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Two Kinds of Residents' Acts of Supplementing Public Welfare Programs

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Abstract

This paper reports two kinds of residents' acts of supplementing welfare programs conducted by municipal and prefectural governments. Principal component analysis was used to reveal how variables concerning communities and municipal or prefectural governments are related with one another. The results of the analysis showed that spontaneous social networks can help the elderly. Further, groups intentionally formed by urban residents can support children's needs.

I. Introduction

Communities in Japan have changed since the end of World War II. People's lives were influenced by democratization reforms immediately after the end of the war, as well as by the high economic growth, the following low economic growth, and administrative reforms in the 1980s. Changes in people's lives lead to changes in communities. In turn, changes in communities affect people's lives and demands for public services.

The Ministry of Health and Welfare announced the Gold Plan (*Kōreisha hoken fukushi suishin jukkanen senryaku*) in December 1989. This policy aimed to increase the number of home helpers and facilities for the elderly by fiscal year (FY) 1999. The central government furthermore implemented plans to enrich welfare programs for the elderly and children after the launch of the Gold Plan. Since the beginning of the 1990s, the central government has attempted to develop community welfare by giving roles to municipal and prefectural governments and councils of social welfare (*shakai fukushi kyōgikai*). Such councils are half-public/half-private organizations established across all levels of public administration, namely, national, prefectural, municipal, and ward of ordinance-designated cities (*seirei*

shitei toshi). The councils are expected to promote community welfare. The central government's intention to develop community welfare may have changed communities.

In such a context, this study aims to identify the features of communities in Japan related to community welfare by analyzing the components that characterize communities. Further, this work will answer the following questions. What resources for welfare can residents have? What can residents do to develop welfare in communities?

II. Methodology

Principal component analysis (PCA) is employed to reveal the features of communities. Analysis is conducted with data for FYs 1989 through 2010. As stated above, the Gold Plan was announced in FY 1989. This study examines the circumstances of communities in and after FY 1989.

The unit of analysis is prefecture. Municipality could also be the unit of analysis. However, the central government promoted consolidations among municipalities in the 1990s and 2000s. As a result, the number of municipalities substantially decreased in the 2000s: the number of municipalities dropped from 3,100 in April 1, 2004 to 1,820 in April 1, 2006. Given the drastic change in the number of municipalities, this study does not employ municipality as the unit of analysis.

Variables are divided into four groups: needs for welfare services, capability of municipal and prefectural governments, social networks, and half-public/half-private welfare.

Variables of needs for welfare services refer to variables of the elderly, children, and family. The variable of the elderly is the percentage of people aged 65 years or older in the total population. The variable of children is the percentage of people aged 19 years or younger in the total population. The Child Welfare Act (*Jidō fukushi hō*) stipulates that a child is a person younger than 18 years. Statistical books do not have the number of people younger than 18 years in each prefecture; instead, they have the number of people aged 19 years or younger in each prefecture. As such, 19 years or younger is adopted as the range in this study for the variable of children. The variable of family is population divided by the number of total

households. If a family has many members, elderly members and children can be assumed to have easy access to proper care in the family.

The variables of capability of municipal and prefectural governments contain variables of the elderly in a municipality, children in a municipality, density of elderly population, density of children in the population, municipal tax, municipal general revenue (*ippan zaigen*), municipal debt, municipal debt expenditure, prefectural tax, prefectural general revenue, prefectural debt, prefectural debt expenditure, and cumulative debt. The variable of the elderly in a municipality is the number of the elderly divided by the number of municipalities as of October 1. Similarly, the variable of children in a municipality is the number of children divided by the number of municipalities. The variable of density of the elderly population is the number of the elderly divided by the area (km²). Likewise, the variable of density of children in the population is the number of the people aged 19 years and younger divided by the area. The variables of municipal tax, municipal debt, and municipal debt expenditure refer to the amount of municipal governments' taxes, debts, and expenditures on debts divided by population, respectively. Meanwhile, the variable of municipal general revenue indicates the municipal governments' municipal taxes, local allocation taxes (*chihō kōfu zei*), and local transfer taxes (*chihō jōyo zei*) divided by population. General revenues include local allocation taxes and local transfer taxes that the central government endows to municipal and prefectural governments. Municipal and prefectural governments can decide the program on which money from the general revenues can be spent, without the need for permission from the central government. The variables of prefectural tax, prefectural debt, and prefectural debt expenditure are the amounts of a prefectural government's taxes, debts, and expenditures on debts divided by population, respectively. The variable of prefectural general revenue refers to a prefectural government's taxes, local allocation taxes, and local transfer taxes divided by population. The variable of cumulative debt is the total cumulative debts of municipal and prefectural governments divided by population.

The variables of social networks represent how easily social networks are formed in communities. The variables of migration refers to the total num-

ber of migrants within a prefecture multiplied by two, as well as that of out-bound and inbound migrants of a prefecture divided by population. The number of migrants within a prefecture multiplied by two means the total number of people leaving from and coming to municipalities. The variable of owned house is the percentage of households living in houses owned by them among all households. The variables of migration and of owned house suppose that residents living in a certain community for a long time can easily construct social networks. The variable of self-employment is the percentage of self-employed individuals, family members who help the former, and individuals doing piecework at home in the population. The variable of housewife/househusband is the percentage of housewives and househusbands in the population. Self-employed individuals, family workers, pieceworkers at home, housewives, and househusbands are assumed to spend many hours in their communities. The variable of kindergartner is the percentage of children going to kindergarten in the population. Jitsukawa and Sunagami (2012) found that mothers whose children go to kindergarten tend to form networks among other mothers easily compared with mothers whose children go to day nursery. Statistical books from FY 1989 to FY 2010 do not have the number of mothers whose children are kindergartners by prefecture. The number of kindergartners is substituted for the number of kindergartners' mothers.

Half-public/half-private welfare variables signify how actively half-public/half-private individuals and organizations for welfare, namely, commissioned welfare volunteers (*minsei iin*) and councils of social welfare play roles in providing welfare services. Commissioned welfare volunteers and councils of social welfare can supplement the insufficient public welfare services. The variable of commissioned welfare volunteer is the number of commissioned welfare volunteers in ten thousand people. The variable of council of social welfare is the number of councils of social welfare minus one minus the number of ordinance-designated cities as of October 1 in one million people. A statistical book per fiscal year includes one council of social welfare at prefectural level. Councils at the prefectural and ordinance-designated city levels instruct, assist, and supervise councils at the municipal and ward levels, respectively. Therefore, the analysis uses

the number of all the councils in a prefecture minus the number of prefectural council (1) and ordinance-designated city council.

