own he thought he possessed was the wrong one, and that this lesser own is really his" (33).

Once individuals become members of these deviant groups, they have not only developed the beliefs, knowledge, and skills that are indispensable to the criminal world, but also have, both officially and privately, established an inferior status (see Gove, 1975). According to the Japanese Ministry of Justice, in 1988, the

boryokudan was involved in 25.3 percent of all arrests for homicide and 22.8 percent of all arrests for bodily injuries (Westermann & Burfeind 1991).

The same American studies that focus on poverty and economic inequality have found that unemployment is also positively associated with property crimes, such as burglary (Crutchfield et al. 1982; Danziger 1976; Jacobs 1981). Similarly, studies of unemployment rates and violent crime rates show inconsistent patterns. For example, Danziger (1976) and Jacob (1981) report a positive relationship between unemployment rates and violent crime, while Spector (1975) concludes that there is no significant relationship between unemployment rates and violence. Crutchfield et al. (1982) find a negative relationship between unemployment rates and murder, but no significant relationships between unemployment rates and other violent crimes, such as assault, rape, and robbery.

In their Canadian study, Kennedy et al. (1991) report a negative relationship between unemployment rates and homicide. They explain that, in Canada, "[o]fficial unemployment, per se, may not immediately nor necessarily create economic hardship due to assistance from unemployment insurance and welfare supports" (401). Economic depression and government assistance could work together to lead to greater stability in a city's population and to decrease the homicide rate. In a similar Canadian study, Hartnagel and Lee (1990) report no association between unemployment and violent crime and property crime.

Other Variables

Industrialization, urbanization, and residential mobility have all been regarded as underlying causes of crime and are included in the current study. In addition, the relationships between age and gender and crime are examined.

Crime is committed disproportionately by young adults and by males. This is one of the well-known "facts" in criminology (e.g., Braithwaite, 1989; Gottfredson & Hirschi, 1990; Quinney, 1975; Wilson & Herrnstein, 1985). Wilson and Herrnstein (1985) conclude that "[a]ge, like gender, resists explanation because it is so robust a variable. None of the correlates of age, such as employment, peers, or family circumstances, explains crime as well as age itself" (145).

Adolescents and young adults are more likely than adults to explore the boundaries of socially accepted activities. For some adolescents and young adults, delinquency or criminal activities may be an attractive solution to a search for identity. This may be particularly relevant during periods when the U.S. economy, incapable of absorbing new entrants, forces youths into marginalized and economically powerless positions (Messerschmidt, 1986). Economic powerlessness, then, may be related to crime.

The dominance of male criminality is often viewed as a result of differential gender roles in society. From childhood, boys are encouraged to be active and aggressive while girls are encouraged to be passive. Males inevitably have more opportunities than women to "engage in the forms of activity—including making

a gainful living- which may result in behaviors that have high potentials of being defined as criminal" (Quinney 1975: 100). Thus, by reason of their dominant position in society, males are more prone to criminality than females.

Taken together, crime is committed disproportionately by young males. The proportion of young males—"persons most at risk of offending" (Gartner & Parker 1990: 352)—should affect crime rates.

Industrialization, urbanization, and residential mobility may also contribute to crime in American society. Shaw and McKay, in their classical study of human ecology (1969), concluded that high-delinquency areas in Chicago were associated with population change often prompted by industrialization and urbanization. Delinquency areas were constantly influenced by exogenous forces, such as industrial invasion and migration. Those forces disturbed the traditional norms and values of the community. Many of the residents in high delinquency areas were immigrants with diverse cultural backgrounds widely different from the previous cultures of these areas. Continuous invasions of "foreign" cultures, and sprawling, large urban settings, prevented the community from establishing shared norms and values.

