

Making Sense of Japanese Juvenile Crime Statistics: Beyond an Economic Approach and Policy Implications

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Introduction

In Japan, the new school system, a complete five-day week, has started since April 2002. One of the purposes of enforcing a five-day week to education is to make full use of available spare time. This policy will have both good aspects and bad aspects regarding other governmental policies. Some parents also worry about the changes. For example, an increase in leisure time will be one of the good aspects. On the other hand, some parents worry about the decline of scholastic ability, or disturbance of children's life-style represented by an increase in juvenile delinquency rates because family relationships gradually weaken and change because of an increase in number of dual-income households or a raising in divorce rates.

The environment surrounding children has gradually changed including both economic and social aspects for some decades in Japan. Complete enforcement of a five-day week to education is one example. How does this policy influence changes for children and society? Actually, by enforcing this policy, leisure time will increase for children because every Saturday and Sunday becomes a holiday. However, as some parents worry, it will not bring about only good aspects.

Recently in Japan, an increase in the number of juvenile brutal crimes becomes a serious social problem. In fact, juveniles commit more than a half of the number of whole crimes in the last ten years (Criminal White Paper in 2000). How has the imposition of a five-day week education system related to an increase in the number of juvenile delinquency in recent years? Of course, crime occurs not only due to one motivation but various motivations. Therefore, it is important to analyze the whole situation using various aspects. Moreover, it will be essential to make effective policy to combat crimes. Therefore, this

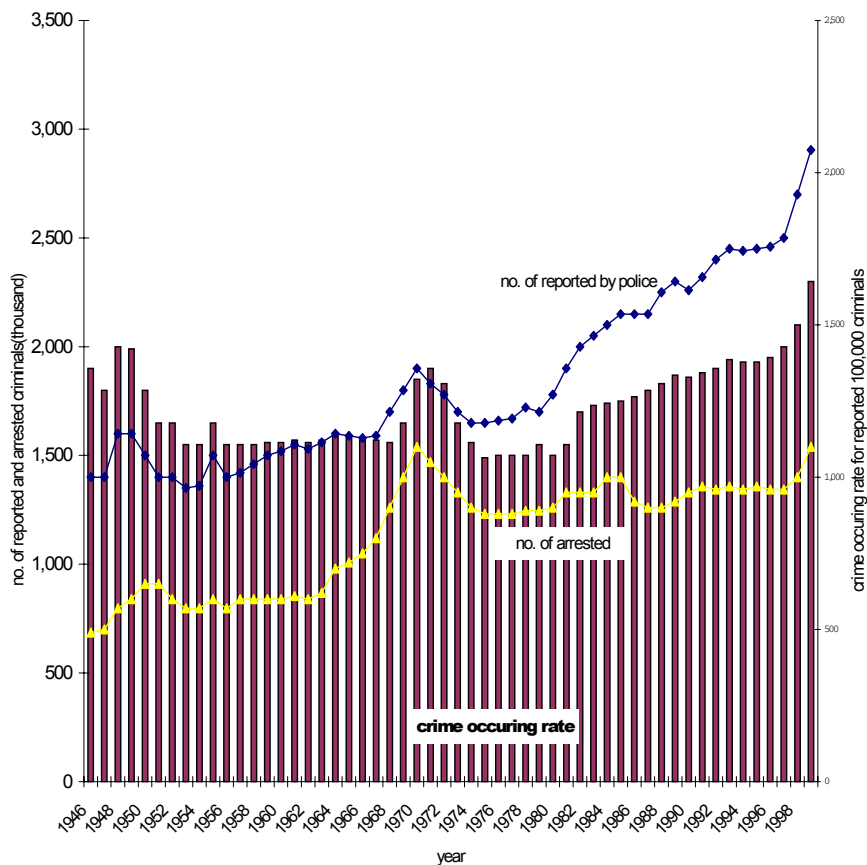
paper tries to analyze the factors of juvenile delinquency in Japan by using both social and economic factors.

This paper has following five parts. The first is the present situation of juvenile delinquency in Japan and how it compares with other countries. The second is the present situation of crime statistics in Japan, using regression analysis. The third is the consideration of the regression results. The fourth part looks at policy implications whilst the last is the conclusion.