Certain variables have no data for a certain fiscal year. In such a case, the analysis uses data for a preceding or succeeding fiscal year to substitute for missing data. Table 1 shows fiscal years with missing data and substituted fiscal years. Table 2 displays the averages and standard deviations of the variables. PCA is conducted with SAS Enterprise Guise 4.3.

III. Results

PCA of each fiscal year extracts four principal components. Table 3 shows principal components' eigenvalues, proportions of variance, and cumulative proportions of variance. Figures 1 to 4 show principal component loadings. Loadings of the third principal component (PC3) in FYs 2009 and 2010, and loadings of the fourth principal component (PC4) in FYs 1990 and 1991 are multiplied by -1 to make positive or negative signs of the principal component loadings of variables whose loadings' absolute values are relatively the same throughout FY 1989 to FY 2010.

Figure 1 indicates that the first principal component (PC1) represents prefectures with several features of community welfare. The prefectures have high percentages of aged people. Municipal and prefectural governments in these prefectures are financially weak. Positive and relatively high loadings of the variables of owned house and self-employment indicate that social networks tend to be formed and developed in these prefectures. However, negative loadings of the variable of kindergartner signify that social networks are not easily formed among parents involved in child rearing. The prefectures that PC1 describes have a relatively high number of commissioned welfare volunteers and councils of social welfare, which can promote welfare activities in communities.

Figure 2 shows that the second principal component (PC2) can be regarded as an indicator of urbanization. Loadings of PC2 are high if a prefecture has a low average number of family members, high densities of elderly and young population, high incidence of migrations, and a limited percentage of owned houses. This type of prefecture tends to have problems in care for the elderly and children because it has high densities of

both groups. These prefectures cannot depend on families and social networks as reliable bodies to address problems concerned with the elderly and children because these prefectures have many small families and many communities in which residents tend to live for a short period.

As shown in Figures 3 and 4, PC3 and PC4 are indices of prefectural and municipal governments' financial capability, respectively. A prefectural government is given a high PC3 score if it obtains a large amount of prefectural taxes or general revenues. A high PC4 score is attained by municipalities that earn a large sum of municipal taxes.

IV. Discussion

This section focuses on PC1 and PC2. PC1 has the eigenvalues of 11.6 to 12.6 and proportions of variance of 0.503 to 0.547. PC2's eigenvalues and proportions of variance are 2.8 to 3.9 and 0.123 to 0.171, respectively.

As explained in the previous section, a high score of PC1 indicates a large number of the elderly people, owned houses, self-employed individuals, commissioned welfare volunteers, and councils of social welfare, as well as financially weak municipal and prefectural governments. Although municipal and prefectural governments should deal with problems related to the elderly in prefectures with high PC1 scores, they may not have sufficient financial capability in these prefectures. However, social networks and half-public/half-private parties for welfare services can be expected to supplement welfare programs provided by municipal and prefectural governments.

Meanwhile, attention should be paid to the negative principal component loadings of the kindergartner variable. This result of the analysis indicates that communities in which social networks can be easily formed and enlarged have weak or small social networks among parents involved in child rearing. Another notable point is that the absolute values of the principal component loadings of the children variable are relatively low. This point is different from that indicated by loadings of the elderly variable. These results do not mean that most of the communities with many children tend to have many commissioned welfare volunteers and councils of social welfare.

PC2 has high loadings for the variables of densities of elderly and young

population. This point signifies that problems related to the elderly and children are severe in prefectures with high PC2 scores. Municipal and prefectural governments in these prefectures should deal with these problems. However, the principal component loadings of the percentage of the elderly have relatively low absolute values. Those of the percentage of children are negative and have relatively high absolute values. The percentages of the elderly and children are not generally high in prefectures with high PC2 scores. Although the elderly and children may face problems in these prefectures, municipal and prefectural governments can overlook difficulties related to the elderly and children; these municipal and prefectural governments could pay attention to other problems. Municipal and prefectural governments cannot depend on families to provide sufficient care for their elderly and young members because families tend to have fewer members in these prefectures.

Social networks cannot be expected to play sufficient roles in supporting the elderly and children in urbanized prefectures because migration is frequent in urban areas. People who live in a certain community for a long time are fewer in these prefectures compared with other prefectures. However, a number of reports have explained urban residents' welfare activities (Matsubara 2011; "Sanka gata fukushi shakai o hiraku" shuppan purojekuto 2000; Seikatsu fukushi kenkyū kikō 2003; Takahashi 1999). Social networks can be spontaneously formed in rural areas where many people reside permanently. Although urban residents have difficulties in creating spontaneous social networks, they can reach out to those who are willing to take care of the elderly or children. Urban areas have many residents. They may face similar troubles concerned with the elderly or children, but they can intentionally form groups to care for the elderly and children. PC2 has positive principal component loadings of the variable of housewife and househusband. This result signifies that housewives and househusbands can be members of groups supporting the elderly and children. Apart from families and spontaneously formed social networks in rural areas, intentionally formed groups in urban areas can supplement public services for the elderly and children.

V. Conclusion

This study surveyed features of communities in terms of welfare for the elderly and children. The analysis revealed that prefectures with high percentages of the elderly tend to have solid social networks as well as many commissioned welfare volunteers and councils of social welfare. Although municipal and prefectural finances are insufficient in these prefectures, the prefectures benefit from the contribution of social networks and half-public/half-private parties toward welfare provision for the elderly. Further, although prefectures with urban areas cannot anticipate enough participation of family members and spontaneous social networks to solve problems related to the elderly and children, residents might intentionally form groups to address such problems.

Two kinds of residents' acts supplement municipal and prefectural governments' welfare programs, namely, spontaneous social networks and intentionally formed groups. Activities related to these support groups are important subjects of community welfare studies.

References

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Table 1. Data

Variable	Source	Substitution of data
The elderly	Population aged 65 years and older: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikai nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikai</i> .	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikai nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikai</i> .	
Children	Population aged 19 years and younger: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikai nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikai</i> .	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikai nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikai</i> .	
Family	Household: Jichi-shō. ed. 1989–1992. <i>Zenkoku jinkō setai sū hyō, jinkō dōtai hyō</i> . Jichi-shō, Shichōson jichi kenkyūkai, or Kokudo chiri kyōkai. 1993–2010. <i>Jūmin kihon daichō jinkō yōran</i> .	
	Population: Jichi-shō. ed. 1989–1992. <i>Zenkoku jinkō setai sū hyō, jinkō dōtai hyō</i> . Jichi-shō, Shichōson jichi kenkyūkai, or Kokudo chiri kyōkai. 1993–2010. <i>Jūmin kihon daichō jinkō yōran</i> .	