Furthermore, industrialization, urbanization, and high residential mobility seem to promote crime directly. An individual's perception of opportunities may be associated with expectations about the risks and chances for success when he/she is considering criminal behaviors (Glazer 1978). Individuals decide to commit a criminal offense only when they perceive that the chances for success outweigh expectations of risks. High residential mobility and large urban settings create anonymity as well as autonomy, which is more likely to encourage individuals or groups to commit crimes (Crutchfield et al. 1982; Ladbrook 1988). Smith and Jarjoura (1988) conclude that "conditions of anonymity [in urban areas] may have a stronger influence on rational choice crimes such as burglary to the extent that offenders perceive a diminished likelihood of detection" (46). Industrialization, characterized by economic affluence, produces a greater number of suitable targets (i.e., properties) for lawbreaking (e.g., Krohn, 1976). In Sweden, for example, Stack (1982) reports that property crimes have increased in response to increases in the production of goods, despite Sweden's reputation as a welfare state. In sum, industrialization, urbanization, and high residential mobility may be expected to increase crime rates by impeding a sense of social connectedness and by creating "crime opportunities" in the urban areas.

Hypotheses

Given the discussion above, this study will test the following hypotheses:

H1: The larger the proportion of households in an area that are at or below the poverty line, the higher the crime rates.

H2: The higher the levels of economic inequality in an area, the higher the crime rates.

H3: The higher the unemployment rates in an area, the higher the crime rates.

H4: The larger the proportion of young males in an area, the higher the crime rates.

H5: The higher the levels of industrialization in an area, the higher the crime rates.

H6: The higher the levels of urbanization in an area, the higher the crime rates.

H7: The higher the levels of residential mobility in an area, the higher the crime rates.

METHOD

The Unit of Analysis

This research examines variations in crime rates among the 47 prefectures *(to-do-fu-ken)* that inclusively cover Japan. A prefecture is an administrative division under the national government in Japan, similar to a state in the United States. The geographical size of a prefecture is roughly equivalent to that of most counties in the United States, although population sizes are more like those of a state. Prefectures are administratively broken down into cities *(shi)*, towns *(machi)*, and village *(mura)*. Each prefecture has a governor and legislators elected for four years. Those officials maintain departments of general affairs, finance, health, labor and welfare (Perkins, 1991).

Prefectural units were chosen for four reasons. First, there are considerable differences among the prefectures in geography, climate, history, culture, and characteristics of the people. Second, it was decided that smaller units, that is, cities and counties, would be inappropriate, given the small geographic spaces and the daily population mobility beyond city and county limits made feasible by the rapid mass transportation system. Furthermore, crime rates in the smaller units are so low that it would be very difficult to draw meaningful inferences. Fourth, socioeconomic and crime data reported in the official statistics are more commonly classified by prefecture than by cities or counties within prefectures. Prefecture data are, then, more available and reliable.

Dependent Variables

Offense-specific crime rates were obtained from the 1986, 1987, and 1988 *Japan Statistical Yearbook(s),* which provides records of offenses known to the police. Three types of crimes are used in this analysis: homicide, robbery, and larceny. Crime rates are computed by dividing the three-year mean for each crime for 1984, 1985, and 1986, by the number of 100,000 population units. This operation is used to minimize distortions from fluctuating crime rates in the prefectures over the period.

Independent Variables

The *poverty rate,* or percent of low income households, was obtained from the 1987 *Employment Status Survey* (Statistics Bureau, Management and Coordina-

tion Agency). The poverty level is defined as household annual income below 1 million yen. This represents the lowest income block compared to the average annual household income was 5.6 million yen in 1985 (The 1987 *Japan Statistical Yearbook*). On a national level, the percentage of households whose annual incomes were below 1 million yen was 2.1%. This closely reflects the 1.3% of households that received public livelihood aid in 1985, according to the 1987 Japan Statistical Yearbook).

The degree of *economic inequality,* or inequality of household income distribution, was measured by the Gini coefficient.[8] The distribution of households by income, the basis for the Gini coefficient computation, is also based on the 1987 *Employment Status Survey.*

The *unemployment rate* is measured by percentage of totally unemployed persons among those in the population who are fifteen years old and over. Data for the unemployment rate are also taken from the 1987 Japan Statistical Yearbook.