The present situation of juvenile delinquency in Japan

The police determined that 2,904,051 criminals were arrested in 1999 (The Criminal White Paper in 2000). This was a record for the years following World War II and the largest number of them involved theft of some kind (indeed, ninety percent of them were involved in theft or traffic-related crimes). Figure 1 shows the trends of crimes after WWII in Japan.

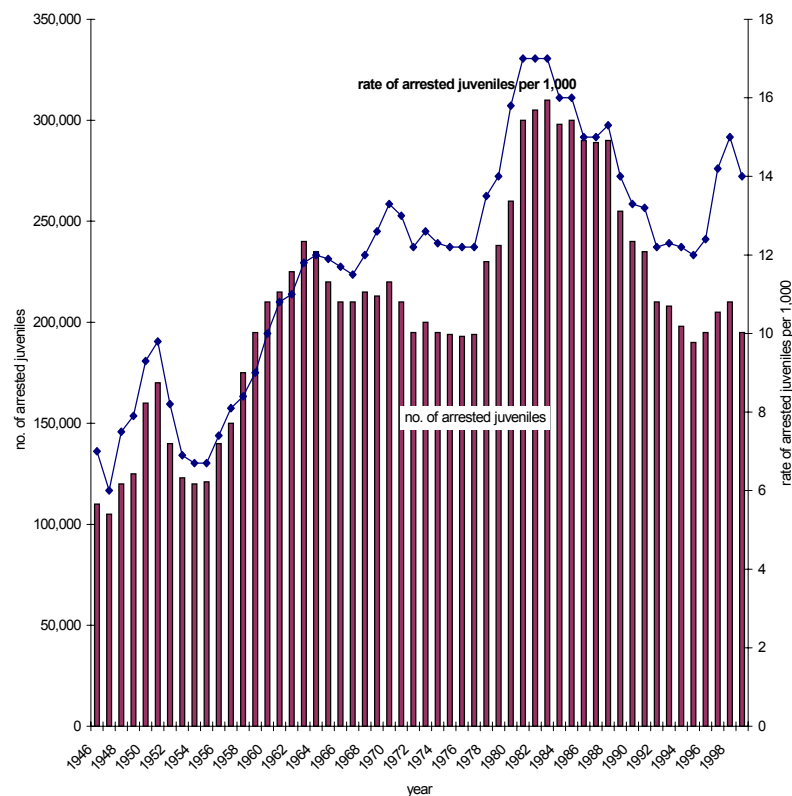
Figure 1: Trends of numbers of criminals and crime rate
 Source: Modified from figure 1 in the Criminal White Paper



Recently in Japan, although the number and percentage of young people (from birth to 19 years old) to the entire population is decreasing, the level of juvenile delinquency is increasing (The Census Report of Japanese Government in 1996). This is considered a problem by the government. According to the Police White Paper in 1996, the crime rate for juveniles aged 14 years old to 19 years old was the highest in the previous twenty years. In 1989, the number of arrested juveniles became the largest among the entire number of criminals, and from then, the rate of juvenile delinquency tends to increase. Figure 2 shows the trend of the number of juvenile crimes.

Figure 2: Trends of numbers of arrested juveniles compared to total population

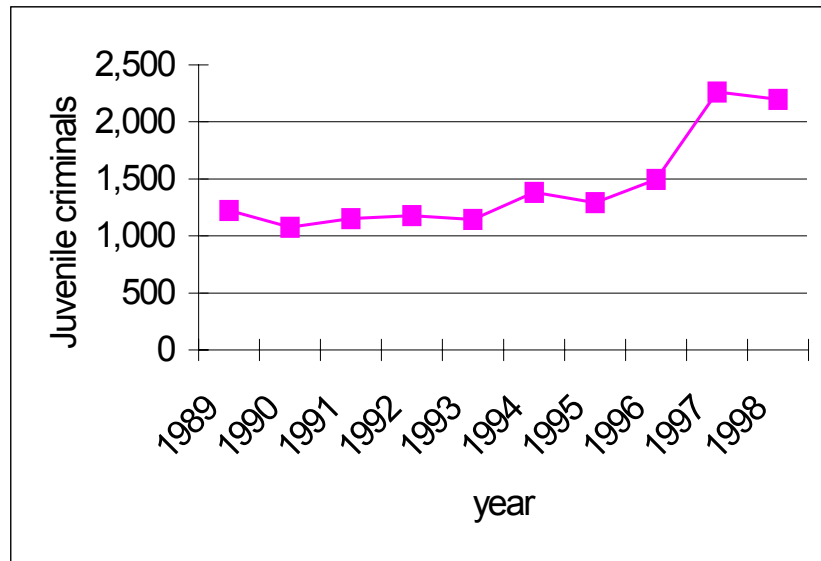
Source: Modified from figure 2 in the Criminal White Paper 2000