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Variable	Source	Substitution of data
The elderly in a municipality	Population aged 65 years and older: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikei nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikei</i> .	
	Municipality: Seifu tōkei no sōgō madoguchi. [http://www.e-stat.go.jp/SG1/hyoujun/initialize.do]	
Children in a municipality	Population aged 19 years and younger: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikei nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikei</i> .	
	Municipality: Seifu tōkei no sōgō madoguchi. [http://www.e-stat.go.jp/SG1/hyoujun/initialize.do]	
Density of elderly population	Population aged 65 years and older: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikai jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikei nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikei</i> .	
	Area: Kensetsu-shō or Kokudokōtsū-shō. 1989–2010. <i>Zenkoku todōfuken shikuchōson betsu menseki shirabe</i> .	

Variable	Source	Substitution of data
Density of children in the population	Population aged 19 years and younger: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1989, 1991–1994, and 1996. <i>Suikei jinkō</i> . Sōmu-chō or Sōmu-shō. ed. 1997–1999, 2001–2004, and 2006–2008. <i>Jinkō suikei nempō</i> . Sōmu-shō. ed. 2009. <i>Jinkō suikei</i> .	
	Area: Kensetsu-shō or Kokudokōtsū-shō. 1989–2010. <i>Zenkoku todōfuken shikuchōson betsu menseki shirabe</i> .	
Municipal tax	Municipal tax: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i> . Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i> . [http://www.soumu.go.jp/iken/zaisei/toukei.html]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	
Municipal general revenue	Municipal tax, local allocation tax, and local transfer tax: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i> . Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i> . [http://www.soumu.go.jp/iken/zaisei/toukei.html]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	

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Variable	Source	Substitution of data
Municipal debt	<p>Municipal debt: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i>. Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i>. [http://www.soumu.go.jp/iken/zaisei/toukei.html]</p>	
	<p>Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i>. Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i>. Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i>.</p>	
Municipal debt expenditure	<p>Municipal debt expenditure: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i>. Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i>. [http://www.soumu.go.jp/iken/zaisei/toukei.html]</p>	
	<p>Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i>. Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i>. Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i>.</p>	
Prefectural tax	<p>Prefectural tax: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i>. Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i>. [http://www.soumu.go.jp/iken/zaisei/toukei.html]</p>	
	<p>Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i>. Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i>. Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i>.</p>	

Variable	Source	Substitution of data
Prefectural general revenue	Prefectural tax, local allocation tax, and local transfer tax: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i> . Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i> . [http://www.soumu.go.jp/iken/zaisei/toukei.html]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	
Prefectural debt	Prefectural debt: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i> . Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i> . [http://www.soumu.go.jp/iken/zaisei/toukei.html]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	
Prefectural debt expenditure	Prefectural debt expenditure: Chihō zaisei chōsa kenkyūkai. ed. 1989–2007. <i>Chihō zaisei tōkei nempō</i> . Sōmu-shō. 2008–2010. <i>Chihō zaisei tōkei nempō</i> . [http://www.soumu.go.jp/iken/zaisei/toukei.html]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	

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Variable	Source	Substitution of data
Cumulative debt	Municipal and Prefectural cumulative debt: Asahi shimbunsha or Asahi shimbun shuppan. ed. 1989–2010. <i>Minryoku</i> .	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	
Migration	Migrant: Sōmu-chō or Sōmu-shō. ed. 1989–2010. <i>Jūmin kihon daichō jinkō idō hōkoku nempō</i> .	
	Population: Jichi-shō. ed. 1989–1992. <i>Zenkoku jinkō setai sū hyō, jinkō dōtai hyō</i> . Jichi-shō, Shichōson jichi kenkyūkai, or Kokudo chiri kyōkai. 1993–2010. <i>Jūmin kihon daichō jinkō yōran</i> .	
Owned house	Household living in its own house: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1993. <i>Jūtaku tōkei chōsa hōkoku</i> . Sōmu-chō or Sōmu-shō. ed. 1998, 2003, and 2008. <i>Jūtaku-tochi tōkei chōsa hōkoku</i> . Kōsei-shō or Kōseirōdō-shō. ed. 1989, 1992, 2001, 2004, and 2007. <i>Kokumin seikatsu kiso chōsa</i> .	Data for FY 1990 → FY 1991 Data for FY 1993 → FY 1994 Data for FY 1995 → FY 1996 Data for FY 1998 → FYs 1997 and 1999 Data for FY 2001 → FY 2002 Data for FY 2005 → FY 2006 Data for FY 2008 → FY 2009
	Household: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō. ed. 1993. <i>Jūtaku tōkei chōsa hōkoku</i> . Sōmu-chō or Sōmu-shō. ed. 1998, 2003, and 2008. <i>Jūtaku-tochi tōkei chōsa hōkoku</i> . Kōsei-shō or Kōseirōdō-shō. ed. 1989, 1992, 2001, 2004, and 2007. <i>Kokumin seikatsu kiso chōsa</i> .	

Variable	Source	Substitution of data
Self-employment	Self-employed individual, family worker, and pieceworker at home: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō or Sōmu-shō. ed. 1992, 1997, 2002, and 2007. <i>Shūgyō kōzō kihon chōsa hōkoku</i> . Kōsei-shō or Kōseirōdō-shō. ed. 1989, 1998, 2001, and 2004. <i>Kokumin seikatsu kiso chōsa</i> .	Data for FY 1990 → FY 1991 Data for FY 1992 → FY 1993 Data for FY 1995 → FYs 1994 and 1996 Data for FY 1998 → FY 1999
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1992 and 1997. <i>Waga kuni no suiikei jinkō</i> . Sōmu-shō. ed. 2002 and 2007. <i>Jinkō suiikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> . Kōsei-shō or Kōseirōdō-shō. ed. 1989, 1998, 2001, and 2004. <i>Kokumin seikatsu kiso chōsa</i> .	Data for FY 2002 → FY 2003 Data for FY 2005 → FY 2006 Data for FY 2007 → FY 2008 Data for FY 2010 → FY 2009
Housewife/ househusband	Housewife and househusband: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-chō or Sōmu-shō. ed. 1992, 1997, 2002, and 2007. <i>Shūgyō kōzō kihon chōsa hōkoku</i> .	Data for FY 1990 → FYs 1989 and 1991 Data for FY 1992 → FY 1993 Data for FY 1995 → FYs 1994 and 1996 Data for FY 1997 → FY 1998
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1992 and 1997. <i>Waga kuni no suiikei jinkō</i> . Sōmu-shō. ed. 2002 and 2007. <i>Jinkō suiikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	Data for FY 2000 → FYs 1999 and 2001 Data for FY 2002 → FY 2003 Data for FY 2005 → FYs 2004 and 2006 Data for FY 2007 → FY 2008 Data for FY 2010 → FY 2009
Kindergartner	Kindergartner: Mombu-shō or Mombukagaku-shō. 1989–2010. <i>Gakkō kihon chōsa hōkokusho</i> .	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, 2005, and 2010. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suiikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suiikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	