Other demographic and socioeconomic variables included in this analysis are the % of young males, the income by prefecture per capita, Densely Inhabited Districts (DID), and a measure of residential mobility. With exception of the % of young males, all of these data were obtained from the 1987 *Japan Statistical Yearbook.*

The *percent of young males* (20-29 years old) is measured by the percentage of young males in a prefectural population, as reported in the 1985 *Population Census of Japan* (Statistics Bureau, Management and Coordination Agency). The age block 20-29 years old is commonly included in studies of crime in Japan to categorize young adults who are most at risk of criminal offending (e.g., Ladbrook, 1988; Matsumura & Takeuchi, 1990).

Income per capita, as an indicator of *industrialization,* is based on the data for 1984. Prefectural income per capita is a measure of economic accomplishment associated with the level of industrialization in a prefecture.

A Densely Inhabited District (DID) is defined as an area composed of a group of contiguous census-enumeration districts with high population density. In principle, this includes 4,000 inhabitants or more per square kilometer within the boundary of a *shi* (city), *ku* (ward), *machi* (town), or *mura* (village), and constituting an agglomeration of 5,000 inhabitants or more as of the date of the census-taking (The 1987 *Japan Statistical Yearbook*). The percentage of people residing in DID is included as a indicator of *urbanization* for prefectures.

Residential mobility rates are computed by dividing the sum of in-, out-, and intra-prefectural migrants in 1985 by the number of 1,000 population unit.

RESULTS

The zero-order correlations and descriptive statistics for the independent and dependent variables are reported in Table 1. As expected, economic conditions such as poverty, economic inequality, and unemployment are positively correlated

with crime rates. There is, however, variation by offense type. For example, poverty level is significantly correlated with homicide (.582), but not with robbery (.177) and larceny (.177). On the other hand, the correlations between the degree of economic inequality and homicide (.671), robbery (.421), and larceny (.430) are all significant. Among the economic indicators, unemployment rate shows the strongest correlations with crime rates (homicide [.687], robbery [.516], and larceny [.475]).

Of the other variables examined, industrialization, urbanization, residential mobility, and the % young males, all are positively and significantly correlated with rates of robbery and larceny. However, none of these variables are significantly correlated with homicide rates. Industrialization and the % young males are negatively correlated with homicide rates.

A stepwise multiple regression analysis was used to assess the relative contribution of the independent variables in explaining crime rates by offense type. Because several independent variables are highly intercorrelated, indicating possible multicollinearity, it is difficult to estimate the separate effects on the dependent variables. To avoid this problem, the independent variables are ordered according to the proportion of their contributions to the variance in the dependent variables. Then, only the independent variables which produce a "significant" increment in the coefficient of determination (R^2), are introduced one by one into a regression equation.[9] This procedure "reduces the independent variables in the model to a less highly correlated set" (Fox, 1991: 15) and produces best-fitting multiple regression models (see Table 2).

Three independent variables are included in the regression model for homicide (unemployment, % young males, and industrialization), two for robbery (% young males and unemployment), and two for larceny (urbanization and inequality). These three regression models in which independent variables are combined explain 61.4% of the variance in homicide, 64.8% in robbery, and 50.8% in larceny respectively. These R^2 values are roughly similar to those in comparable U.S. and Canadian studies (cf. Bailey 1984; Blau & Blau 1982; Crutchfield et al. 1982; Danziger 1976; Hartnagel & Lee 1990; Jacobs 1981; Kennedy et al. 1991; Messner 1982; Williams 1984).

For homicide, the unemployment rate enters first and explains a larger proportion (47.1%) of the variance in homicide than does any other single variable. The variable % young males enters second, and the level of industrialization third, contributing an additional 2.8% and 11.5% to the explanation, respectively. The partial regression coefficient for young males (−.672) is an unexpected change in the direction of the relationships between the % of young males and the homicide rate.

For robbery, the % of young males contributes most to the explanation of the variance in robbery (45.9% of the variance). Unemployment rate enters second, explaining an additional 18.9%.

