Regional Characteristics of Housing Loss Risk during COVID-19

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Abstract_ *In Japan, the decrease in homelessness is attributed to the adoption of a narrow definition focusing solely on rough sleepers. However, by adopting a broader conceptualization similar to ETHOS, it is plausible that Japan harbors a significant homeless population comparable to that of other countries. Analyzing the factors contributing to the risk of housing loss is imperative for preventing rough sleeping. The Housing Security Benefit (HSB), a form of rent subsidy system for the unemployed, played a substantial role in mitigating the risk of housing loss during the COVID-19 pandemic. This study analyzes factors associated with HSB recipient rates at the city level across four dimensions: the housing market conditions, condition of the labor economy, safety nets, and demographic dynamics. Findings reveal a correlation between the prevalence of HSB recipients and the vulnerability of housing affordability, higher unemployment rates, and lower public assistance recipient rates. To reduce the risk of housing loss and prevent homelessness, the development of housing policies to increase affordability is necessary. HSB prevented housing loss due to unemployment resulting from the COVID-19 pandemic. Even after COVID-19 subsides, however, housing loss risk may persist. Effective housing policies are necessary even after the COVID-19 pandemic subsides.*

Keywords_ *Housing loss risk, Regional characteristics, COVID-19, Housing Security Benefit, Housing affordability*

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Introduction

Enhancing the welfare system is key to reducing the number of people experiencing homelessness. Stephens and Fitzpatrick have pointed out that countries with welfare regimes characterized by high levels of poverty and inequality tend to exhibit higher levels of homelessness (Stephens & Fitzpatrick, 2007). This claim is supported by the comparative study conducted by Benjaminsen and Andrade (2015), which used the annual prevalence of shelter use as an indicator to compare levels of homelessness in the United States—a prototypical liberal welfare state—and Denmark—a prototypical social democratic welfare state—revealing that the annual prevalence in Denmark was only one-third of that in the United States.

When focusing on welfare systems, as Benjaminsen points out, it is necessary not only to consider overall tendency such as the extent of welfare provision but also to take into account many different subsystems that constitute the welfare system, such as housing policy and income security, and to examine country-specific policy developments and their impact on homelessness (Benjaminsen, 2024). Japan is one of the few countries that has successfully reduced homelessness. According to OECD estimates, homelessness increased in many developed countries from 2010 to 2020[1], with a few exceptions such as Finland and Norway. By contrast, homelessness in Japan has decreased by over 90% in the past 20 years, from 25 296 people in 2003 to 2 591 in 2025 (Ministry of Health, Labour and Welfare, 2025). One of the factors contributing to the decrease in homelessness in Japan is the introduction of various employment support policies, such as the establishment of facilities called "Self-Reliance Support Centers," which aim to assist homeless individuals in finding employment. Further, the general public assistance program called *seikatsu hogo*, a form of general public assistance for the poor that facilitates transition to stable residences, has had a large impact (Kiener and Mizuuchi, 2018). In a comparison with Supplemental Security Income (SSI) in the United States, Goto claims that the generality, comprehensiveness, and expeditiousness that characterize Japan's *seikatsu hogo* contributed to reducing homelessness (Goto et al., 2022).

Until the 1990s, however, *seikatsu hogo* was not actively applied to people experiencing homelessness. This was due in part to the perception that those deemed capable of working were not making sufficient efforts to do so, as well as the reluctance of local governments to provide support to those without resident registration. In response to the sharp increase in street homelessness in the 2000s, the administration of *seikatsu hogo* became more flexible. In particular, during the global financial crisis of 2008, when an increasing number of people lost their

[1] OECD Affordable Housing Database, HC3.1 Homeless population estimates. Available at: (https://www.oecd.org/els/family/HC3-1-Homeless-population.pdf)

housing, eligibility criteria for *seikatsu hogo* were relaxed, helping to prevent a further rise in the number of rough sleepers (Yamada et al., 2024). In this way, it can be argued that the strengthening of the welfare system has played a significant role in reducing people experiencing homelessness in Japan.

False Dawn?

However, Japan's homelessness numbers cannot be directly compared with those of other countries. Japan officially defines homelessness as sleeping on the street or in a park[2], often labeled as "sleeping rough" in European countries. The European Typology on Homelessness and Housing Exclusion (ETHOS) proposed by the European Federation of National Organisations Working with the Homeless (FEANTSA) considers people in shelters or emergency accommodation as potentially "homeless," as well as people living in insecure accommodation and those living under threat of eviction. The ETHOS typology offers countries and researchers options for which categories to include and which to exclude as "homeless," and enables comparability by definitional category. Furthermore, a revised version of ETHOS has been proposed, which explicitly rejects the conflation of homelessness with rough sleeping and incorporates situations such as unwillingly staying with family or friends, as well as living in conditions that are detrimental to health and well-being (Pleace & Hermans, 2020). In light of such international discussions, Japan's definition would be considered quite narrow, as it focuses only on people with the most extreme lack of shelter, "rough sleepers." (Okamoto and Bretherton, 2023). Alternatively, in a recent internet survey of 140 000 Japanese people, Kakita found that with a broader definition inclusive of emergency accommodation and insecure housing that the rate of "homelessness" in Japan was 5.2% (Kakita et al., 2022). This figure is much more comparable to rates of homelessness in the US and in European countries.

