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Effects of Welfare Receipt on Well-being: Evidence from older people in Japan*

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Abstract

The purpose of this study is to verify whether receiving public assistance affects the well-being of the older people. When socially nondependency norms have formed, receiving public assistance may reduce well-being. The study focuses on older people in Japan, where public assistance is minimal. The results show that receiving public assistance has little effect on well-being for the older people but negatively affects the working-age population. The older people are likelier to not work, which may weaken the nondependency. Additionally, the heterogeneity in the relationship between the receipt of public assistance and well-being is confirmed by region.

Keywords: welfare receipt, well-being, Japan, older people

JEL classification: I31, I38, J14

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1. Introduction

This study aims to examine the impact of welfare receipts on the well-being of the older people. According to the standard labor supply model, income increases people's consumption opportunities and utility regardless of source. However, unemployment reduces well-being if people's social identity dominates the nondependency norm (e.g., Hetschko et al., 2020). In the case of welfare recipients, well-being may be lower in those who do not receive benefits because they do not earn their own livelihood.

Welfare recipients have traditionally been observed to bear psychological burdens as if they were negatively stigmatized by other members of society (Moffitt, 1983; Besley & Coate, 1992). According to Besley and Coate (1992), some recipients are unsure whether they are truly in need and are more likely to resent taxpayers. This so-called "welfare stigma" is frequently cited as the primary reason why many people do not apply for welfare even though they are eligible (Ko & Moffitt, 2022). Although stigma reduces abuse by increasing the cost of receiving benefits, it also has drawbacks, such as a lack of assistance available to those in need of public assistance. There is a growing interest in redistributive policies after economic shocks, such as those associated with globalization, digitalization, and the COVID-19 pandemic. If receiving welfare makes people unhappy, it may be necessary to reconsider the redistribution method, such as by considering implementing a basic income that is not contingent on eligibility for benefits. The present study examines the impact of welfare receipt on well-being by using micropanel data from the Japanese Study of Aging and Retirement (JSTAR).[1]

The contribution of using Japanese data is twofold. First, this study focuses on both the working-age population in the context of unemployment and the older generation. To pay for public assistance in Japan, the government deducts a minimum cost of living from the recipient's income. When a person's income, such as an old-age pension, disability pension, child support allowance, or unemployment allowance, falls below the minimum cost of living, they become eligible for public assistance. Thus, unlike other developed countries, Japan's welfare system includes low-income individuals, such as older people, persons with disability, the injured, single mothers, and the unemployed.[2] The older persons may receive public assistance due to, for example, nonpayment of the public pension in which they are obligated to participate in the working-age population. Consequently, welfare receipt by the older people may reduce well-being due to deviations from the nondependency norm and stigma issues.

Second, despite Japan's low public assistance coverage and numerous criticisms of the public assistance system, little analysis has been conducted due to data scarcity. According to

[1] The Japanese Study of Aging and Retirement (JSTAR) was conducted by the Research Institute of Economy, Trade and Industry (RIETI), Hitotsubashi University, and the University of Tokyo.
[2] See the website of the Ministry of Health, Labour and Welfare (https://www.mhlw.go.jp/stf/houdou/2r98520000004c72-att/2r98520000004ca7.pdf)

Tachibanaki and Urakawa (2006), the coverage rate is 16%–20% in Japan, 80% in the UK, 60%–67% in the US, and 37% in Germany, which is lower than in each developed country. The reasons for this are (1) the strict means test; (2) the duty of support, which requires relatives who can afford to help the needy to support them in the event of poverty; (3) ignorance of the welfare system and the information required for application; and (4) reluctance of exercising rights due to stigma (Tachibanaki & Urakawa, 2006). The stigma issue has received much attention in Japan because the 2012 case of a celebrity family member receiving welfare sparked criticism of the welfare system (Abe, 2018). Moreover, in a survey conducted by Yamada (2015), more than half of the respondents were critical of the welfare system. Beneficiaries who deviate from the social norm with public assistance rates of around 1% may experience lower well-being when exposed to criticism of the system (Lindbeck et al., 1999).

The results reveal several important findings. First, welfare receipt has little effect on older people's well-being. The older people are likelier not to work, which may undermine the nondependency norm. Second, the welfare receipt by the working-age population may negatively impact well-being, similar to previous studies. Third, the relationship between welfare receipt and well-being is heterogeneous across regions.

The remainder of this study is organized as follows. Section 2 summarizes previous studies. Section 3 describes the data used in the study. Section 4 presents the empirical strategy. Section 5 provides and discusses the results, and Section 6 summarizes this study.

2. Literature review

Several previous studies have shown the impact of unemployment on well-being. Unemployment affects subjective well-being and is related to life satisfaction and one's life evaluation. According to social identity theory (e.g., Tajfel & Turner, 2004), people form ideal self-images and place importance on belonging to a shared social category. Unemployed people are no longer classified as "employed" and instead fall into a new category of "unemployed." This conversion alters the utility of identity and may result in effects such as self-esteem loss and stigmatization.

Empirical analysis of the impact of unemployment on well-being shows that unemployment reduces life satisfaction by reducing income (e.g., Knabe & Rätzel, 2011). This means that unemployment worsens their social status and causes them to break the social norm of working, thus lowering their self-esteem and identity utility. In addition, well-being can be improved when some income from work is received rather than entirely relying on income support. In the United Kingdom, the introduction of various income support programs, including in-work benefits, has been shown to improve the mental health and subjective well-being of single parents (e.g., Boyd-Swan et al., 2016). Hetschko et al. (2020) investigate changes in life satisfaction as workers transition between periods of unemployment, regular employment, and subsidized employment. The results show that working

generally makes people wealthier than being unemployed, but subsidized employment does not provide the same level of life satisfaction as regular employment.