Table 1. Zero-Order Correlation and Descriptive Statistics for Variables for 47 Japanese Prefectures (1985)

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	Mean	SD	Min.	Max.
X1 Homicide	1.000										1.41	0.56	0.74	3.41
X2 Robbery	.380**	1.000									1.29	1.13	0.46	4.27
X3 Larceny	.498***	.605***	1.000								991.40	293.80	575.40	1566.80
X4 Industrialiazion	-.157	.379**	.376**	1.000							1864.20	268.40	1477.00	3019.00
X5 Urbanization	.121	.607***	.620***	.664***	1.000						46.17	18.48	23.40	97.10
X6 Mobility	.230	.610***	.553***	.387**	.681***	1.000					70.82	14.91	46.78	118.73
X7 % Young Males	-.081	.677***	.484**	.745***	.803***	.652***	1.000				6.06	0.89	4.91	9.69
X8 Poverty	.582***	.177	.177	-.559***	-.203	.220	-.303*	1.000			2.50	1.40	0.90	6.90
X9 Inequality	.671***	.412**	.430**	-.263	.131	.452**	-.001	.866***	1.000		0.32	0.02	0.28	0.38
X10 Unemployment	.687***	.516***	.475**	-.301*	.244	.458**	.124	.749***	.858***	1.000	3.33	1.16	1.63	7.72

Significance levels (two-tailed test) * .05 level ** .01 level *** .001 level.

Homicide, Robbery and Larceny: offenses per 100,000 population.
Industrialization: prefectural income per capita (1,000 yen).
Urbanization: population residing in *Densely Inhabited Districts (DID)*, divided by total population, times 100.
Mobility: the sum of in-, out-, and intra-prefectural migrants, divided by total population, times 1,000.
% Young Males: number of males aged between 20–29, divided by total population, times 100.
Poverty: number of low income households, divided by number of households, times 100.
Inequality: the Gini coefficient of household income distribution.
Unemployment: number of totally unemployed, divided by population at the age of 15 and over, times 100.

Table 2. Results from Stepwise Multiple Regression Analysis
for 47 Japanese Prefectures (1985)

	Multiple R	R^2	R^2 change	β*	Z-score
Homicide					
Unemployment	.687	.471	.471	.960	8.08
% Young Males	.707	.499	.028	-.672	-3.95
Industrialization	.784	.614	.115	.632	3.58
Mobility	.784	.615	.001	—	—
Inequality	.785	.617	.002	—	—
Urbanization	.786	.617	.001	—	—
Poverty	.786	.618	.000	—	—
Robbery					
% Young Males	.677	.459	.459	.623	6.91
Unemployment	.805	.648	.189	.438	4.86
Industrialization	.810	.656	.008	—	—
Poverty	.813	.661	.005	—	—
Mobility	.814	.663	.002	—	—
Urbanization	.814	.633	.000	—	—
Inequality	.814	.633	.000	—	—
Larceny					
Urbanization	.620	.384	.384	.573	5.37
Inequality	.713	.508	.124	.355	3.33
Industrialization	.725	.526	.018	—	—
Unemployment	.741	.550	.024	—	—
% Young Males	.747	.557	.008	—	—
Poverty	.747	.557	.000	—	—
Mobility	.747	.558	.000	—	—

*Standardization Coefficient for Best-fitting Multiple Equation.

For larceny, urbanization explains the greatest amount of the variance (38.4%). Economic inequality, the second independent variable in the equation, explains additional 12.4% of the variance in larceny.

The order of entry of independent variables into the regression model should not be regarded as an index of their "importance" (Fox 1991). Independent variables having nearly identical correlations with other independent variables and the dependent variable could be underestimated. This is especially true when only one variable is entered in the regression equation.

In the present analyses, poverty is the primary variable which could be underestimated due to its placement in a stepwise multiple regression. We cannot completely deny the contribution of poverty to the rates for homicide, robbery, and larceny since it is highly correlated with economic inequality and unemployment. However, due to cultural influences that may deter the poor from criminal activities, poverty may not directly affect crime in Japan.