In 1998, the proportion of people arrested for theft was 63.4% and also constituted the largest part of juvenile crime. Another trend in juvenile delinquency is an increase in brutal crimes such as murder. Figure 3 shows the trend of juvenile brutal crimes.

Figure 3: Trends of brutal juvenile offenses

Source: Police White Paper 1999



Although the number of crimes in Japan is increasing, the crime rate is lower and the arrest rate is higher than Western countries and Korea (The Criminal White Paper in 2000).

The present situation of crime statistics in Japan and the direction of regression analysis

When individuals commit a crime, the reason will be different for each person. Therefore, we should also analyze the reason by various approaches including social and economic aspects. A sociological approach for crime analysis is common in Japan, but an economic approach is less used when compared to Western countries, particularly in the United States (Akiba 1993).

Becker (1968) was one of the first academics to construct a theory of crime in economics. Individuals compare with expected utility from legal action and illegal action, which is committing crimes. If utility from illegal action is bigger than legal action, individuals will commit a crime. This is a basic theory of crime in economics.

As time goes by, the direction of the study was divided into mainly two directions. One is the study of improvement of this model itself. The other is a substantiation study by using Becker's model. However, as mentioned above in Japan, both of them have not developed compared to Western countries (Akiba 1993). Therefore, this paper tried to make sense of the factors of juvenile delinquency by using various aspects.

This paper will try to be clear what factors are related to juvenile delinquency in Japan by using sociological and economic aspects. First, how is the change of living-time influencing juvenile delinquency by the enforcement of a five-day week to education? It will use prefectural data in Japan and the object year is 1990 and 1995 because this policy was introduced in 1992 for the first time. Second, are there any relations between a home environment, for example divorce rate and dual-income family, and an increase in number of juvenile delinquents? Third, is a regional gap such as the number of convenience stores, large-scale retail stores, the number of population and so on related to the number of juvenile delinquents? Fourth, how about police effects on juvenile delinquents? In other words, does the scale of police related expenditure have an influence on the juvenile delinquency rates or not? The way to test this is multiple regression analysis. The following expression is the model for analysis in this paper: $Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + \dots + a_nX_n + e$ (The number of independent variables is "n" and "e" is error term.)

The dependent variable is juvenile delinquents arrested for criminal larceny. Then, this paper will use following various independent variables and analyze these relations. The detail of data and results of regression analysis is shown in appendices 1, 2 and 3.

The consideration for regression results

Before starting the analysis, I mentioned four main points about this analysis, so I verify these points in order, and then suggest some potential policy implications.

According to regression results, although the results are different from dependent variables and independent variables that were used, leisure time for people without a job and prefectural police expenditure were comparatively substantial. If these factors increase, juvenile crime will also increase. By the enforcement of a five-day week to education, leisure time is actually increasing. Although an increase in leisure time is not always connected with an increase in rates of juvenile delinquency, some regression results were suggestive for the relations between an increase in the number of juvenile delinquents and leisure time. It means the change of life-style for children has some relationship with an increase in the number of juvenile delinquents.

Secondly, how about the relations with family environment? According to regression results, we could not get any clear relationship between family environment and juvenile delinquency. However, some

results show a relationship between an increase in the number of dual-income households and juvenile delinquency. Probably, the construction of healthy family environment does not cause a bad influence for Japanese society. Of course, it is not a bad thing that parents work because the background of each family is different. Even if parents work, it is important to discipline their children properly or communicate with each family member closely.