Welfare recipients may experience a similar conversion. The working-age recipients leave the social category of "worker" and enter a new category of "welfare recipient" who receives welfare assistance. This conversion may make them feel stigmatized. A groundbreaking study by Moffitt (1983) on welfare stigma in economics analyzes household decisions about whether to receive welfare benefits or supply labor and including stigma as a financial cost. In some cases, empirical analysis using the Panel Survey of Income Dynamics confirms the existence of welfare receipt stigma. According to a recent study conducted by Kurita et al. (2020) using data from OECD countries, the ratio of welfare recipients may decrease as the welfare benefits level increases. Thus, previous studies have shown that there is a stigma associated with welfare.

Several empirical studies show that welfare receipt harms well-being among working-age people. For instance, Chadi (2014) finds strong evidence by leveraging regional differences in whether people feel stigmatized by living on government assistance. One suffers less if there is less normative pressure to earn a living alone.

An issue not considered in previous studies is the impact on the older people. In the case of unemployment, the working older adults may not be the norm because of several factors like retirement. In many cases, however, the nondependency norm may remain because they save for retirement or pay pensions to the working generation and do not receive public assistance after retirement. Welfare receipt may lower well-being due to the stigma associated with being a welfare recipient. Given the paucity of prior research on the relationship between welfare receipt and older people's well-being, it is crucial to clarify this relationship by conducting an analysis.

To the best of the author's knowledge, there is no literature in Japan on welfare receipt and well-being. In a similar study, Tachibanaki and Urakawa (2006) examine the impact of qualitative poverty on people's life satisfaction. The results reveal that not only income and assets, but also housing quality, family relationships, interpersonal relationships, and family health are affected. Kino et al. (2022) find that when welfare benefits are suspended, informal socializing and social participation increase. However, existing relationships are not disrupted when welfare is initiated. Sano and Ohtake (2007) explain the role of labor variables as happiness predictors. They find that personal news is important in determining happiness in the short run, that Japanese people are happy if they believe they have a higher standard of living than others, and that unemployment lowers happiness in mature age. Meanwhile, Kume et al. (2011) investigate the factors that influence subjective well-being, focusing on nonregular workers in Japan. The results reveal that worker attributes, such as unmarried, short duration of employment, involuntary irregular employment, education below high school graduation, and past work-related injuries lower subjective well-being.

3. Data

I use panel data from JSTAR, which is conducted every two years from 2007 to 2013, interviewing the same respondents in each wave. The first wave in 2007 covered Sendai City, Miyagi Prefecture; Adachi Ward, Tokyo; Shirakawa Town, Gifu Prefecture; Kanazawa City, Ishikawa Prefecture; and Takikawa City, Hokkaido. JSTAR has added two new cities since the second wave in 2009, namely, Naha City, Okinawa Prefecture, and Tosu City, Saga Prefecture. Meanwhile, in the third wave in 2011, Hiroshima City, Hiroshima Prefecture; Chofu City, Tokyo; and Tondabayashi City, Osaka Prefecture, have been added. In 2013, ten cities were surveyed for the fourth wave, with no new cities added. However, in the first wave (i.e., 2007), JSTAR did not survey whether respondents received public assistance.[3] Therefore, I focus my research on the second through fourth waves (i.e., 2009, 2011, and 2013).

Table 1 shows the number of respondents in each city. Every time a survey is conducted, the number of respondents in each city decreases. This sample's attrition could not have occurred randomly. If the sample is not randomly attenuated, respondents could have declined to respond if they received public assistance during the survey process because they did not want to disclose this fact. To address this issue, this study employs inverse probability weighting (Wooldridge, 2002, 2007) and examines how much this attrition affects the estimation results. A probit model is used to estimate the probability of drop-off responses first. That is, I use a dummy variable as the dependent variable with a value of 0 for those who completed all surveys and 1 for those who dropped out in the middle of a survey. The independent variables are age, age squared, marital status, family contact status, living expenses per month with logarithm, number of household members, working hours, self-employment dummy, regular employment dummy, number of doctor visits per month, and IADL (difficulty of instrumental activities of daily living scale). The inverse of the estimated probability of drop-off responses is used as weights, and I estimate them using OLS and an ordered logit model for receiving public assistance and life satisfaction. As shown in Table 2, the results do not differ significantly depending on whether the samples are weighted. As a result, the effect of sample attrition is confirmed to be minor.

[3] I count individuals who responded that they pay for their medical expenses out of their public assistance funds as welfare recipients. This is because if they receive public assistance, they are required to opt out of the national health insurance system and instead use public assistance funds.

Table 1 Number of respondents in each city

Surveyed city	2009	2011	2013
Sendai	536	423	335
Kanazawa	615	478	410
Takikawa	408	345	308
Shirakawa	568	536	494
Adachi	519	370	310
Naha	698	474	299
Tosu	531	430	351
7 cities total	3,875	3,056	2,507
Hiroshima		991	755
Tondabayshi		463	334
Chofu		464	292
10 cities total		4,974	3,888

Table 2 Estimation results with and without inverse probability weighting for subjective well-being (life satisfaction)