DISCUSSION AND CONCLUSION

The present study began by examining Japan's declining crime rate in the period of postwar modernization in terms of Durkheimian-Modernization perspective which posits that rapid socioeconomic changes increase crime rates. In contrast,

Evans (1977) argues that the declining crime rate in Japan is attributed to increased economic opportunities in the labor market associated with economic growth. Following this argument, this study examined the impact of economic structure on different types of crime in modern Japan.

Some of the findings are consistent with the hypothesized relationships between measures of economic structure and crime in Japan. There is, for example, a significant positive relationship between the unemployment rate and rates of homicide and robbery (Hypothesis 3) and the level of economic inequality and rates of larceny (Hypothesis 2).

The unemployment rate is the single most important explanatory variable for homicide. It also influences robbery rates, which, in Japan, are as low as homicide rates. Both findings are consistent with Evans' argument. Although we cannot say that the unemployed actually commit these offenses, employment opportunities appear to be a key determinant of serious violent crime in Japan.

One measure of poverty is significantly and positively correlated only with homicide (Hypothesis 1), but this relationship vanished when we controlled for unemployment rate, the % of young males, and the level of industrialization. One reason why the poverty level was not significantly associated with any specific type of crime in the multiple regression analysis may be due to multicollinearity between the poverty level and the degree of economic inequality, and between the poverty level and unemployment rate. Otherwise, it may be argued that poverty, in itself, does not directly affect crime while economic inequality and unemployment do. This implies that people commit crimes because of a social context which highly stratifies them and has the potential to define them as economically or socially inept.

Regardless of their socioeconomic status, people may feel emotionally satisfied as long as they can become a part of a particular group, whether this group is found in the family, the school or the workplace. This is no doubt more applicable to Japan, a culturally homogeneous society in which group-relatedness, harmony, and hierarchy are stressed, than it is in the United States, which is an ethnically heterogeneous society in which freedom, independence, and individualism are highly valued (Bayley 1991; Westermann & Burfeind 1991). Also, considering the fact that basic social services such as national health insurance, unemployment insurance, and a uniform public school system are inclusively provided in Japan. Poverty may be less important as a cause of crime in Japan than it is in the United States.

Among the other variables examined, industrialization and urbanization (Hypothesis 5 and 6) are significantly and positively related to both homicide and larceny. These findings are consistent with the Durkheimian-Modernization perspective. Although these findings do not confirm the Durkheimian-Modernization perspective applied to the Japanese case, it seems reasonable to say that Japan is

not totally immune in terms of the relationship between economic development and crime.

The % of young males is significantly and positively related to robbery but negatively related to homicide. The negative relationship between the % of young males and homicide is inconsistent with Hypothesis 4. One possible reason for this negative relationship, a finding just the opposite of that found in the United States, is that "a larger proportion of homicides are domestic or family killings" (Gartner & Parker 1990: 364). This suggests that, in Japan, married men with children, rather than unmarried men, are more likely to commit homicide. In fact, persons most at risk of being murdered in Japan are infants, young children, and women. In the United States, the victims are more likely to be young male adults (Gartner & Parker 1990).

Considering that the average age for men first married in Japan is 28.4 yrs. old (*Yomiuri Shimbun* 25 Jun. 1994: 3), men who have family and/or children, that is, persons who are most at risk of offending, are not covered by the "young adults" age block (20-29 yrs.) used in this analysis. This may produce the negative relationship between the % of the young males and homicide rate.

Finally, the level of residential mobility, used as a predictor in Hypothesis 7, explains little of the variance for homicide, robbery, and larceny. This again may be due to the multicollinearity between the level of residential mobility and the percent of young males and the level of urbanization.