Third, how about a relationship with regional location? According to the regression results, we could not also get clear results. However, some results show a relationship between the number of large-scale retail stores and juvenile delinquency. Getting rid of large social and economic gaps between particularly rural area and urban areas is important to make a better society for everyone. The stability of society and economy is connected to mental stability and the well-being of everyone. In Japan, the economic level is not low compared to the whole world. However, brutal crimes particularly by juveniles are increasing. That is to say, the reason why they commit a crime is not only for economic reasons but also other various reasons, such as relationships with family or friends, anxiety for their future and so on. Therefore, it is important to get rid of these factors as much as we can.

Fourth, how about the relations with prefectural police expenditure? In addition to an increase in leisure time, according to this analysis, an increase in prefectural police expenditure and the number of juvenile delinquents has some relationship. In this sense, we can suggest that police supervise juveniles quite strictly. However, strict control by police is not always good for children because they have to learn by experience and think of their future. It will be better for children who commit a crime to have a chance of effective rehabilitation in some cases – this is one of the ways we should think about the education for juvenile delinquents. This is the problem for all people who live in the society and therefore, police, school, the wider community and family should think it seriously together and we should watch the rehabilitation for juvenile delinquents with a warm heart. In addition, the government and police have to think about the usage of police expenditure for not only control but also rehabilitation and education.

The above-mentioned four points act as a verification of the hypothesis for regression analysis. But, how are other factors important in preventing an increase in the number of juvenile delinquents? In the next paragraph, I suggest some policy implications.

Policy implications

According to regression results, if leisure time increases, the juvenile delinquency will also increase. Does an increase in leisure time cause only bad influences on children? The answer will obviously be “No”. On the contrary, leisure time is necessary for children to have much more social and learning experiences. In fact, the purpose of enforcing a five-day week education system is to ‘fill up’ spare time. The government expects that children have too much leisure time rather than studying in school. However, as mentioned above, some parents worry about declining standards and scholastic ability and they make their children go to cram school (whilst their parents, who have jobs, go to their work). These children cannot have much relationship with their family in the remaining spare time. In some cases, the ideas of the government and the present reality for children shows a gap.

The statistics by the Ministry of Public and Labor, “A national investigation of families and children”, shows an interesting situation. Parents who both work feel more trouble about children and family relationships than the parents where only one works. It also shows it is hard for the dual-income family to take enough care of children than the family where one of parents usually stays at home.

Therefore, I suggest two things for getting rid of this gap. The first is the fuller use of recreation facilities. The second is a promotion of a five-day week for business. If the holidays of parents and children is the same day(s), there is much more time to spend together. Moreover, they can go to recreation facilities if these are provided and it is necessary for them. Although it is important to raise scholastic ability, it is more important to have a diversity of experiences during their childhood.

The government should also get rid of regional gaps in the wider economy. We can think that the economic gap is easily related to crime because poorer people feel inferior to society. Then, the inferiority will sometimes be connected to crimes being committed. Of course, each person should make an effort themselves but the government can also help to do make changes. Besides, the stabilization of social and economic system is an important concern. In Japan, it is important to state that it is not only poor people but also rich people who commit crimes. Why? They have an anxiety for their future might be one of the reasons. If people work hard, no one expects his or her future to be lacking. Most people think their burden

will increase more than now and this anxiety for the future will sometimes become a motivation for committing a crime.

In addition, someone who has a strong power, such as parents, teacher or policeman should show respect for people who do not have a strong power such as children or older people. Everyone needs to recognize each personality regardless of his or her background. In Japan, as in many developed countries, the social atmosphere hardly admits people who do not adapt to the general path such as dropouts or the homeless. However, it is essential to care for these people and actually they need to be cared for in a respectful way. The society where everyone respects each other will be more comfortable for everyone. In this society, a large number of crimes will not occur and we need to try and realize this kind of comfortable society for everyone.

Eventually, each person decides whether people commit a crime or not. However, the environment surrounding them is also important. Therefore, everything surrounding individuals, such as family, community, government and so on, should have a close contact to stop juvenile delinquents from behaving badly.