Homelessness, understood in this broader sense, functions as a "reserve army" for homelessness in the narrow sense, understood here as rough sleepers. In Japan, rough sleepers are often people who used to live in housing directly linked to their employment, such as company dormitories (Iwata, 2003). When the people living in such housing become unemployed, they are put at high risk of losing their place to live and becoming rough sleepers. In addition, among low-wage workers who have lost their housing, many sleep in internet cafes (Obinger, 2009). Yet even they may become rough sleepers if their income dries up and they cannot even afford to stay in internet cafes anymore. It follows that if one focuses exclusively on the

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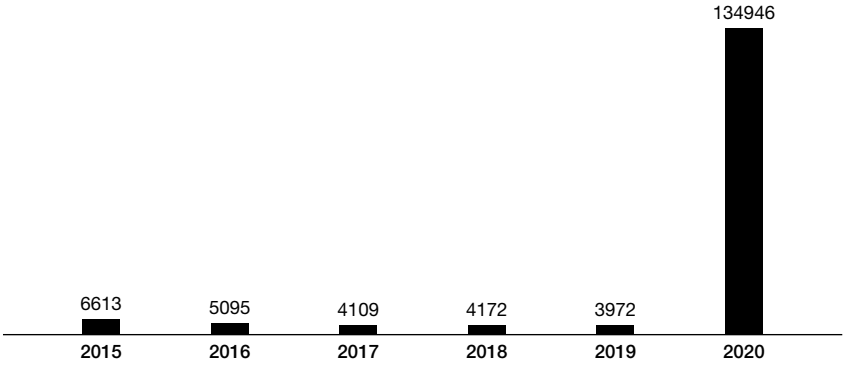
2 Law on Special Measures for Self-Sufficiency Support for Homeless People (*hōmuresu no jiritsu no shien tou ni kansuru tokubetsu sochi ho*)

low numbers of rough sleepers, the risk of losing housing will go unaddressed, and opportunities for taking preventive measures will be missed. Thus, in examining the policy challenges to address the phenomenon of rough sleepers, the factors that contribute to the broader risk of housing loss should also be considered.

In Japan, the unfavorable economic situation resulting from the COVID-19 pandemic has further increased the risk of housing loss. This is evidenced by the dramatic increase in the number of Housing Security Benefit (HSB) recipients. Implemented in 2015 to promote employment and improvement of livelihoods of people in need, HSB is a rent subsidy system based on the *Act on Support for Self-Reliance of Needy Persons* (*seikatsu konkyusya jiritsu shien ho*). It pays a rental equivalent amount, capped at the total housing subsidy provided by *seikatsu hogo* for a period of three to nine months to low-income unemployed individuals. In other words, people receiving HSB would not be able to pay their rent without the benefit and would therefore be at risk of losing their homes. The recipients of HSB are limited to unemployed adults, yet given the absence of a universal rental subsidy system in Japan, this scheme plays a crucial role in mitigating the risk of housing loss.

However, because HSB had strict conditions for use, it did not reach enough people who were at risk of losing their housing. That said, in July 2020, the Japanese government, concerned about increased numbers of people losing their homes due to the COVID-19 pandemic, significantly relaxed the conditions for HSB eligibility, including expanding coverage to individuals on temporary leave and extending the duration of benefits. Due to this special measure to address the COVID-19 pandemic, HSB has been extended to cover a broader range of people facing the risk of losing their housing. As shown in Fig. 1, the number of HSB recipients grew from 3972 in 2019 to 134946 in 2020, a more than 30-fold increase. This study analyzes the factors involved in housing loss risk, as indicated by the number of HSB recipients.

Fig. 1 Number of HSB recipients



Source: Ministry of Health, Labour and Welfare

As discussed above, Japan's official definition of homelessness is limited to rough sleepers. However, several studies suggest the existence of a broader population experiencing housing loss that is not confined to this narrow category. The increase in recipients of HSB during the COVID-19 pandemic revealed the magnitude of housing loss risk. In light of these considerations, the decline in people experiencing homelessness described in the previous section may represent a false dawn. This study, therefore, analyzes the factors contributing to housing loss risk in Japan, using the number of HSB recipients as an indicator.