	OLS		Ordered logit	
	With weight	Without weight	With weight	Without weight
Public assistance	-0.379***	-0.323***	-0.899***	-0.794**
	(0.0900)	(0.123)	(0.210)	(0.317)
Age	0.0961***	0.0923***	0.237***	0.235***
	(0.0182)	(0.0278)	(0.0470)	(0.0771)
Age squared	-0.000576***	-0.000562***	-0.00140***	-0.00140**
	(0.000137)	(0.000207)	(0.000357)	(0.000576)
Spouse	0.130***	0.130***	0.331***	0.348***
	(0.0206)	(0.0314)	(0.0531)	(0.0888)
Contact family	0.103***	0.117***	0.263***	0.314***
	(0.0251)	(0.0377)	(0.0626)	(0.103)
Log living expenses	0.0389***	0.0452**	0.0949***	0.130**
	(0.0133)	(0.0192)	(0.0346)	(0.0545)
Number of household members	-0.00331	-0.0143*	-0.00949	-0.0394*
	(0.00535)	(0.00733)	(0.0141)	(0.0205)
Working hours	-0.00111**	-0.00141*	-0.00339***	-0.00394*
	(0.000505)	(0.000763)	(0.00129)	(0.00215)
Self-employed	0.0317	0.104***	0.0948	0.269***
	(0.0242)	(0.0345)	(0.0627)	(0.101)
Regular employment	0.111***	0.126***	0.301***	0.350***
	(0.0274)	(0.0431)	(0.0701)	(0.119)
Number of visits to doctors	0.00473	0.0157*	0.0137	0.0412
	(0.00556)	(0.00877)	(0.0144)	(0.0261)
IADL	0.0870***	0.0893***	0.212***	0.230***
	(0.00495)	(0.00718)	(0.0126)	(0.0204)
Year dummy	Yes	Yes	Yes	Yes
Constant	-2.121***	-1.992**		
	(0.598)	(0.937)		
N	10227	10227	10227	10227
adj. R-sq	0.090	0.068		

Notes: [a] Robust standard errors are in parentheses.
[b] "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

In this study, I analyze subjective well-being using life satisfaction. Although there is no single definition of happiness, researchers in various fields use the concept to convey how people perceive the quality of their lives. These include the absence of negative feelings, the presence of

positive feelings, and life satisfaction in general, so this study follows this idea.[4]

JSTAR asks, "Are you satisfied with your current life? Or are you dissatisfied?" Respondents select one of four options: (1) satisfied, (2) fairly satisfied, (3) somewhat dissatisfied, or (4) dissatisfied. To convert this response into a life satisfaction variable, I change it to life (5) satisfaction (5 is the response number). As a result, if the respondent selects "1. satisfied," the life satisfaction variable is calculated as 5 − 1 = 4, adding 4 points. Thus, subjective well-being ranges from 1 to 4; the higher the points, the better.

Table 3-1 presents descriptive statistics. According to previous studies, income level and employment status are the most common factors influencing happiness, age, health status, and social relationships. One of the most important factors is income level. However, this study does not use income but rather living expenses. This is because income is frequently volatile, whereas expenditure levels are thought to be stable over time and thus better reflect normal economic conditions. Furthermore, income is subject to greater measurement error because people may not respond or provide incorrect information. Therefore, using expenditure variables to assess the economic status of respondents is not a problem.[5]

Table 3-1 Descriptive statistics (all samples)

Variable	Obs	Mean	Std.dev.	Min	Max
Life satisfaction	12,737	3.128	0.78	1	4
Public assistance	12,737	0.012	0.11	0	1
Age	12,734	65.899	7.35	47	82
Age squared	12,734	4396.793	966.93	2209	6724
Spouse	12,693	0.794	0.40	0	1
Contact family	12,736	0.893	0.31	0	1
Log living expenses	10,760	5.104	0.60	0	8
Number of household members	12,737	3.079	1.61	1	11
Working hours	12,639	16.353	21.23	0	153
Self-employed	12,557	0.144	0.35	0	1
Regular employment	12,726	0.151	0.36	0	1
Number of visits to doctors	12,737	0.402	1.40	0	28
IADL	12,363	11.873	1.97	0	13

Age, age squared, marital status, family contact status, number of household members, working hours, self-employment dummy, regular employment dummy, number of doctor visits per month, and IADL (difficulty of instrumental activities of daily living scale) are also used in the analysis. The variables in the analysis are drawn from Japan's public assistance system, which is designed to

[4] Regarding the definitions of variables and analysis methods, I refer to Sugano (2016), who used the same JSTAR as in this study.

[5] The survey asks about the amount of living expenses normally spent in a month, but some people give responses, such as between 100,000 and 150,000 yen. In this case, I treat it as 125,000 yen, which I take as an average.

guarantee a minimum standard of living and promote self-reliance. Recipients are expected to use all available resources, including their ability to work, assets, and assistance from those legally obligated to support them. Family contact status is a dummy variable with a value of 1 if parents and children are in contact at least once a month and a value of 0 otherwise. IADL uses an index of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, and higher scores indicate fewer difficulties in daily living. Note that, as explained in Section 2, temporary news and unemployment are known to impact well-being. Therefore, this study excludes samples of persons who experienced involuntary unemployment or the death of a family member within one year.

As shown in Table 3-1, the number of respondents receiving public assistance is 1.2%. When respondents are asked whether or not they receive public assistance, "false negatives" are reported, in which respondents indicate that they do not receive benefits when in fact they do (Meyer et al., 2022). However, "false negatives" are not a major problem in the JSTAR survey because the 1.2% public assistance rate is almost identical to the official value of 1.38% reported by the Ministry of Health, Labour and Welfare (2009).[6]

Because the above sample includes people whose consumption level is higher than the public assistance level, the sample must also be limited to people whose consumption level is at the public assistance level. Table 3-2 displays descriptive statistics for a sample of people who spend 100,000 yen or less per month. The amount of livelihood assistance, which represents the cost of living, varies slightly by region, ranging from 61,800 yen to 84,000 yen, for example. However, because of earned income deductions and other factors, even those on public assistance can consume more than this amount. Because earned income deductions are limited to 20,000 yen, the standard for expenditure in this study is set at 100,000 yen. As shown in Table 3-2, the rate of public assistance coverage in Japan is 9.4 %, slightly lower than Japan's 16%–20% coverage rate (Komamura, 2003; Tachibanaki and Urakawa, 2006) discussed in Section 1, but not remarkably different.