Conclusion

The main purpose of this paper is to illustrate what factors are related to an increase in the number of juvenile delinquents in Japan. According to regression results, increases in leisure time and prefectural police expenditure have a relationship to rates of juvenile delinquency. However, it is clear that people commit a crime only in free time. Moreover, strict control by police will sometimes prevent children from rehabilitating. The personality and character of individuals is also important in whether he or she commits a crime or not. Moreover, the government should make a policy that everyone can live comfortably. Co-operation with everyone in Japanese society is essential to combat crime.

Appendix 1: Dependent & Independent variables

Dependent variables

The result of estimation 1 to 7:

Juvenile delinquent arrested for criminal larceny
(per 1,000 persons of 14-19 years old)

The result of estimation 8 to 12:

Logarithmical value of juvenile delinquent arrested for criminal
larceny (per 1,000 persons of 14-19 years old)

The result of estimation 13 and 14:

The number of juvenile delinquent arrested for larceny offences.

Independent variables

Ratio of long-term absentees from junior high school per 1,000
students

(30 days and more for a school year)

Ratio of dual-income households

Leisure time (people without a job)

Logarithmical value of leisure time (people without a job)

Police stations and police boxes per inhabitable area 100 km²

Monthly living expenditure per household (all households)

Logarithmical value of monthly living expenditure per household
(all households)

Job opening ratio for lower secondary school graduates

Prefectural police expenditure

Prefectural police expenditure per capita

Rate of divorces per 1,000 persons

Large-scale retail stores per 100,000 persons

Convenience stores per 100,000 persons

Participation rate of voluntary social service activities

Percentage distribution by prefecture

Ratio of senior high graduates going to further education

Ratio of population who are 65 years old and more

Dummy variable

Appendix 2: Regression results for 1990

Juvenile delinquent arrested for criminal larceny					
	1	2	3	4	5
constant	11.309 1.205	35.883 1.563	5.672 0.189	8.319 0.276	19.098 0.787
Ratio of long-term absentees from junior high school	0.055 0.765	0.087 0.113	0.098 1.291	0.076 1.019	0.097 1.249
Ratio of dual-income households	0.106* 1.983	0.138+ 2.408		0.045 0.621	0.055 1.071
Leisure time (people without a job)	3.426# 3.467	3.575# 3.645			4.059# 3.807
In leisure time (people without a job)			27.870# 2.918	26.919# 2.804	
Police station and boxes	0.023 0.896	0.068 1.659			
Monthly living expenditure	0.035# 2.834				
In monthly living expenditure		10.629# 2.837	9.366+ 2.461	8.831+ 2.316	8.713+ 2.356
Job opening ratio for lower secondary school graduate	0.122 0.400	0.049 0.161	0.376 0.963	0.372 0.945	0.342 1.205
Ratio of police expenditure			0.375 1.347	0.438* 1.586	
Police expenditure per capita					0.108 1.000
Large-scale retail stores	0.117 0.551	0.017 0.081	0.042 0.193	0.043 0.196	0.045 0.218
Convenience stores			0.038 1.254		0.049 1.673
Participation rate of voluntary			0.095 1.140	0.083 0.990	0.114 1.740
Ratio of senior high graduates going to further education			0.024 0.377	0.021 0.361	
Ratio of over 65 years old			0.290 1.290	0.365 1.669	
Dummy variable		4.940 1.423	0.114 0.052	0.353 0.164	2.201 0.635
R ²	0.423	0.446	0.538	0.517	0.514
Adjusted R ²	0.320	0.329	0.375	0.365	0.379