Regional Characteristics of Housing Loss Risk

There are a variety of approaches to elucidating factors associated with the risk of housing loss. One common approach is to examine individuals' factors for housing loss risk, such as health status, work history, and the socioeconomic status of the family of origin. However, ascertaining such individual factors is difficult, given the absence of administrative data on the personal attributes of HSB recipients. Therefore, to overcome this difficulty, this study focuses on regional-level structural factors related to HSB recipient rates in each city. In their analysis of the regional characteristics of homelessness rates, Elliott and Krivo argue that unfavorable structural conditions are necessary precursors to widespread homelessness, regardless of the extent of personal problems among those negatively affected by them (Elliott and Krivo, 1991: 114). As to why the scale of the problem differs so much across urban contexts, Lee argues that it is necessary to adopt a structural perspective that treats the homelessness rate as a function of other attributes of communities (Lee et al., 2003: 336). Recently, Colburn and Aldern published an important study that explains the variation in homelessness rates across cities using various indicators that reflect urban characteristics, based on a strategy that emphasizes focusing on differences between cities rather than between individuals (Colburn and Aldern, 2022).

As described below, numerous studies analyzing factors related to homelessness rates at the regional level have been conducted in Europe and the United States. In Japan, too, some studies have examined the relationship between various regional-level characteristics and homelessness (Furugori, 2014), but they take a relatively large region called a "prefecture" as their unit of analysis, and the homelessness numbers at the street level as dependent variables. As mentioned, the number of homeless people on the streets in Japan is extremely small and is not an adequate proxy for the risk of housing loss. In addition, while poverty is deeply related to homelessness and housing loss risk, poverty is not the same as homelessness, although some studies use regional-level poverty rates as dependent variables (Tanabe and Suzuki, 2018). This study aims to identify regional-level

factors associated with the increased risk of housing loss in Japan during the COVID-19 pandemic, drawing on previous research from Europe and the United States that has suggested associations between homelessness rates and the following factors.

Housing markets

Transformations in the housing market have particularly undermined housing affordability for low-income households, raising concerns about increasing rates of homelessness. Lima et al. (2023), in their analysis of the financialization of the Private Rental Sector in Ireland, argue that neoliberal marketization has driven up private rental prices, while austerity in social housing policy has contributed to the rise in homelessness. Similarly, interviews with professionals from the municipal social service authorities in Malmö, Sweden, reveal that the marketization of housing policy has reduced housing affordability for the poor, resulting in a contradiction wherein the welfare system is compelled to address housing problems (Sandberg & Listerborn, 2023). In Germany as well, high rents and low vacancy rates among small flats have been reported as contributing factors to the increase in homelessness (Kröll & Farhauer, 2012).

In the United States as well, a longstanding body of research has established a link between high rents and elevated rates of homelessness. Using homelessness numbers compiled by the US Department of Housing and Urban Development (HUD) in 1984, Bohanon found that the median rent in each city analyzed was correlated with the rate of homelessness among those in poverty (Bohanon, 1991). Additionally, in their analysis of the determinants of homelessness rates in metropolitan areas based on S Night Data from the 1990 census, Lee also reports that rent levels strongly contributed to the homelessness rate (Lee et al., 2003). Indeed, numerous other studies have identified the relationship between rent levels and homelessness rates (Honig and Filer, 1993; Early and Olsen, 2001; Quigley and Raphael, 2001; Raphael, 2010; Byrne et al., 2013). Through estimates of the relationship between rent and homelessness rates by metropolitan area, recent studies have found that large increases in rent are associated with increases in homelessness in New York, Los Angeles, Washington DC, and Seattle (Glynn and Fox, 2019), and that, when the median rent exceeds 32% of median income, the expected homelessness rate in the region increases sharply (Glynn et al., 2021). The argument of Colburn and Aldern (2022), which is considered one of the most important studies in recent homelessness research, is that the variation in homelessness rates between cities can be explained not by individual and cultural factors, but by rent levels and vacancy rates.

The fact that high rent levels are contributing to an increase in homelessness highlights the importance of assessing government rent control policies. According to Kholodilin (2022), who reviewed 60 studies across 18 countries on the effects of rent regulation, such policies are effective in reducing or slowing the growth of rents. However, they may also have negative consequences for housing mobility and quality. It has long been argued that rent control can lead to local housing shortages and, consequently, an increase in homelessness (Troutman et al., 1999). However, if, as Troutman argues, "the problem with homelessness is not the existence of housing, but the allocation of housing," then rather than viewing rent regulations alone as the problem, emphasis should be placed on increasing the affordability of housing for low-income people. Research examining the impact of cuts to rent subsidies for low-income beneficiaries in the United Kingdom has found that such reductions led to greater housing instability. These effects include increases in evictions, higher proportions of people living in temporary housing arrangements, and rises in both statutory homelessness and actual rough sleeping (Fetzer et al., 2019). Another study found that the transition from Housing Benefit to Universal Credit in the UK has heightened the risk of rent arrears—particularly for people with disabilities and claimants moving from Housing Benefit to Universal Credit—due to factors such as longer waiting periods and the shift to direct payment systems (Williams et al., 2022). These findings resonate with earlier studies that found a lack of low-rent housing (Elliot and Krivo, 1991), low vacancy rates (Quigley and Raphael, 2001), and low availability of subsidized housing for low-income people (Early and Olsen, 2002) are associated with high rates of homelessness in a region. Research demonstrating the correlation between investments in permanent supportive housing (PSH) and reduced regional rates of homelessness also underscores the importance of housing policy (Byrne et al., 2014; Corinth, 2017).