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Variable	Source	Substitution of data
Commissioned welfare volunteer	Comissioned welfare volunteer: Kōsei-shō or Kōseirōdō-shō. ed. 1989–2008. <i>Shakai fukushi gyōsei gyōmu hōkoku</i> . Kōseirōdō-shō. ed. 2009. <i>Fukushi gyōsei hōkoku rei</i> .	Data for FY 2009 → FY 2010
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, and 2005. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	
Council of social welfare	Comissioned welfare volunteer: Kōsei-shō or Kōseirōdō-shō. ed. 1989–2008. <i>Shakai fukushi gyōsei gyōmu hōkoku</i> . Kōseirōdō-shō. ed. 2009. <i>Fukushi gyōsei hōkoku rei</i> .	Data for FY 2009 → FY 2010
	Ordinance-designated city: Seifu tōkei no sōgō madoguchi. [http://www.e-stat.go.jp/SG1/hyoujun/initialize.do]	
	Population: Sōmu-chō or Sōmu-shō. ed. 1990, 1995, 2000, and 2005. <i>Kokusei chōsa hōkoku</i> . Sōmu-shō. ed. 1989, 1991–1994, and 1996–1999. <i>Waga kuni no suikei jinkō</i> . Sōmu-shō. ed. 2001–2004 and 2006–2009. <i>Jinkō suikei, kokusei chōsa kekka ni yoru hokan hōsei jinkō</i> .	

Table 2. Mean and Standard Deviation

	The elderly	Children	Family	The elderly in a municipality	Children in a municipality	Density of elderly population	Density of children in population	Municipal tax	Municipal general revenue	
				1989						
Mean	13.0	27.0	3.15	4,645	10,867	69.6	170.8	109,021	185,418	
Std	2.23	1.41	0.281	3,916.3	11,738.6	1.06.01	285.56	26,382.6	19,650.1	
				1990						
Mean	13.6	26.5	3.12	4,830	10,597	72.2	166.0	113,904	195,293	
Std	2.36	1.49	0.279	4,029.3	11,251.1	1.08.79	272.82	27,852.4	19,774.8	
				1991						
Mean	14.2	26.0	3.08	5,060	10,378	75.5	162.1	120,412	206,231	
Std	2.46	1.46	0.278	4,241.5	10,897.3	1.14.39	264.70	29,529.6	20,805.8	
				1992						
Mean	14.7	25.3	3.05	5,276	10,110	78.7	157.5	126,496	220,506	
Std	2.55	1.44	0.276	4,432.8	10,516.4	1.19.15	255.62	30,520.1	23,035.9	
				1993						
Mean	15.3	24.6	3.01	5,489	9,818	81.8	152.7	127,414	221,666	
Std	2.63	1.42	0.271	4,628.0	10,153.6	1.23.94	246.98	29,055.5	24,947.8	
				1994						
Mean	15.8	23.9	2.98	5,711	9,543	85.6	148.9	122,614	216,272	
Std	2.70	1.42	0.268	4,833.4	9,811.5	1.31.08	241.75	27,108.5	25,972.1	
				1995						
Mean	16.3	23.3	2.95	5,946	9,324	88.6	144.1	128,632	225,862	
Std	2.77	1.50	0.265	5,106.3	9,556.8	1.34.99	229.37	27,274.9	27,282.1	
				1996						
Mean	16.9	22.8	2.91	6,193	9,115	91.9	140.1	132,834	232,995	
Std	2.82	1.48	0.262	5,368.9	9,300.5	1.39.41	221.04	28,036.2	28,597.5	
				1997						
Mean	17.5	22.3	2.88	6,435	8,986	95.7	137.5	138,134	237,961	
Std	2.87	1.43	0.257	5,633.9	9,146.3	1.45.91	217.56	28,968.3	28,241.4	
				1998						
Mean	18.0	21.8	2.84	6,681	8,780	99.5	135.3	134,073	236,782	
Std	2.92	1.39	0.255	5,916.3	9,072.0	1.52.65	215.71	27,430.1	30,554.3	
				1999						
Mean	18.6	21.3	2.81	6,911	8,642	103.0	133.4	134,354	245,833	
Std	2.92	1.32	0.251	6,186.6	9,022.4	1.58.83	214.34	26,026.4	32,670.8	

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	The elderly	Children	Family	The elderly in a municipality	Children in a municipality	Density of elderly population	Density of children in population	Municipal tax	Municipal general revenue
Mean	19.2	20.9	2.78	7,180	8,495	107.5	131.0	130,932	244,684
SD	2.93	1.40	0.248	6,550.5	8,859.2	167.92	209.16	24,723.0	33,930.9
Mean	19.8	20.6	2.75	7,484	8,417	112.1	129.7	131,162	237,630
SD	2.91	1.37	0.245	6,967.0	8,855.7	176.79	208.09	24,428.8	32,317.7
Mean	20.3	20.3	2.72	7,750	8,336	116.2	128.5	128,738	229,752
SD	2.90	1.33	0.243	7,295.1	8,852.5	184.51	208.29	23,208.0	31,099.8
Mean	20.8	19.8	2.69	8,040	8,282	119.9	127.4	124,513	219,376
SD	2.86	1.26	0.239	7,608.0	8,911.8	191.96	209.99	22,032.4	30,145.1
Mean	21.2	19.4	2.66	8,541	8,439	123.1	126.2	124,750	218,430
SD	2.81	1.22	0.235	7,836.3	8,906.9	198.38	211.43	21,489.4	30,346.1
Mean	21.8	19.3	2.63	11,888	10,956	128.5	123.7	127,855	224,926
SD	2.81	1.29	0.231	8,211.9	8,497.2	206.72	200.19	22,133.0	31,508.5
Mean	22.5	19.0	2.59	14,677	12,883	134.0	123.1	130,514	227,970
SD	2.74	1.25	0.227	8,750.6	8,661.2	218.04	201.16	23,049.6	30,425.2
Mean	23.1	18.7	2.56	15,306	12,879	138.7	122.2	141,118	229,525
SD	2.68	1.22	0.224	9,407.8	8,954.9	227.75	202.54	24,133.7	30,616.9
Mean	23.6	18.4	2.53	15,821	12,805	143.1	121.8	141,887	233,651
SD	2.64	1.20	0.220	9,853.3	9,063.2	236.62	204.82	23,572.8	32,704.3
Mean	24.2	18.1	2.51	16,345	12,739	147.5	121.1	135,406	231,227
SD	2.59	1.21	0.217	10,290.4	9,142.4	245.57	206.15	21,350.7	34,604.5
Mean	24.4	18.1	2.48	16,873	12,987	148.3	119.1	134,166	238,356
SD	2.64	1.21	0.211	10,394.7	8,985.5	245.46	199.23	20,441.9	38,053.1