The following general conclusions appear warranted: First, some Western criminological theories, particularly those which address the relationships between economic inequality and crime, between unemployment and crime, and between industrialization and urbanization and crime are well supported by the data in Japan. Second, poverty, in itself, does not seem to cause crime, despite its important role in Western criminological theories. Third, the positive relationship between the % of young males and crime, which is regarded as a well-known fact in Western criminology, is supported for robbery but not for homicide. Finally, the model used in this study fits the data as well as comparable models used in studies of Western societies.

IMPLICATIONS

Because of recession in the early 90's, Japanese business corporations, once well known as their paternalistic management exemplified by lifelong seniority system of employment, and a company-based union, are under heavy pressure to maximize profits or minimize costs at the expense of the economic security of employees and their families. This process, known as *gorika* in Japanese, is a form of industrial readjustment, or "rationalization".

Many manufacturing industries have closed down their domestic factories and moved factories overseas, which allow them to hire "cheap labor". Some companies have been adjusting their "excess" employment by dismissal, suspension of

hiring of new high school and college graduates, and implementing layoffs. Furthermore, the Japanese government apparently have given credence to these management strategies (*Yomiuri Shimbun* 28 July 1994: 11).

However, these rationalization techniques doubtless contribute to rising unemployment rates and widen economic inequality. Without shelters or intervention measures for the unemployed and the poor, such "rational" individualistic management practices may, in turn, aggravate crime. The results of this study, which show a significant positive relationship between the unemployment rate and serious violent crimes, and between economic inequality and property crime, suggest that rising unemployment rates may result in an increase in serious violent crimes. Similarly, economic inequality may promote an increase in property crimes.

Economic policy needs to be chosen carefully by considering not only the short-term effectiveness of economic rationalization for the corporate section, but also the potential impact of structural economic changes on people's lives. One of duties for social scientists may be to actively engage in the development of economic policies that minimize current, and help prevent future, social problems.

NOTES

1. These crimes represent Penal Code Offenses, excluding death or bodily injury through occupational negligence.
2. Computed from *Annual Abstract of Statistics* (Great Britain. Central Statistical Office), Heiland, H. (1991), *The Canada Year Book* (Census & Statistics Office), and *Crime in the United States* (U.S. Federal Bureau of Investigation).
3. Netherlands, Denmark, Sweden, Finland, Italy, France, Portugal, West Germany, Belgium, Austria, Switzerland, Spain, Greece, United Kingdom, Ireland, and Norway.
4. Mining, manufacturing, communication, public utilities, and construction.
5. Merton's theory of anomie, which deals with American society, may not appear to be directly applicable to Japanese society wherein material success is not valued as highly as in the United States. However, strain does exist in Japanese society, for instance, among school dropouts. That is, Japanese society, including education system, highly stresses ambition for success in life while not everybody has equal access to educational resources such as household savings for educational purposes (see Omura, 1989). Importantly, students in prestigious universities, which promise their successful employment, are from relatively wealthy families. In order to pass the entrance examinations of these schools, students must typically participate in extracurricular programs such as preparatory schools, private tutoring, and correspondence courses, all of which require significant financial resources.
6. Although ascriptive socioeconomic inequality is not significant in Japan and will not be taken into consideration in the current study, the relationship between ascriptive socioeconomic inequality and crime is a matter worthy of note for future study, particularly since subtle examples of this phenomenon, associated with particular ethnicities or residential areas, may occur in Japan. The discrimination against the Koreans or the *burakumin* (the traditional outcast group) are primary cases.
7. Japan's unemployment rate of 2.8 percent is significantly lower than Great Britain's 11.9 percent, France's 10.7 percent, Italy's 11.1 percent, Germany's 9.0 percent, and the United States' 7.0 percent in 1986 (Ehrenberg & Smith 1991).

8. Following Blau and Blau (1982), the midpoints were picked out for representing each income block, and the open-ended highest block (15 million yen and more) was increased by 50 percent, yielding 22.5 million yen. Also, the Gini coefficient was computed under the direction of Ehrenberg and Smith (1991).

9. The .15 probability level is used for the F ratio test of significance.

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