Labor economy, safety nets, and demographic dynamics

O'Sullivan et al. (2020) criticize medical research for framing homelessness primarily as a consequence of mental ill-health and substance misuse, arguing that such an approach distorts our understanding of the root causes of homelessness. They contend that homelessness should instead be understood as a structural issue. In addition to housing market conditions, one of the key factors expected to be associated with homelessness rates is the state of the labor economy, particularly as it relates to poverty. An analysis of three large-scale datasets from the United Kingdom found a strong association between poverty—especially poverty experienced during childhood—and the risk of homelessness (Bramley & Fitzpatrick, 2017). Similarly, a qualitative study based on interviews with individuals using three homelessness services in England identified socially and economically disadvantaged childhood conditions, such as poverty, as major contributing factors to homelessness (Mabhala et al., 2017).

When examining the relationship between poverty and homelessness within the context of regional characteristics, dynamics of the labor economy—such as unemployment rates—are particularly relevant. Gould and Williams (2010), in their analysis of county-level factors associated with shelter admissions in the state of Missouri, United States, found that regions with higher unemployment rates had higher homelessness rates among families admitted to shelters. Many other studies have reported that unemployment rates are related to homelessness rates (Bohanon, 1991; Burt, 1992; Fargo et al., 2013). In addition to unemployment rates, a county's taxable sales (Gould and Williams, 2010) and regional employment structures, such as its number of manufacturing workers (Burt, 1992), have also been found to be related to homelessness rates.

The state of local safety nets is also expected to be associated with homelessness rates. For example, a study analyzing data from 323 local authorities in England found that declining economic activity, along with reductions in welfare spending—particularly on social care and housing services—was strongly associated with increases in homelessness applications (Loopstra et al., 2016). Similarly, in the United States, Elliott and Krivo (1991) report that higher budgets for psychiatric care are strongly linked to low regional homelessness rates (Elliott and Krivo, 1991). Similarly, many studies report that financial investment in mental health care is inversely associated with homelessness rates (Bohanon, 1991; Honing and Filer, 1993). Increasing spending on a wide range of mental health care measures, including inpatient care, may prevent homelessness among people with mental illnesses. Some studies note that, in addition to spending on mental health care, access to General Assistance (public assistance for unemployed single adults) is also related to homelessness rates (Burt, 1992; Richard and Rule, 2024), while others argue that, compared to economic and housing conditions, safety net indicators cannot explain the determinants of homelessness rates (Fargo et al., 2013).

Moreover, numerous studies have shown that demographic factors—particularly the high proportion of single-person households—are key determinants of urban homelessness rates (Lee et al., 2003; Burt, 1992; Byrne et al., 2013). Single-person households are likely to be at risk of homelessness due to the difficulty they face in securing housing. Additionally, Byrne found that the ratio of the population belonging to the baby boomer generation (born between 1946 and 1964) was also associated with homelessness rates (Byrne et al., 2013).

Based on previous studies that have analyzed factors associated with homelessness rates, it is essential to consider not only the housing market conditions but also regional factors such as the labor economy, safety nets, and demographic dynamics when analyzing the regional characteristics of housing loss risk.

Characteristics of homelessness in Japan

Meanwhile, Japanese research has determined unemployment to be the main cause of homelessness. In particular, during the 1990s, it was noted that day laborers working in *yoseba*[3] were forced into rough sleeping when they lost their jobs (Fowler, 1996; Aoki, 2006). Day laborers working in *yoseba* are mostly employed by the construction industry, so regions with a large number of workers in the construction industry should be expected to have high rates of homelessness. However, since 2000, the study of homelessness in Japan has changed in recognition that rough sleeping is not unique to day laborers working in the construction industry; it is also experienced by people engaged in part-time and non-regular employment, for example, through staffing agencies (Ezawa, 2002; Aoki, 2003). Because these people are often engaged in the manufacturing industry, homelessness rates can be expected to be high in regions with high levels of employment in the manufacturing industry, even today. Based on prior research on homelessness in Europe, the United States, and Japan, this study treats housing market conditions, safety nets, labor economy conditions, including industry composition, and demographic dynamics as regional-level factors associated with the risk of housing loss.

Methods

To identify regional-level factors associated with the number of HSB recipients in each city, we conducted multiple regression analysis using independent variables reflecting four characteristics: housing market, labor economy, safety net, and demographics. In prior research, some analyses of the regional characteristics of the homelessness rate were conducted using two categories: metropolitan and non-metropolitan areas (Fargo et al., 2013; Byrne et al., 2013). Cities in Japan are divided into ordinance-designated cities: large cities that meet criteria such as a population of 500 000 or more (20 cities nationwide as of 2020); core cities, of a similar size (60 cities nationwide); and general cities (712 cities nationwide). In addition, there are 23 special wards in central Tokyo. In this analysis, these 815 municipal districts were divided into metropolitan areas (Tokyo special wards, ordinance-designated cities, and core cities, for a total of 103 cities) and non-metropolitan areas (712 cities).