	Municipal debt	Municipal debt expenditure	Prefectural tax	Prefectural genera revenue	Prefectural debt	Prefectural debt expenditure	Cumulative debt	Migration	Owned house
					1989				
Mean	25,639	30,563	99,637	202,097	32,275	29,446	456,251	9.2	69.0
SD	6,753.1	7,757.7	51,225.8	49,414.2	14,574.8	10,783.9	113,760.6	2.24	8.19
					1990				
Mean	29,486	31,856	106,739	216,416	34,618	29,708	477,283	9.1	66.4
SD	7,153.1	7,840.8	50,658.2	50,975.8	15,095.5	10,801.6	120,438.3	2.13	8.57
					1991				
Mean	34,574	33,657	112,479	228,845	37,442	30,991	502,922	9.2	66.4
SD	8,665.8	8,351.3	50,591.4	56,002.4	16,044.4	11,182.7	128,049.9	2.10	8.57
					1992				
Mean	43,259	35,823	105,466	222,046	46,547	31,960	550,850	9.1	68.5
SD	9,831.3	8,814.1	44,777.9	53,992.5	16,522.2	12,110.7	136,151.4	2.06	8.83
					1993				
Mean	53,775	37,525	100,409	215,433	63,119	33,333	620,349	9.2	67.0
SD	12,418.5	9,104.0	40,324.1	53,741.6	18,536.1	12,137.7	146,238.9	2.11	8.71
					1994				
Mean	59,947	39,996	100,897	214,066	66,856	36,496	696,429	9.2	67.0
SD	13,245.7	9,578.1	37,504.5	53,120.8	20,006.1	14,893.1	158,499.2	2.12	8.71
					1995				
Mean	66,247	43,504	103,365	218,372	79,701	37,817	791,770	9.0	65.1
SD	24,333.8	10,101.6	38,948.1	52,881.1	25,265.3	13,890.9	178,054.5	2.06	8.06
					1996				
Mean	65,172	46,388	107,239	227,031	76,992	42,444	878,547	9.3	65.1
SD	18,399.8	10,759.5	42,907.4	55,208.3	25,271.1	16,209.7	198,966.6	2.02	8.06
					1997				
Mean	57,953	49,608	109,870	227,229	75,406	46,769	950,634	8.9	66.6
SD	17,378.2	12,242.3	41,456.4	56,914.0	25,154.5	17,573.4	218,069.5	1.90	7.77
					1998				
Mean	58,024	52,086	115,283	235,933	84,227	49,998	1,025,717	8.7	66.6
SD	17,474.3	12,348.0	38,747.9	60,768.3	29,272.2	17,628.8	238,896.9	1.85	7.77
					1999				
Mean	50,538	55,102	109,679	246,658	74,139	55,305	1,075,266	8.6	66.6
SD	17,961.3	13,555.2	36,518.9	61,696.3	28,378.7	20,020.7	258,064.0	1.84	7.77

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	Municipal debt	Municipal debt expenditure	Prefectural tax	Prefectural genera revenue	Prefectural debt	Prefectural debt expenditure	Cumulative debt	Migration	Owned house
					2000				
Mean	44,658	55,083	116,414	260,550	63,186	59,968	1,101,519	8.4	65.5
SD	16,941.2	13,145.6	38,390.9	63,705.9	27,121.0	21,188.3	273,717.6	1.80	7.20
					2001				
Mean	49,191	56,660	114,374	250,168	66,682	64,037	1,127,868	8.4	68.9
SD	17,015.9	13,981.0	39,994.7	59,872.4	29,787.2	24,779.9	290,270.9	1.76	7.38
					2002				
Mean	53,736	57,355	100,487	232,633	76,431	64,921	1,166,989	8.4	68.9
SD	16,114.6	14,544.5	36,951.9	57,651.2	30,553.1	24,100.4	304,869.4	1.76	7.38
					2003				
Mean	56,142	57,918	100,428	222,832	76,266	66,363	1,206,867	8.2	66.8
SD	14,127.0	14,917.4	35,063.0	52,067.5	28,568.1	24,746.8	316,856.0	1.78	7.30
					2004				
Mean	47,532	57,774	105,266	222,064	70,116	65,841	1,228,267	7.9	71.0
SD	12,584.9	15,360.3	37,771.2	50,495.4	32,979.3	24,478.7	327,215.8	1.72	7.11
					2005				
Mean	43,422	58,776	109,076	228,956	59,089	67,089	1,236,041	7.6	66.0
SD	12,375.5	18,763.3	41,429.4	51,218.3	23,483.6	27,637.2	331,421.2	1.77	6.69
					2006				
Mean	39,613	58,076	115,953	243,539	55,548	65,396	1,158,665	7.5	66.0
SD	11,208.6	16,304.2	44,289.6	53,088.5	20,853.9	24,652.3	296,464.3	1.76	6.69
					2007				
Mean	36,639	58,759	130,925	238,949	58,728	64,620	1,239,741	7.5	70.5
SD	9,519.9	15,993.6	48,966.7	54,661.4	25,664.6	24,195.8	338,061.7	1.75	7.27
					2008				
Mean	35,968	58,735	126,406	234,000	58,636	65,315	1,239,403	7.3	66.7
SD	8,885.0	15,768.0	46,168.8	54,745.9	18,552.7	24,258.2	337,171.1	1.68	7.25
					2009				
Mean	41,539	57,807	106,361	215,372	75,004	65,559	1,260,647	7.0	66.7
SD	9,966.0	15,775.2	34,874.3	47,866.7	23,312.4	24,646.3	338,678.5	1.66	7.25
					2010				
Mean	47,109	57,053	102,379	225,778	77,959	67,829	1,288,071	6.7	66.1
SD	11,756.4	16,029.2	34,180.7	52,246.6	27,651.7	26,334.4	339,550.8	1.63	6.86