[6] See the website of the Ministry of Health, Labour and Welfare.
(https://www.mhlw.go.jp/stf/wp/hakusyo/kousei/19/backdata/02-04-03-01.html)

Table 3-2 Descriptive statistics (monthly living expenses of less than 100,000 yen)

Variable	Obs	Mean	Std.dev.	Min	Max
Life satisfaction	839	2.932	0.86	1	4
Public assistance	839	0.094	0.29	0	1
Age	838	67.158	7.54	50	81
Age squared	838	4566.845	1000.15	2500	6561
Spouse	821	0.113	0.32	0	1
Contact family	838	0.666	0.47	0	1
Log living expenses	693	4.145	0.56	0	5
Number of household members	839	1.000	0.00	1	1
Working hours	831	13.549	20.36	0	120
Self-employed	828	0.086	0.28	0	1
Regular employment	839	0.117	0.32	0	1
Number of visits to doctors	839	0.406	1.32	0	24
IADL	799	11.432	2.28	0	13

Note: "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living.

4. Empirical strategy

In this study, I use fixed effects models and fixed effects ordinal logit models (Baetschmann et al., 2015) to analyze the impact of welfare receipts on well-being. Specifically, I estimate the following equation (1).

$$LS_{it} = \alpha + \beta PA_{it} + X_{it}\gamma + \theta_i + \lambda_t + \varepsilon_{it}, \quad (1)$$

where LS_{it} is life satisfaction at wave t for respondent i.[7] PA_{it} is a dummy variable that takes the value of 1 if the respondent is receiving public assistance and 0 if not. That is, I focus on whether or not $\beta < 0$. X_{it} is a control variable such as age, age squared, marital status, family contact status, living expenses per month with logarithm, number of household members, working hours, self-employment dummy, regular employment dummy, number of doctor visits per month, and IADL. I also analyze the monthly living expenses with logarithm, excluding the expenses, because they may be strongly correlated with welfare receipt. θ_i is the fixed effect of respondent i. Because welfare

[7] According to Bond and Lang (2019), regression estimates with ordered probit and logit are only accurate for a given arbitrary cardinalization of well-being. Therefore, to indicate robustness, I also use dummy variables with 1 and 2 of the above life satisfaction levels as 0, and 3 and 4 as 1 to also estimate the effect using a binary response model. As a result, I find no major changes in the trends of the results although the significance of the coefficients for the welfare receipt dummies differed slightly.

receipt varies according to the application and stigma costs of the municipality in which one lives (Chadi, 2014), I must account for this effect using fixed effects. λ_t indicates a time-specific effect. In Japan, criticism of the public assistance program intensified in 2012, sparked by reports that the mother of a television personality, whose income was assumed to be quite high, was receiving public assistance (Abe, 2018). Because events occurred that may have exacerbated the stigma associated with welfare receipt, this analysis must account for the time-specific effect.

It is necessary to determine whether the PA_{it} fluctuates, particularly in the case of older people. This is because once older people start receiving public assistance, they are less likely to get off assistance by finding a job and obtaining a source of income. Naturally, this may not be a problem in certain cases as older people may get off welfare by using a different type of assistance, such as by receiving a new pension. Table 4 shows the transition of those who received public assistance at least once in the JSTAR surveys (2009, 2011, and 2013). Among adults aged ≥65 years as well as ≤64 years, more than 66% of those who did not receive public assistance in period t received it in period t+1. Conversely, nearly 50% of those who received public assistance in period t did not receive it in period t+1, indicating that the PA_{it} is sufficiently fluctuating.

Table 4 Transition of those who have received public assistance at least once during the analysis period.

(i) Over 65 years old

	Not receiving public assistance in period t+1	Receiving public assistance in period t+1	Total
Not receiving public assistance in period t	33.33	66.67	100
Receiving public assistance in period t	59.02	40.98	100

(ii) Under 64 years old

	Not receiving public assistance in period t+1	Receiving public assistance in period t+1	Total
Not receiving public assistance in period t	31.25	68.75	100
Receiving public assistance in period t	41.67	58.33	100

Note: The time points are 2009, 2011, and 2013.

With the gradual increase in the age at which pension eligibility begins in Japan, the Elderly Employment Stability Law was revised in April 2006, requiring measures to ensure employment up to age 65 (Kondo & Shigeoka, 2017). Therefore, I analyzed the definition of the older adults as those

aged 65 and above.[8] In addition, the analysis is focused on older persons aged 65 and over with a low standard of living, that is, whose cost of living is less than 100,000 yen per month. Furthermore, the analysis focuses on single-person households because the income and expenditures of the spouse, children, and other people living with the individual may impact the individual's well-being. In addition, as happiness levels are known to vary by gender (e.g., Sano and Ohtake, 2007), the analysis is conducted separately for men and women.

5. Results

5.1. Effects on over 65 years of age

Table 5-1 displays the analysis findings for people aged 65 and up. According to these results, I determine that the coefficient on the welfare receipt dummy is not statistically significant in all cases, regardless of whether the monthly living expenses are limited to 100,000 yen. Table 5-2 shows the results when the sample is limited to single-person households for persons 65 or older. In this case, the coefficients for the welfare receipt dummies are also statistically insignificant in all cases. In summary, the findings show that whether or not the older people are receiving public assistance has little effect on their life satisfaction.