Dependent variables

This study uses data on the number of HSB recipients by city. Although it was introduced in 2015, HSB was only utilized by about 4 000 to 7 000 people nationwide annually for the five years up to 2019. However, because of concerns about increases in the number of those in poverty losing their homes due to the impact

[3] *Yoseba* is a term used to describe a space where many day laborers reside and look for work.

of COVID-19, the Ministry of Health, Labour and Welfare relaxed the conditions for use, resulting in a sharp increase in the number of users, to 134 946 in 2020. In other words, even though pre-2019 HSB and 2020 HSB are the same system, the quality of the system can be said to have changed dramatically as a result of COVID-19. In this study, we analyze city-specific data on the number of HSB users in 2020 provided by the Ministry of Health, Labour and Welfare.

HSB is implemented by prefectures, cities, and Tokyo special wards across the country. Because prefectures have jurisdiction over rural regions, including towns and villages, this study uses only the number of HSB recipients provided by cities and special wards. In 2020, the average number of HSB recipients in the 815 cities implementing the system was 162 people, but the standard deviation was 523.8 people, a large variance. To ensure data stability, this study limits the analysis to the 331 cities where the system was used by 50 or more people. Using population numbers reported in the 2020 census, we calculated the number of HSB recipients per 10 000 people in these 331 cities and set it as the dependent variable. Table 1 shows descriptive statistics for the number of HSB recipients per 10 000 people in the 331 cities included in the analysis.

Table 1. The number of HSB recipients rate per 10 000 people

	Total (n=331)		Metropolitan areas (n=100)		Non-metropolitan areas (n=231)	
	Number of cities	%	Number of cities	%	Number of cities	%
Under 5 people	41	12.4	18	18.0	23	10.0
5-10 people	134	40.5	32	32.0	102	44.2
10-15 people	84	25.4	15	15.0	69	29.9
15-20 people	31	9.4	14	14.0	17	7.4
Over 20 people	41	12.4	21	21.0	20	8.7
Mean	12.3		15.2		11.0	
Standard Deviation	10.1		14.5		7.1	
Minimum	2.0		2.0		2.7	
Maximum	79.9		79.9		65.3	

Independent variables (Table 2)

Housing market conditions

Rent levels, low-rent housing ratios, public housing ratios, and vacancy rates were used as independent variables to indicate housing market conditions. Given that single-person households constitute most of the HSB recipients and homeless in

Japan, the average rent[4] for tenants of rentals with an area of 29 square meters or less was aggregated from the results of a 2018 survey by the Ministry of Internal Affairs and Communications[5]. Additionally, low-rent housing was defined as rental housing with rents below the average rent in each city, and the ratio of low-rent housing to the total number of housing units was calculated. Vacancy rates and public housing rates were also calculated from the ratios of the number of vacant houses and public housing units to the total number of housing units.

Condition of the labor economy

Unemployment rate, average income, irregular employment rate, ratio of construction workers, and ratio of manufacturing workers were used as independent variables indicating the condition of the regional labor economy. The unemployment rate was calculated as the percentage of completely unemployed people in the labor force, as reported in the 2020 census. Using tax data from the Ministry of Internal Affairs and Communications[6], we calculated average income as total income per taxpayer in each city. The irregular employment rate was calculated as the ratio of temporary and part-time workers to the number of employees, as reported in the 2020 census. The ratio of workers in the construction and manufacturing industries was calculated as the percentage of construction and manufacturing workers out of the total number of employees, as reported in the 2020 census.

Safety nets

Public welfare expenditures, public health expenditures, and public assistance recipient rates were used as independent variables related to safety nets. Using each city's 2020 financial statements as reported by the Ministry of Internal Affairs and Communications[7], we calculated the amount of public welfare expenditures and public health expenditures[8] as a percentage of total municipal expenditures. Using the results of a survey by the Ministry of Health, Labour and Welfare[9], and data obtained directly.

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4 In previous studies conducted in the United States, the median rent is commonly utilized as an independent variable. However, in Japan's official statistics, the median is not disclosed. Therefore, in this analysis, the mean value was employed instead.

5 Ministry of Internal Affairs and Communications (2018) *Housing and Land Survey.*

6 Ministry of Internal Affairs and Communications (2020) *Survey on Taxation Status of Municipalities (shichousonzei kazei joukyou tou no shirabe 2020).*

7 Ministry of Internal Affairs and Communications (2020) *Survey of Financial Statements by Municipalities (shichousonbetsu kessann joukyou shirabe 2020).*

8 In previous studies conducted in the United States, the expenditure on mental health care is commonly utilized as an independent variable. However, in Japan's official statistics, the mental health care expenditure is not disclosed. Therefore, in this analysis, the overall public health expenditure was employed instead.