	Self-employment	Housewife/househusband	Kindergartner	Commissioned welfare volunteer	Council of social welfare
			1989		
Mean	13.3	13.7	1.55	17.7	34.7
SD	2.56	1.57	0.354	4.03	16.41
			1990		
Mean	12.2	13.7	1.52	17.6	35.9
SD	2.50	1.57	0.343	4.07	16.90
			1991		
Mean	12.2	13.7	1.49	17.6	36.7
SD	2.50	1.57	0.335	4.08	17.01
			1992		
Mean	12.1	13.6	1.46	18.0	37.3
SD	2.36	1.68	0.322	4.03	17.04
			1993		
Mean	12.1	13.6	1.42	19.3	37.6
SD	2.36	1.68	0.310	4.40	16.98
			1994		
Mean	10.9	13.8	1.38	19.3	37.9
SD	2.04	1.54	0.295	4.39	16.88
			1995		
Mean	10.9	13.8	1.34	19.7	38.0
SD	2.04	1.54	0.287	4.39	16.81
			1996		
Mean	10.9	13.8	1.32	19.8	38.0
SD	2.04	1.54	0.281	4.38	16.78
			1997		
Mean	10.7	14.7	1.31	19.8	38.1
SD	1.96	1.60	0.282	4.38	16.85
			1998		
Mean	11.6	14.7	1.30	20.2	38.2
SD	1.97	1.60	0.282	4.42	16.90
			1999		
Mean	11.6	15.2	1.28	20.2	38.2
SD	1.97	1.38	0.285	4.44	16.97

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	Self-employment	Housewife/househusband	Kindergartner	Commissioned welfare volunteer	Council of social welfare
			2000		
Mean	9.5	15.2	1.27	20.2	38.2
SD	1.74	1.38	0.287	4.46	17.02
			2001		
Mean	11.8	15.2	1.25	21.1	38.2
SD	1.82	1.38	0.290	4.69	17.07
			2002		
Mean	9.0	15.3	1.25	21.1	38.0
SD	1.69	1.44	0.300	4.74	16.87
			2003		
Mean	9.0	15.3	1.23	21.2	37.2
SD	1.69	1.44	0.305	4.79	16.75
			2004		
Mean	11.3	13.4	1.22	21.3	29.9
SD	1.92	1.26	0.308	4.75	12.62
			2005		
Mean	8.8	13.4	1.21	21.3	21.0
SD	1.70	1.26	0.307	4.82	9.61
			2006		
Mean	8.8	13.4	1.20	21.4	20.1
SD	1.70	1.26	0.309	4.89	8.91
			2007		
Mean	7.6	15.5	1.18	21.5	19.9
SD	1.52	1.47	0.307	4.92	8.91
			2008		
Mean	7.6	15.5	1.15	21.6	19.9
SD	1.52	1.47	0.309	4.98	9.06
			2009		
Mean	7.2	13.9	1.12	21.7	19.5
SD	1.55	1.10	0.305	5.03	9.13
			2010		
Mean	7.2	13.9	1.10	21.7	19.5
SD	1.55	1.10	0.301	5.03	9.13

Table 3. Principal Component

Principal component	Eigenvalue	Proportion of variance	Cumulative proportion of variance	Principal component	Eigenvalue	Proportion of variance	Cumulative proportion of variance
1989				1997			
1	11.5702954	0.5031	0.5031	1	12.2490526	0.5326	0.5326
2	3.8706098	0.1683	0.6713	2	3.5484572	0.1543	0.6868
3	2.6883718	0.1169	0.7882	3	2.2652687	0.0985	0.7853
4	1.2753092	0.0554	0.8437	4	1.3954395	0.0607	0.8460
1990				1998			
1	12.0410937	0.5235	0.5235	1	12.1411996	0.5279	0.5279
2	3.7544160	0.1632	0.6868	2	3.5146606	0.1528	0.6807
3	2.6207818	0.1139	0.8007	3	2.2332918	0.0971	0.7778
4	1.2105477	0.0526	0.8533	4	1.4310770	0.0622	0.8400
1991				1999			
1	12.0287315	0.5230	0.5230	1	12.1762482	0.5294	0.5294
2	3.7579865	0.1634	0.6864	2	3.4674078	0.1508	0.6802
3	2.5350479	0.1102	0.7966	3	2.1658274	0.0942	0.7743
4	1.2879543	0.0560	0.8526	4	1.4024111	0.0610	0.8353
1992				2000			
1	11.6026464	0.5045	0.5045	1	12.3421616	0.5366	0.5366
2	3.9432153	0.1714	0.6759	2	3.5199607	0.1530	0.6897
3	2.5713026	0.1118	0.7877	3	2.0935003	0.0910	0.7807
4	1.3542115	0.0589	0.8466	4	1.3899575	0.0604	0.8411
1993				2001			
1	11.7877003	0.5125	0.5125	1	12.0069425	0.5220	0.5220
2	3.8770694	0.1686	0.6811	2	3.4262003	0.1490	0.6710
3	2.4779808	0.1077	0.7888	3	2.0599455	0.0896	0.7606
4	1.4439083	0.0628	0.8516	4	1.5137091	0.0658	0.8264
1994				2002			
1	12.0595856	0.5243	0.5243	1	12.4956945	0.5433	0.5433
2	3.6942917	0.1606	0.6850	2	3.3657601	0.1463	0.6896
3	2.3062805	0.1003	0.7852	3	2.0797522	0.0904	0.7801
4	1.4195565	0.0617	0.8469	4	1.4936269	0.0649	0.8450
1995				2003			
1	11.7296849	0.5100	0.5100	1	12.5889999	0.5473	0.5473
2	3.6779968	0.1599	0.6699	2	3.3029115	0.1436	0.6910
3	2.3349546	0.1015	0.7714	3	2.1075421	0.0916	0.7826
4	1.3502242	0.0587	0.8301	4	1.4867734	0.0646	0.8472
1996				2004			
1	12.0526292	0.5240	0.5240	1	11.6874236	0.5081	0.5081
2	3.5831927	0.1558	0.6798	2	3.2198341	0.1400	0.6481
3	2.2670055	0.0986	0.7784	3	2.0823091	0.0905	0.7387
4	1.4052160	0.0611	0.8395	4	1.7571469	0.0764	0.8151