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

	Juvenile delinquent arrested for criminal larceny		In juvenile delinquent arrested for criminal larceny		
	6	7	8	9	10
constant	49.814 2.135	31.030 1.267	2.348 0.326	2.348 0.326	9.197 1.400
Ratio of long-term absentees from junior high school	0.050 0.631	0.010 0.131	0.020 1.113	0.021 1.209	0.026 1.414
Ratio of dual-income households	0.055 0.776	0.125+ 2.024	0.015 0.089	0.013 0.075	
Leisure time (people without a job)		3.607# 3.641			
In leisure time (people without a job)			5.487+ 2.392	5.451+ 2.417	
Police station and boxes		0.076* 1.753			
Monthly living expenditure	9.401+ 2.294	9.787+ 2.431	0.318 0.348	0.297 0.332	0.378 0.356
In monthly living expenditure	0.249 0.724	0.079 0.253	0.054 0.579	0.054 0.585	0.045 0.530
Job opening ratio for lower secondary school graduate	0.482* 1.639		0.257# 3.847	0.260# 4.003	0.267# 4.244
Ratio of police expenditure					0.015 0.034
Police expenditure per capita	0.079 0.352	0.030 0.129	0.082 1.585	0.082 1.607	0.103* 2.004
Large-scale retail stores			0.014 0.202		
Convenience stores	0.053 0.777		0.012 0.603	0.011 0.591	0.014 0.791
Participation rate of voluntary		0.163 0.606			
Ratio of senior high graduates going to further education			0.013 0.957	0.013 0.968	0.012 0.933
Ratio of over 65 years old	0.633# 3.281		0.104* 1.931	0.101* 1.974	0.041 0.900
Dummy variable	0.820 0.357	4.933 1.409	0.276 0.529	0.258 0.509	0.133 0.252
R ²	0.407	0.451	0.771	0.771	0.733
Adjusted R ²	0.263		0.691	0.699	0.659

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

	In juvenile delinquent arrested for criminal larceny		The number of juvenile delinquent arrested for larceny offences	
	11	12	13	14
constant	1.047 0.142	1.073 0.136	3098.087 0.757	7563.953 2.684
Ratio of long-term absentees from junior high school	0.019 1.129	0.098 0.040		30.196 1.511
Ratio of dual- income households				971.209# 3.488
Leisure time (people without a job)	5.848+ 2.513			
In leisure time (people without a job)			105.520# 4.439	32.970# 2.787
Police station and boxes			7.327 0.834	8.395+ 2.545
Monthly living expenditure	0.596 0.599	1.024 0.792		
In monthly living expenditure	0.043 0.538	0.144 1.595	278.046 1.310	107.391 1.158
Job opening ratio for lower secondary school graduate	0.262# 4.460			
Ratio of police expenditure		0.011 0.337		
Police expenditure per capita	0.284 0.636	0.814 1.478	1274.967 1.150	
Large-scale retail stores	0.086* 1.791	0.125* 1.920	299.302+ 2.257	26.747 0.450
Convenience stores		0.063 0.662		
Participation rate of voluntary	0.010 0.524	0.041+ 2.050	49.339 1.071	39.826* 1.928
Ratio of senior high graduates going to further education				1089.608 # 14.466
Ratio of over 65 years old	0.013 1.024		50.027 1.350	8.806 0.550
Dummy variable	0.112+ 2.178			
R ²	0.328 0.659	0.108 0.097	5576.223# 2.745	4095.994 # 4.515
Adjusted R ²	0.774	0.552	0.748	0.965
constant	0.703	0.444	0.694	0.954

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

Appendix 3: Regression results for 1995

Juvenile delinquent arrested for criminal larceny					
	1	2	3	4	5
constant	21.037 1.602	14.613 0.531	62.241 1.928	56.625 1.671	27.616 1.073
Ratio of long-term absentees from junior high school	0.165+ 2.478	0.137* 1.905	0.156# 2.721	0.166# 2.759	0.158+ 2.618
Ratio of dual-income households	0.140+ 2.095	0.158+ 2.266		0.065 0.010	0.074 1.275
Leisure time (people without a job)	2.627* 1.884	2.897+ 2.053			4.269# 3.214
ln leisure time (people without a job)			26.731+ 2.395	17.723* 1.623	
Police station and boxes	0.039 1.468	0.071* 1.745			
Monthly living expenditure	0.006 0.527				
ln monthly living expenditure		2.016 0.475	0.459 0.123	1.599 0.412	0.737 0.189
Job opening ratio for lower secondary school graduate	0.670 1.315	0.666 1.301	0.990* 1.858	0.470 0.936	1.260+ 2.550
Ratio of police expenditure			0.284 1.124	0.424* 1.646	
Police expenditure per capita					0.026 0.346
Large-scale retail stores	0.160 0.793	0.194 0.942	0.269 1.543	0.251 1.371	0.245 1.359
Convenience stores			0.070+ 2.188		0.105# 3.504
Participation rate of voluntary			0.032 0.473	0.030 0.425	0.070 1.153
Ratio of senior high graduates going to further education			0.084 0.002	0.071 0.142	
Ratio of over 65 years old			0.364+ 2.200	0.548# 3.643	
Dummy variable		3.728 1.046	1.490 0.682	0.232 0.108	2.391 0.729
R ²	0.272	0.290	0.553	0.490	0.488
Adjusted R ²	0.141	0.140	0.395	0.329	0.346