9 Ministry of Health, Labour and Welfare (2020) *National Survey on Public Assistance Recipients.*

Table. 2 Descriptive Statistics for Study Variables

	Total (n=331)		Metropolitan areas (n=100)		Non-metropolitan areas (n=231)	
	Mean	SD	Mean	SD	Mean	SD
Housing Market Conditions						
Average Rent (yen)	45,777	10,243	50,292	14,558	43,822	6,827
Low-rent Housing Ratios (%)	61.09	10.45	59.37	9.71	61.84	10.68
Vacancy Rates (%)	13.02	4.15	12.86	2.86	13.09	4.60
Public Housing Ratios (%)	3.09	2.24	3.53	1.79	2.91	2.39
Condition of the Labour Economy						
Unemployment Rate (%)	3.90	0.66	3.82	0.62	3.94	0.68
Annual Average Income (1,000 yen)	3,325	706	3,625	1,053	3,195	426
Irregular Employment Rate (%)	34.92	3.53	32.90	4.18	35.80	2.78
Ratio of Construction Workers (%)	6.99	1.73	6.66	1.81	7.14	1.68
Ratio of Manufacturing Workers (%)	16.05	7.76	12.72	5.81	17.49	8.06
Safety Nets						
Proportion of Public Welfare Expenditure to Total Expenditure (%)	32.67	5.30	34.34	5.90	31.95	4.85
Proportion of Public Health Expenditure to Total Expenditure (%)	3.25	1.22	3.22	1.10	3.26	1.26
Public Assistance Recipient Rates (%)	1.53	0.90	1.95	0.94	1.34	0.81
Demographic Dynamics						
Ratio of Single-person Households (%)	36.71	7.49	41.76	8.64	34.52	5.70
Ratio of First Baby Boomers: 71-73 years old (%)	4.62	0.77	4.38	0.71	4.72	0.78
Ratio of Second Baby Boomers: 46-49 years old (%)	6.36	0.54	6.35	0.50	6.37	0.55

From each city, we calculated public assistance recipient rates as the ratio of recipients to the total population.

Demographic dynamics

The ratio of single-person households and the ratio of baby boomers were used as independent variables related to demographic dynamics. The ratio of single-person households was calculated as a percentage of the total number of households as reported in the 2020 census. As for baby boomers, the term is used to describe people born from 1946 to 1964 in the US, but in Japan, people born between 1947 and 1949 are called “first baby boomers,” while those born between 1971 and 1974 are called “second baby boomers.” For this study, we defined those aged 71 to 73 years old in 2020 as “first baby boomers,” while we defined 46-to-49-year-olds as “second baby boomers,” and their ratios were calculated as a percentage of the population, as reported in the census.

Results (Table 3)

Housing markets

Of the variables related to the housing market (rent level, low-rent housing, vacant housing, public housing), rent level was found to be significantly associated with the HSB recipient rate. Regions with higher average rents tended to have higher HSB recipient rates (b=0.359, $p<0.001$). This was evident in non-metropolitan areas, but no significant association was observed in metropolitan areas. Furthermore, in metropolitan areas, lower HSB recipient rates tended to be associated with higher ratios of low-rent housing to the total number of housing units (b=-0.119, $p<0.1$). Neither the vacancy rate nor the proportion of public housing was observed to be related to HSB recipient rates.

Labor economy

Among variables related to the labor economy (unemployment, income, irregular employment, construction workers, and manufacturing workers), unemployment was found to be significantly associated with HSB recipient rates. Regions with higher unemployment rates tended to have higher HSB recipient rates (b=0.255, $p<0.001$). This trend was observed in both metropolitan and non-metropolitan areas. Average income, the proportion of irregular employees, and the ratio of construction and manufacturing workers were not significantly associated with HSB recipient rates.

Safety nets

Of the variables related to safety nets (public welfare expenditures, public health expenditures, and public assistance recipient rates), public assistance recipient rates were found to be significantly related to HSB recipient rates. Regions with higher public assistance recipient rates tended to have lower HSB recipient rates (b=-0.186, $p<0.05$). This trend was significant in metropolitan areas, but no significant association was observed in non-metropolitan areas. There were no significant relationships between HSB recipient rates and public welfare expenditures or public health expenditures.

Demographic dynamics

All variables related to demographic dynamics were significantly associated with HSB recipient rates. Regions with higher ratios of single-person households tended to have higher HSB recipient rates (b=0.457, $p<0.001$). This trend was observed in both metropolitan and non-metropolitan areas. As for baby boomers, a negative relationship was observed for both first and second baby boomers, as regions with a higher proportion of baby boomers had lower HSB recipient rates. This trend was significant in non-metropolitan areas, but no significant relationship was observed in metropolitan areas.