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Principal component	Eigenvalue	Proportion of variance	Cumulative proportion of variance	Principal component	Eigenvalue	Proportion of variance	Cumulative proportion of variance
2005				2008			
1	11.8707448	0.5161	0.5161	1	12.3025980	0.5349	0.5349
2	3.3181698	0.1443	0.6604	2	3.1005216	0.1348	0.6697
3	1.9295130	0.0839	0.7443	3	2.0140090	0.0876	0.7573
4	1.7455771	0.0759	0.8202	4	1.8021823	0.0784	0.8356
2006				2009			
1	12.3186844	0.5356	0.5356	1	12.5817417	0.5470	0.5470
2	3.2380351	0.1408	0.6764	2	2.9282435	0.1273	0.6743
3	1.9710845	0.0857	0.7621	3	2.0473924	0.0890	0.7634
4	1.8079180	0.0786	0.8407	4	1.6786467	0.0730	0.8363
2007				2010			
1	11.9444143	0.5193	0.5193	1	12.4726585	0.5423	0.5423
2	3.2451679	0.1411	0.6604	2	2.8269862	0.1229	0.6652
3	2.0723106	0.0901	0.7505	3	2.0736105	0.0902	0.7554
4	1.7776742	0.0773	0.8278	4	1.6912525	0.0735	0.8289

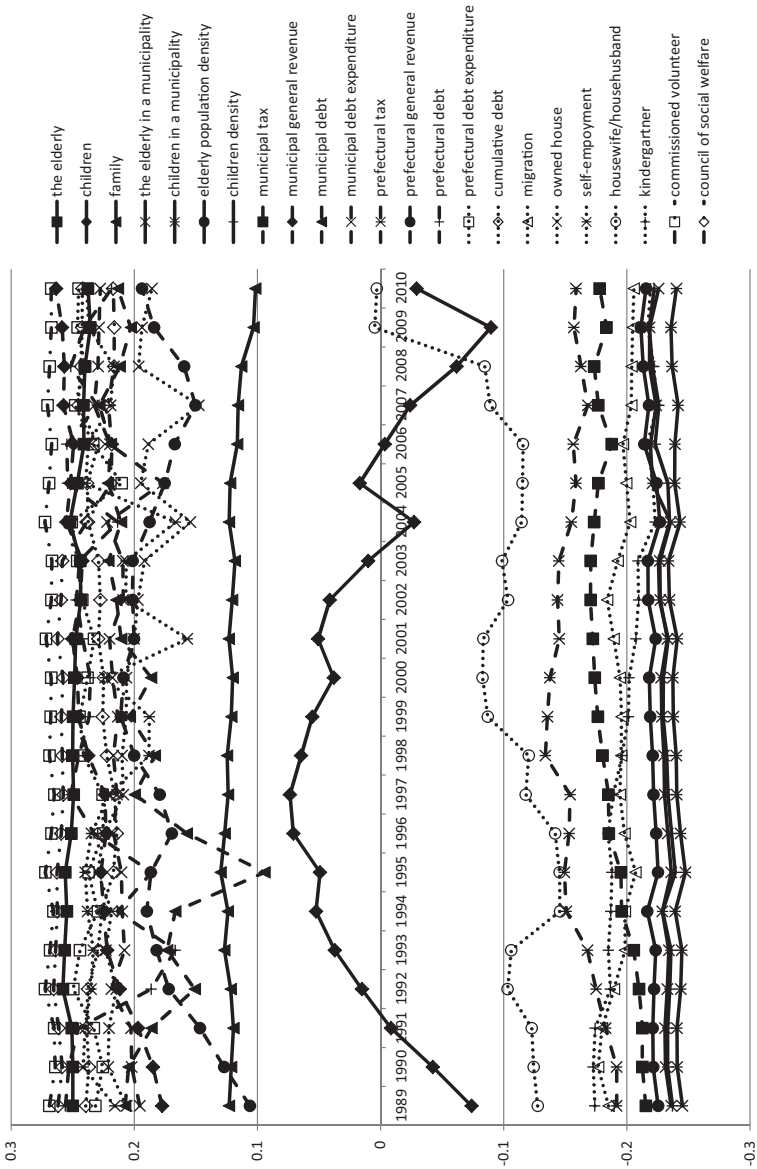


Figure 1. Loading of the First Principal Component

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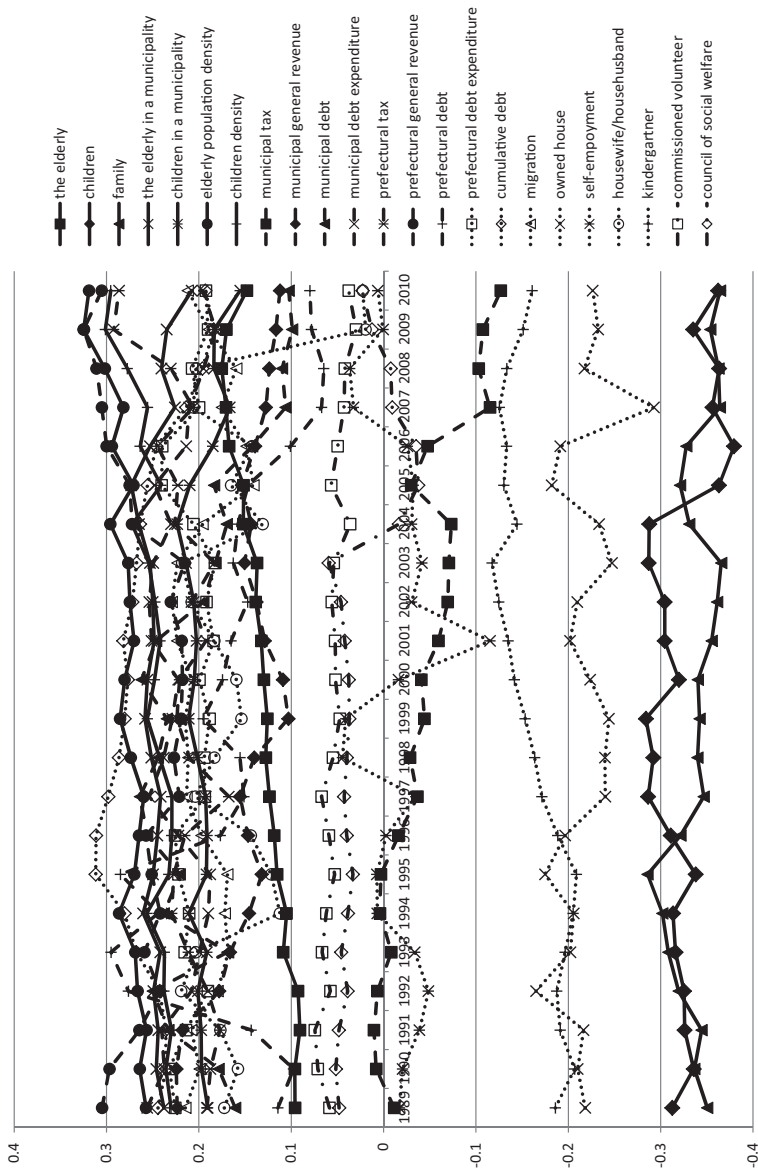