[8] The Elderly Employment Stabilization Law was revised in 2013 for those who wish to work become eligible for continued employment. This revision may have affected the results because this study covers the period from 2009 to 2013. However, Jiang (2023) found that the 2013 revision did not significantly increase the employment rate, so this study does not consider the impact of this revision.

Table 5-1 Effects on subjective well-being of older people over 65 years

	All				People whose monthly living expenses are less than 100,000 yen			
	FE		FEOL		FE		FEOL	
	Life satisfaction (1-4)							
Public assistance	0.326	0.178	1.273	0.489	0.198	-0.0255	0.763	-0.0734
	(0.221)	(0.212)	(0.850)	(0.588)	(0.256)	(0.256)	(0.990)	(0.624)
Age	0.232**	0.299***	1.066**	1.391***	0.368	0.342	2.426	1.910**
	(0.114)	(0.101)	(0.508)	(0.444)	(0.310)	(0.225)	(1.610)	(0.931)
Age squared	-0.00137*	-0.00191***	-0.00631*	-0.00893***	-0.00230	-0.00240	-0.0157	-0.0133**
	(0.000791)	(0.000696)	(0.00350)	(0.00306)	(0.00212)	(0.00153)	(0.0108)	(0.00633)
Spouse	0.0566	-0.0643	0.193	-0.174	0.170	-0.0856	0.439	-0.217
	(0.109)	(0.0950)	(0.387)	(0.343)	(0.336)	(0.186)	(0.785)	(0.654)
Contact family	0.342*	0.264	1.435	1.055	0.978***	0.940***	15.89***	13.50***
	(0.180)	(0.171)	(1.025)	(0.706)	(0.0920)	(0.0646)	(0.779)	(0.617)
Log living expenses	-0.0210		-0.0924		0.0361		0.166	
	(0.0240)		(0.114)		(0.0629)		(0.277)	
Number of household members	-0.0412***	-0.0298**	-0.167**	-0.118**	-0.0143	-0.0380	-0.0934	-0.203*
	(0.0142)	(0.0130)	(0.0703)	(0.0541)	(0.0457)	(0.0357)	(0.212)	(0.107)
Working hours	0.000882	0.00137	0.00398	0.00700	0.00457	0.00288*	0.0321*	0.0318**
	(0.00114)	(0.000958)	(0.00504)	(0.00459)	(0.00297)	(0.00160)	(0.0179)	(0.0133)
Self-employed	-0.00662	0.0114	0.0276	0.0695	0.0445	0.190	1.262	0.718
	(0.0608)	(0.0560)	(0.257)	(0.232)	(0.130)	(0.142)	(1.136)	(0.563)
Regular employment	-0.00700	0.0100	0.00734	0.0765	-0.0212	0.0441	-0.396	-0.0287
	(0.0917)	(0.0765)	(0.365)	(0.310)	(0.447)	(0.228)	(0.882)	(0.704)
Number of visits to doctors	0.0106	0.00767	0.0596	0.0406	0.0223	0.00770	0.141	0.0415
	(0.00999)	(0.00797)	(0.0467)	(0.0341)	(0.0570)	(0.0166)	(0.308)	(0.0702)
IADL	0.0391***	0.0458***	0.115***	0.146***	-0.0104	0.0300	-0.0616	0.0782
	(0.0124)	(0.00997)	(0.0399)	(0.0345)	(0.0264)	(0.0184)	(0.0821)	(0.0583)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-6.939*	-8.999**			-12.34	-10.07		
	(4.143)	(3.667)			(11.39)	(8.267)		
N	5637	6706	2264	3057	1346	2415	363	769
adj. R-sq	0.019	0.019			0.017	0.023		

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living
[c] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 5-2 Effects on subjective well-being of single over 65-year-olds

	All				People whose monthly living expenses are less than 100,000 yen			
	FE		FEOL		FE		FEOL	
	Life satisfaction (1-4)							
Public assistance	-0.0436	-0.217	-0.712	-1.317	0.0850	-0.185	-0.223	-1.538
	(0.199)	(0.203)	(0.980)	(0.827)	(0.227)	(0.229)	(1.208)	(1.094)
Age	0.269	0.291	1.643	1.414	0.828**	0.799**	6.726**	5.212**
	(0.320)	(0.319)	(1.695)	(1.672)	(0.393)	(0.392)	(3.009)	(2.506)
Age squared	-0.00165	-0.00173	-0.0103	-0.00851	-0.00581**	-0.00545**	-0.0463**	-0.0346**
	(0.00218)	(0.00218)	(0.0115)	(0.0113)	(0.00267)	(0.00266)	(0.0201)	(0.0167)
Spouse	0.0434	0.0479	0.390	0.693	0.641	0.534	15.10***	18.76***
	(0.232)	(0.215)	(0.655)	(0.683)	(0.575)	(0.471)	(1.430)	(1.498)
Contact family	0.263	0.400**	13.59***	14.79***	0	0.874***	0	15.20***
	(0.196)	(0.172)	(1.039)	(0.813)	(.)	(0.155)	(.)	(1.427)
Log living expenses	0.0602		0.372		0.0956		0.811	
	(0.0591)		(0.303)		(0.111)		(0.568)	
Working hours	0.00447	0.00351	0.0431*	0.0247	0.00753	0.00323	0.0343	0.0154
	(0.00303)	(0.00271)	(0.0251)	(0.0193)	(0.00637)	(0.00287)	(0.0515)	(0.0504)
Self-employed	-0.151	-0.0108	-1.791	-0.363	0.0756	0.309	0	16.42***
	(0.189)	(0.175)	(1.463)	(1.335)	(0.345)	(0.231)	(.)	(2.642)
Regular employment	0.208	0.236	-0.370	0.155	0.881	1.061*	15.24***	17.20***
	(0.323)	(0.321)	(1.071)	(1.131)	(0.569)	(0.547)	(3.349)	(3.265)
Number of visits to doctors	0.0107	0.0238	0.0360	0.0711	0.0864	0.0514***	0.639*	0.473
	(0.0272)	(0.0184)	(0.118)	(0.0664)	(0.0561)	(0.0124)	(0.382)	(0.335)
IADL	0.0848**	0.0635**	0.405**	0.395**	0.0305	0.0223	0.201	0.196
	(0.0380)	(0.0311)	(0.182)	(0.173)	(0.0663)	(0.0367)	(0.311)	(0.237)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-9.158	-9.870			-27.21*	-27.12*		
	(11.84)	(11.79)			(14.74)	(14.48)		
N	762	839	275	312	410	487	126	157
adj. R-sq	0.029	0.030			0.095	0.084		