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

Juvenile delinquent arrested for criminal larceny	ln juvenile delinquent arrested for criminal larceny				
	6	7	8	9	10
constant	13.702 0.636	23.607 0.829	8.330 0.962	7.156 0.808	2.399 0.365
Ratio of long-term absentees from junior high school	0.167# 2.756	0.122 1.676	0.010 0.682	0.084 0.534	0.067 0.419
Ratio of dual-income households	0.017 0.026	0.131* 1.805	0.010 0.606	0.017 0.997	
Leisure time (people without a job)		3.139# 2.211		5.451+ 2.417	
ln leisure time (people without a job)			5.408* 1.808	3.525 1.235	
Police station and boxes		0.095+ 2.088			
Monthly living expenditure	0.604 0.156	0.746 0.171	0.789 0.790	1.028 1.011	0.524 0.492
ln monthly living expenditure	0.380 0.844	0.638 1.250	0.045 0.319	0.063 0.482	0.067 0.504
Job opening ratio for lower secondary school graduate	0.464* 1.880		0.192# 1.646	0.221# 3.287	0.250# 3.760
Ratio of police expenditure					0.060 0.131
Police expenditure per capita	0.243 1.316	0.298 1.332	0.127# 2.723	0.123** 2.578	0.133# 2.756
Large-scale retail stores			0.014* 1.706		
Convenience stores	0.016 0.026		0.019 0.011	0.017 0.009	0.081 0.397
Participation rate of voluntary		0.329 1.161			
Ratio of senior high graduates going to further education			0.02 1.574	0.018 1.422	0.020 1.614
Ratio of over 65 years old	0.602# 4.081		0.051 1.166	0.013 0.342	0.010 0.265
Dummy variable	0.433 0.202	4.259 1.191	0.201 0.343	0.159 0.283	0.096 0.172
R ²	0.450	0.315	0.748	0.726	0.707
Adjusted R ²	0.317	0.148	0.659	0.640	0.625

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

In juvenile delinquent arrested for criminal larceny	The number of juvenile delinquent arrested for larceny offences			
	11	12	13	14
constant	5.375 0.594	1.638 0.210	2817.678 0.916	7407.764 2.020
Ratio of long-term absentees from junior high school	0.062 0.387	0.027 0.143		25.891 1.368
Ratio of dual-income households				696.284* 1.851
Leisure time (people without a job)	3.711 1.239			
In leisure time (people without a job)			111.272# 6.211	44.789# 3.215
Police station and boxes			4.635 0.794	0.588 0.182
Monthly living expenditure	0.570 0.539	0.817 0.646		
In monthly living expenditure	0.024 0.180	0.072 0.047	240.947 0.969	51.403 0.361
Job opening ratio for lower secondary school graduate	0.242# 3.647			
Ratio of police expenditure		0.023 0.973		
Police expenditure per capita	0.092 0.194	0.722 1.404	478.137 0.588	
Large-scale retail stores	0.138# 2.869	0.157# 2.826	278.522# 3.195	47.534 0.841
Convenience stores		0.012 1.399		
Participation rate of voluntary	0.059 0.293	0.037* 1.727	19.664 0.544	36.915* 1.935
Ratio of senior high graduates going to further education				719.640# 8.634
Ratio of over 65 years old	0.016 1.266		68.663+ 2.570	19.643 1.176
Dummy variable	0.023 0.593			
R ²	0.015 0.027	0.838 0.824	6323.168# 3.991	3815.136# 3.632
Adjusted R ²	0.719	0.585	0.780	0.930
constant	0.631	0.484	0.733	0.910

Dependent: #, +, * shows significance level of 1%, 5%, 10% respectively.
() shows t-value.

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