Table. 3 Factors Associated with HSB Recipient Rate

	Total		Metropolitan Areas		Non-metropolitan Areas	
	β	B (95% CI)	β	B (95% CI)	β	B (95% CI)
Housing Market Conditions						
Average Rent	0,359***	0,000 (0,000 - 0,001)	-0,091	0,000 (-0,001 - 0,000)	0,312**	0,000 (0,000 - 0,001)
Low-rent Housing	0,016	0,015 (-0,063 - 0,094)	-0,119†	-0,180 (-0,389 - 0,029)	0,066	0,045 (-0,031 - 0,120)
Vacancy Rates	-0,006	-0,020 (-0,364 - 0,324)	0,016	0,081 (-0,786 - 0,949)	-0,034	-0,072 (-0,411 - 0,268)
Public Housing	-0,040	-0,183 (-0,595 - 0,229)	-0,012	-0,095 (-1,280 - 1,090)	-0,007	-0,020 (-0,411 - 0,371)
Condition of the Labour Economy						
Unemployment Rate	0,255***	4,000 (2,279 - 5,720)	0,333**	7,783 (2,201 - 13,365)	0,229**	2,492 (0,839 - 4,145)
Average Income	0,004	0,000 (-0,002 - 0,002)	0,055	0,001 (-0,003 - 0,005)	-0,165	-0,003 (-0,006 - 0,001)
Irregular Employment	0,066	0,191 (-0,162 - 0,543)	0,016	0,054 (-0,788 - 0,896)	0,078	0,203 (-0,170 - 0,576)
Construction Workers	-0,012	-0,069 (-0,724 - 0,586)	-0,158	-1,262 (-3,155 - 0,631)	-0,040	-0,169 (-0,821 - 0,484)
Manufacturing Workers	0,008	0,011 (-0,133 - 0,155)	-0,020	-0,050 (-0,434 - 0,335)	-0,074	-0,069 (-0,212 - 0,073)
Safety Nets						
Public Welfare Expenditure	0,085	0,168 (-0,066 - 0,402)	0,096	0,235 (-0,216 - 0,686)	0,070	0,107 (-0,162 - 0,376)
Public Health Expenditure	-0,003	-0,022 (-0,698 - 0,654)	0,039	0,514 (-1,227 - 2,255)	-0,001	-0,006 (-0,660 - 0,648)
Public Assistance Recipient	-0,186*	-2,133 (-3,791 - -0,475)	-0,274*	-4,270 (-8,079 - -0,462)	-0,169	-1,512 (-3,361 - 0,337)
Demographic Dynamics						
Single-person Households	0,457***	0,625 (0,411 - 0,840)	0,655***	1,100 (0,541 - 1,659)	0,361***	0,465 (0,248 - 0,682)
First Baby Boomers	-0,156*	-2,132 (-3,769 - -0,495)	-0,154	-3,121 (-8,618 - 2,377)	-0,213**	-2,077 (-3,587 - -0,567)
Second Baby Boomers	-0,162**	-3,076 (-5,095 - -1,057)	0,061	1,779 (-3,889 - 7,447)	-0,203**	-2,652 (-4,641 - -0,664)
Intercept		-21,9 (-46,8 - 3,0)		-40,6 (-113,5 - 32,4)		-1,7 (-26,3 - 22,9)
Adjusted R-squared Value		0,543		0,665		0,379

****p<0.001 **p<0.01 *p<0.05 †p<0.1*

Discussion

This study analyzed regional-level factors related to the HSB recipient rate. HSB recipients are people who, without the subsidy, would be unable to pay rent, consequently facing the risk of losing their housing and, in some cases, becoming rough sleepers. Furthermore, in contrast to research in Europe and the United States, Japanese research on homelessness has rarely analyzed the regional characteristics of homelessness rates. The identification of regional-level structural factors associated with HSB recipient rates can aid in the formulation of policy strategies to prevent homelessness. This study examined the relationship between HSB recipient rates and four regional-level characteristics: housing market, labor economy, safety nets, and demographic dynamics. Among these factors, the housing market, labor economy, and safety net can be utilized for policy interventions.

First, regarding the housing market, high regional rent levels were correlated with HSB recipient rates. However, while this correlation was significant in non-metropolitan areas, it was not observed in metropolitan areas. That said, in metropolitan areas, low proportions of low-rent housing correlated with higher HSB recipient rates. Both high rent levels and scarce low-rent housing are housing affordability issues. The finding that low housing affordability increases housing loss risk at the regional level accords with prior studies of the regional characteristics of homelessness rates in Europe and the United States (Lima et al., 2023; Sandberg & Listerborn, 2023; Glynn and Fox, 2019). Therefore, reducing housing loss risk and preventing homelessness may require establishing regulations on rent increases or other means for expanding the supply of low-rent housing. In 2017, Japan's housing safety net system was revised to implement rent subsidies and the registration of housing for people who require special consideration in obtaining housing. However, the housing registration initiative has not progressed adequately, making housing policy necessary to prevent the risk of housing loss from becoming a reality.