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living
[c] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Regarding the others, the coefficients of contact with family are often statistically significant. In other words, the more people are in contact with their families. For IADL, the coefficients are statistically significant for all samples analyzed, that is, the fewer difficulties a person has in daily living, the higher the level of satisfaction. The coefficients for age, age squared, spousal status, number of household members, working hours, self-employment status, regular employment status, and number of doctor visits depend on the analysis method, although they can be statistically significant.

Older people with compromised working standards may not be dissatisfied with welfare

benefits. One issue with the analysis is that we do not know if it occurs immediately after they begin receiving public assistance. Hetschko et al. (2020) investigate the transition from subsidized to regular employment and vice versa, observing that the impact on life satisfaction may diminish more than six months after the transition. JATAR is a biennial survey that does not provide detailed information on how long people have been receiving government assistance. Future research should consider whether the period immediately following receipt of welfare benefits is also important.

5.2. Effects on under 64 years of age

In the case of those 65 years and older, I find that welfare receipt has little impact on well-being. Previous research, however, has found a negative impact in the case of the working-age population. As a result, in this study, I confirm whether the same results are obtained for the working-age group under 64. Table 6-1 show results that are not limited to single-person households. Although the coefficient on the public assistance receipt dummy is negative, these results are not statistically significant in almost all cases. However, in Table 6-2, which is restricted to single-person households, the public assistance receipt dummy coefficient is negative and statistically significant in all cases when the monthly living expenses are less than 100,000 yen. Therefore, a similar trend is confirmed in this study using Japanese data as that in other countries for the working-age population.

Table 6-1 Effects on subjective well-being of under 64-year-olds

	All				People whose monthly living expenses are less than 100,000 yen			
	FE		FEOL		FE		FEOL	
	Life satisfaction (1-4)							
Public assistance	0.144	-0.00677	0.664	-0.0857	-0.0216	-0.162	-0.151	-0.543
	(0.229)	(0.246)	(0.788)	(0.880)	(0.348)	(0.321)	(0.876)	(0.846)
Age	0.144	0.180	0.480	0.687	1.111**	0.660*	4.126**	2.756*
	(0.133)	(0.124)	(0.606)	(0.547)	(0.447)	(0.350)	(1.954)	(1.432)
Age squared	-0.000654	-0.00104	-0.00164	-0.00377	-0.00898**	-0.00509*	-0.0335**	-0.0213*
	(0.00112)	(0.00104)	(0.00514)	(0.00463)	(0.00384)	(0.00301)	(0.0168)	(0.0123)
Spouse	-0.207	-0.198	-0.307	-0.231	0.161	0.0119	0.816	0.615
	(0.150)	(0.157)	(0.493)	(0.468)	(0.552)	(0.586)	(1.060)	(0.889)
Contact family	0.276*	0.370*	1.674	1.920**	0.575	1.503*	13.98***	16.28***
	(0.162)	(0.214)	(1.084)	(0.972)	(0.429)	(0.792)	(1.105)	(1.019)
Log living expenses	0.00259		0.0332		0.0285		-0.0489	
	(0.0300)		(0.132)		(0.100)		(0.454)	
Number of household members	-0.0259*	-0.0238*	-0.121*	-0.106*	-0.0662	-0.0909***	-0.225	-0.366**
	(0.0157)	(0.0143)	(0.0727)	(0.0613)	(0.0569)	(0.0329)	(0.280)	(0.158)
Working hours	0.00222*	0.00143	0.00962*	0.00585	-0.00257	-0.000701	-0.0160	-0.00405
	(0.00117)	(0.00104)	(0.00531)	(0.00433)	(0.00434)	(0.00264)	(0.0192)	(0.00953)
Self-employed	0.148*	0.154**	0.587*	0.605**	-0.196	0.0889	-0.225	0.463
	(0.0896)	(0.0752)	(0.348)	(0.300)	(0.240)	(0.182)	(1.085)	(0.699)
Regular employment	-0.0480	0.00440	-0.168	0.0798	-0.0768	0.0313	0.00607	0.220
	(0.0519)	(0.0467)	(0.218)	(0.191)	(0.199)	(0.135)	(0.568)	(0.427)
Number of visits to doctors	0.00208	0.00862	0.00160	0.0407	-0.0490	-0.00740	-0.333	0.0188
	(0.00985)	(0.00863)	(0.0410)	(0.0384)	(0.0310)	(0.0158)	(0.257)	(0.111)
IADL	0.0420***	0.0338***	0.165***	0.130***	0.0443	0.0435*	0.0854	0.140
	(0.0149)	(0.0129)	(0.0560)	(0.0476)	(0.0435)	(0.0242)	(0.145)	(0.0923)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-3.744	-4.515			-32.22**	-19.74*		
	(3.965)	(3.692)			(13.20)	(10.23)		
N	4590	5351	1847	2397	969	1730	248	474
adj. R-sq	0.035	0.028			0.070	0.064		