Figure 2. Loading of the Second Principal Component

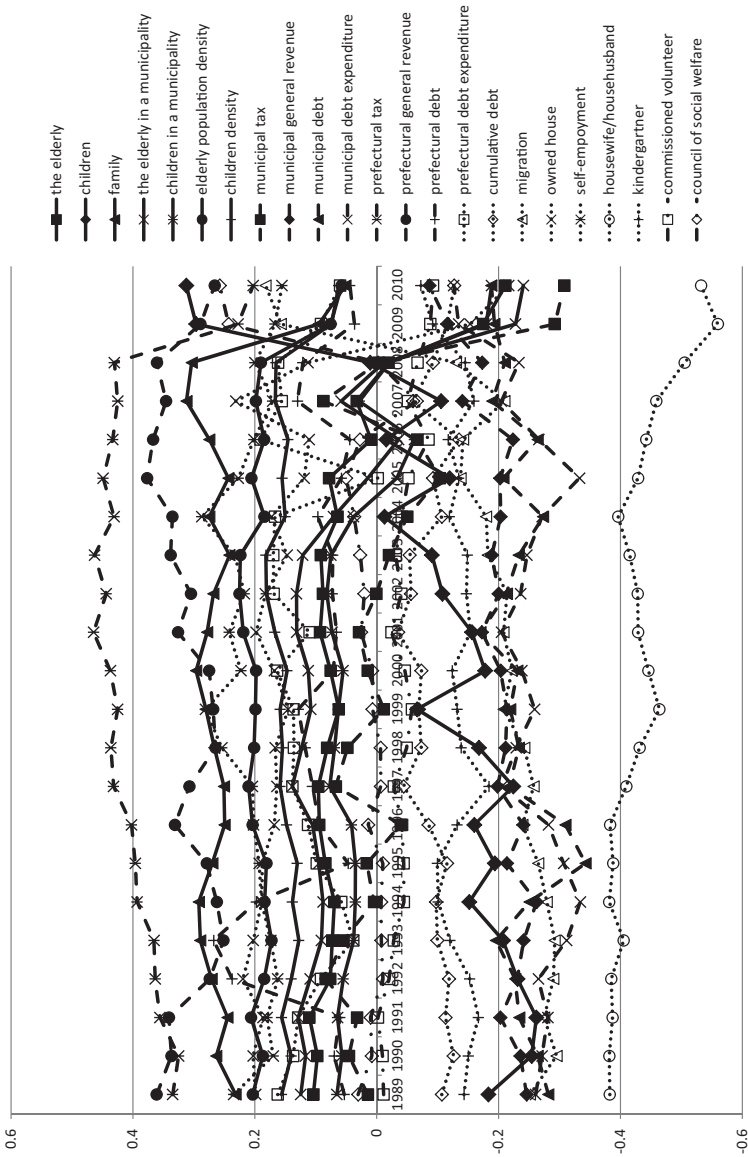


Figure 3. Loading of the Third Principal Component

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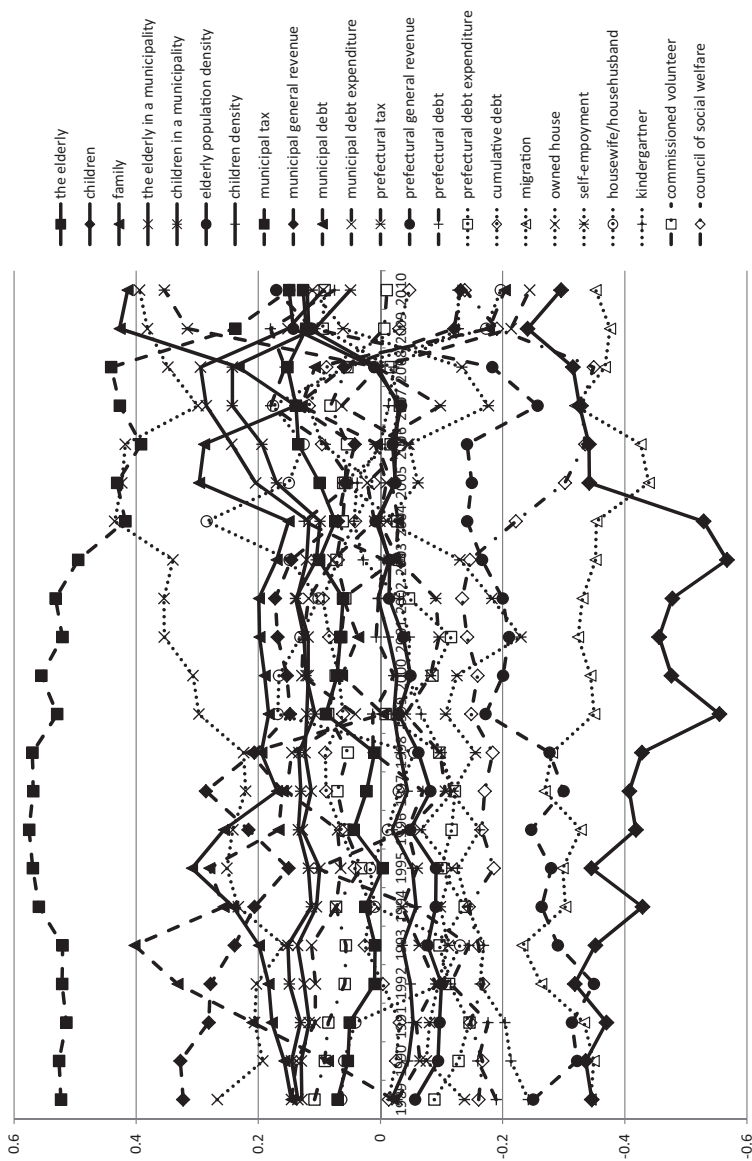


Figure 4. Loading of the Fourth Principal Component