As for labor economy conditions, high unemployment rates were strongly associated with HSB recipient rates. However, no relationship was observed with regional average income or the ratio of irregular employees. HSB eligibility conditions have been relaxed in the wake of the COVID-19 pandemic. In other words, HSB became more of a livelihood support system for people who lost their jobs due to the COVID-19 pandemic, rather than a pure rent subsidy for the general population. This is likely to have strengthened the relationship between the HSB recipient rate and the unemployment rate, indicating that HSB was effective for those facing housing loss risk due to unemployment during COVID-19. However, in April 2023, the Ministry of Health, Labour and Welfare began a review of the special measures implemented in response to COVID-19, to consider whether to abolish some of the measures enacted to ease HSB eligibility requirements and partially shorten the

benefit period. There are concerns that as this review progresses, the capacity for HSB to address the risk of housing loss due to unemployment will be weakened. Moreover, housing loss risk is not a phenomenon limited to COVID-19. In Japan, where a universal rental subsidy system is not in place, the role played by HSB in mitigating housing loss risk during COVID-19 conditions suggests the necessity of establishing a universal rent subsidy system.

Regarding regional labor economy conditions, no correlation was found between the ratio of construction workers or manufacturing workers and HSB recipient rates. In Japan, homelessness was traditionally thought to largely involve people working in the construction and manufacturing industries, but in recent years, homelessness has no longer been limited to occupations in construction and manufacturing. To be sure, industries such as the restaurant industry and the tourism industry were hit hard during COVID-19, thus, broadening the spectrum of industries vulnerable to the risk of housing loss beyond the construction and manufacturing sectors. In other words, the COVID-19 pandemic seems to have accelerated the diversification of pathways to homelessness in Japan.

Regarding safety nets, a negative relationship was found between the public assistance recipient rate and the HSB recipient rate. Previous US studies have reported similar findings (Burt, 1992; Richard and Rule, 2024). The fact that regions with higher public assistance recipient rates have lower HSB recipient rates suggests that the receipt of public assistance prevented the risk of housing loss from becoming a reality. Goto has argued that public assistance contributes to reducing homelessness and fulfills a significant role from the perspective of preventing homelessness (Goto et al., 2022). However, while the negative association between the public assistance recipient rate and HSB recipient rate was significant in metropolitan areas, it was not observed in non-metropolitan areas. While public assistance strongly contributes to reducing homelessness and alleviating poverty, there remains a strong stigma attached to receiving benefits. This stigma is more pronounced in non-metropolitan areas, and as a result, it likely weakened the correlation between public assistance recipient rates and HSB recipient rates in those regions. In order for public assistance to make an effective contribution to the prevention of homelessness, the elimination of this stigma is a major challenge.

Based on the findings of this study, three key measures are suggested to reduce the risk of housing loss: improving housing affordability, advancing general unemployment countermeasures, and expanding public assistance as a safety net against poverty. Fitzpatrick et al. (2021) proposed a five-stage typology of homelessness prevention: Universal, Upstream, Crisis, Emergency, and Repeat. The

three implications identified in this study correspond to the Universal stage of prevention, underscoring the importance of preventing or minimizing the risk of homelessness across the general population.

However, it must be noted that this study merely used the number of Housing Security Benefit (HSB) recipients as a proxy indicator for the risk of housing loss. Since the HSB provides rent subsidies to unemployed individuals, it can be more appropriately classified as a Crisis-stage preventive measure. Therefore, it is also essential to examine which groups of people utilized the HSB and whether it enabled them to avoid housing loss. Due to limitations in the available data, this study was unable to investigate this aspect. Nonetheless, assessing the preventive effectiveness of the HSB itself remains an important topic for future research.

Conclusion

In Japan, the number of rough sleepers has declined since 2000, largely due to the more flexible application of public assistance to people experiencing homelessness. However, because the official definition of homelessness in Japan remains narrow, it is likely that a significant number of individuals in housing-insecure situations are not recognized by the government. Therefore, it is essential to implement preventative measures that address a broader spectrum of housing loss risks beyond just rough sleeping. This study utilized findings from previous research on the regional characteristics of homelessness rates to identify structural factors at the regional level associated with the risk of housing loss. The recipient rate of the HSB system, expanded through special measures in response to the COVID-19 pandemic, served as a proxy indicator for the risk of housing loss. The analysis showed that lower housing affordability, higher unemployment rates, and lower public assistance recipient rates were associated with higher HSB recipient rates. Reducing the risk of housing loss and preventing homelessness will require the development of housing policies to increase housing affordability. HSB recipients are individuals who, despite being at risk of losing their housing, have managed to avoid homelessness by receiving HSB assistance. From this perspective, the results of this study suggest that the expansion of HSBs helped prevent housing loss resulting from unemployment during the COVID-19 pandemic. Nevertheless, even after the COVID-19 pandemic subsides, the risk of housing loss may persist. Considering the role played by HSBs in mitigating the risk of housing loss during the pandemic, it is imperative to develop effective housing policies for non-pandemic times as well.

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