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living
[c] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order logit.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 6-2 Effects on subjective well-being of single under 64-year-olds

	All				People whose monthly living expenses are less than 100,000 yen			
	FE		FEOL		FE		FEOL	
	Life satisfaction (1-4)							
Public assistance	-0.422	-0.547	-14.56***	-2.012	-0.657*	-0.705*	-16.08***	-4.141***
	(0.309)	(0.379)	(1.372)	(1.286)	(0.393)	(0.374)	(1.520)	(1.175)
Age	-0.120	0.0134	0.436	1.219	0.794	0.899	3.155	3.260
	(0.518)	(0.521)	(2.491)	(2.257)	(0.843)	(0.786)	(4.260)	(3.509)
Age squared	0.00168	0.000347	-0.00116	-0.00920	-0.00715	-0.00812	-0.0283	-0.0294
	(0.00444)	(0.00449)	(0.0211)	(0.0195)	(0.00747)	(0.00697)	(0.0378)	(0.0306)
Spouse	-0.108	-0.212	-14.16***	-14.32***	0	0	0	0
	(0.165)	(0.176)	(1.166)	(1.153)	(.)	(.)	(.)	(.)
Contact family	0.366	0.389	15.50***	15.17***	0	0	0	0
	(0.492)	(0.451)	(1.156)	(1.149)	(.)	(.)	(.)	(.)
Log living expenses	0.176*		0.665*		0.157		0.392	
	(0.105)		(0.388)		(0.210)		(0.837)	
Working hours	-0.00178	-0.000781	-0.00601	-0.00191	-0.00552	-0.00556	-0.0226	-0.0253
	(0.00517)	(0.00466)	(0.0204)	(0.0169)	(0.00894)	(0.00806)	(0.0266)	(0.0246)
Self-employed	0.697	0.476	19.71***	19.10***	0	0	0	0
	(0.543)	(0.366)	(1.498)	(1.433)	(.)	(.)	(.)	(.)
Regular employment	0.0556	-0.0293	0.0907	-0.233	-0.318	-0.280	-0.473	-0.665
	(0.234)	(0.216)	(0.843)	(0.812)	(0.470)	(0.400)	(1.459)	(1.431)
Number of visits to doctors	0.0100	-0.000898	0.0133	-0.000909	-0.0132	-0.0921	-0.298	-0.976*
	(0.0246)	(0.0273)	(0.107)	(0.0956)	(0.0564)	(0.0574)	(0.726)	(0.499)
IADL	0.0627	0.0299	0.245	0.0718	0.0715	-0.0302	-0.0573	-0.347
	(0.0451)	(0.0486)	(0.196)	(0.168)	(0.0994)	(0.0886)	(0.356)	(0.266)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.174	0.161			-20.42	-21.39		
	(15.26)	(15.10)			(24.41)	(22.31)		
N	431	479	174	192	231	279	88	106
adj. R-sq	0.102	0.057			0.139	0.123		

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living
[c] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order logit.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

5.3 Effects by gender

Because happiness can vary by gender, I analyze the results separately for men and women (e.g., Sano and Ohtake's 2007 Japanese study). Results are shown in Table 7. Single-person households were not analyzed owing to the insufficient sample size. The results show that the coefficients for the welfare receipt dummies are not statistically significant in all the analyses for the ≥65 and ≤64 age groups. Thus, I find that there is no gender-based difference in the effect of welfare receipt on well-being in this study.

Table 7 Effects of gender on subjective well-being

(i) Over 65 years old

	All				People whose monthly living expenses are less than 100,000 yen			
	Male		Female		Male		Female	
	FE	FEOL	FE	FEOL	FE	FEOL	FE	FEOL
	Life satisfaction (1-4)							
Public assistance	0.394	0.904	0.0677	0.208	-0.0395	0.320	-0.0233	-0.0937
	(0.406)	(0.789)	(0.233)	(0.782)	(0.420)	(0.901)	(0.308)	(0.774)
N	3252	1547	3454	1510	1135	343	1280	426
adj. R-sq	0.041		0.008		0.060		0.031	

(ii) Under 64 years old

	All				People whose monthly living expenses are less than 100,000 yen			
	Male		Female		Male		Female	
	FE	FEOL	FE	FEOL	FE	FEOL	FE	FEOL
	Life satisfaction (1-4)							
Public assistance	-0.113	-0.307	0.136	0.447	-0.289	-0.655	-0.0256	-0.861
	(0.425)	(1.403)	(0.239)	(1.111)	(0.484)	(1.169)	(0.364)	(1.117)
N	2576	1264	2775	1133	884	258	846	216
adj. R-sq	0.035		0.028		0.102		0.112	

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order logit.
[c]The control variables are age, age squared, marital status, family contact status, number of household members, working hours, self-employment dummy, regular employment dummy, number of visits to the doctor per month, and IADL. "Working hours" represents the total hours per week. The "number of doctor visits" indicates the number of days in the hospital per month. "IADL" means difficulty of instrumental activities of the daily living scale. "IADL" uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living.
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$.

5.4. Effects by region

According to Chadi (2014), welfare receipt can vary depending on the application and stigma costs of the municipality in which one lives. As a result, the relationship between welfare receipt and life satisfaction may differ across regions. Due to sample size limitations, I am only able to analyze three regions: Sendai City, Adachi Ward, and Naha City. Table 8 (i) and (ii) show the results for those 65 years and older. For Sendai City and Adachi Ward, the public assistance receipt dummy coefficient tends to be statistically negative and significant, while for Naha City it is statistically insignificant. Table 8 (iii) and (iv) show the results for those 64 years and under. The coefficient of the public assistance receipt dummy is statistically negative and significant in Sendai City, but not in Adachi Ward. In contrast, the coefficient for Naha City is positive and, in part, statistically significant.

The results of this study and previous studies confirm regional heterogeneity.

Table 8 Effects on subjective well-being by region

(i) Over 65 years old (All samples)

	Life satisfaction (1-4)					
	Sendai		Adachi		Naha	
	FE	FEOL	FE	FEOL	FE	FEOL
Public assistance	0.0432	0.608	-0.505	-1.602	0.690	1.650
	(0.205)	(1.197)	(0.358)	(1.016)	(0.545)	(1.230)
N	738	287	722	382	709	323
adj. R-sq	0.046		0.033		0.047	

(ii) Over 65 years old (Persons whose monthly living expenses are less than 100,000 yen)

	Life satisfaction (1-4)					
	Sendai		Adachi		Naha	
	FE	FEOL	FE	FEOL	FE	FEOL
Public assistance	0.127	-17.08***	-0.987***	-16.17***	0.655	1.791
	(0.376)	(5.809)	(0.123)	(1.189)	(0.561)	(1.341)
N	172	43	269	91	346	151
adj. R-sq	0.225		0.067		0.110	

(iii) Under 64 years old (All samples)

	Life satisfaction (1-4)					
	Sendai		Adachi		Naha	
	FE	FEOL	FE	FEOL	FE	FEOL
Public assistance	-0.810***	-14.39***	-0.276	-1.321	0.288	13.53***
	(0.0921)	(1.416)	(0.573)	(1.495)	(0.242)	(1.134)
N	508	275	411	265	704	290
adj. R-sq	0.083		0.069		0.038	

(iv) Under 64 years old (Persons whose monthly living expenses are less than 100,000 yen)

	Life satisfaction (1-4)					
	Sendai		Adachi		Naha	
	FE	FEOL	FE	FEOL	FE	FEOL
Public assistance	-1.306*	-20.22***	-0.742	-2.949	0.184	11.38***
	(0.694)	(3.260)	(0.918)	(4.545)	(0.186)	(1.876)
N	111	28	128	58	323	114
adj. R-sq	0.444		0.195		0.121	

Notes: [a] Cluster standard errors for each individual level are in parentheses.
[b] "FE" indicates a fixed effect; "FEOL" indicates fixed effect order logit.
[c] The control variables are age, age squared, marital status, family contact status, number of

household members, working hours, self-employment dummy, regular employment dummy, number of visits to the doctor per month, and IADL. “Working hours” represents the total hours per week. The “number of doctor visits” indicates the number of days in the hospital per month. “IADL” means difficulty of instrumental activities of the daily living scale. “IADL” uses an index consisting of 13 questions to measure the ability to perform higher life functions independently. Scores range from 0 to 13, with higher scores indicating fewer difficulties in daily living.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

According to a survey of public assistance recipients conducted by the Ministry of Health, Labour, and Welfare, the public assistance rate in Sendai City was 1.63% in 2013, the rate in Tokyo (the public assistance rate in Adachi Ward is not disclosed) was 2.20%, and the rate in Naha City was 3.61%. This means that areas with lower levels of public assistance tend to have lower levels of well-being due to receiving public assistance, and vice versa. The stigma may be reinforced if few people around them receive public assistance.

6. Conclusion

The goal of this study is to examine the effect of welfare receipt on the well-being of the older people. Previous studies have shown that receipt of public assistance by the working-age population in the context of unemployment is known to reduce well-being due to the formation of a nondependency norm. However, the receipt of public assistance by the older people has not been analyzed. Additionally, the stigma of receiving public assistance may be strong in Japan, given that the welfare coverage rate in Japan is low compared to other developed countries, ranging from 10% to 20%. Therefore, there is room to analyze the impact of welfare income on the well-being of the older people in Japan.

In this study, I estimated the impact of the older people’s receipt of public assistance on their life satisfaction using JSTAR, which even surveyed their receipt of public assistance. The results revealed that the receipt of public assistance had little impact on their life satisfaction. Older people are likely not working, which may weaken the nondependency norm. As in previous studies, I confirm that welfare receipt has a partial negative impact on the working-age population. In terms of regional heterogeneity, I found that the lower the rate of public assistance, the lower the level of well-being due to receipt of public assistance. When few people are receiving public assistance in one’s immediate surroundings, the stigma may be exacerbated. However, I did not find gender-based heterogeneity.

Introduction of basic income based on age and region might be a useful policy intervention. If a minimum income is guaranteed to all citizens—not just to those with low incomes—the separate category of welfare recipients would be eliminated and support could be extended to those who truly need benefits. Importantly, such an intervention may allow governments to focus on the working-age population and areas with low protection rates, which were found to be affected by welfare receipt in this study. However, the introduction of basic income is not realistic considering the financial

resources required (Suzuki, 2021). The problem of Japan's low public assistance coverage and lack of benefits reaching those in need could be solved by making the public assistance system easier to use. Applicants seeking public assistance, for example, must pass a strict means test. At the time of application, applicants for public assistance are only permitted to own one-half of the minimum cost of living and not own fixed assets such as cars. The welfare office may at times seek assistance from the applicant's relatives. As a result, applicants must have few assets to be accepted for welfare assistance. Furthermore, people may not be aware of the welfare system, or even if they are aware of it and consult with the welfare office, they may not be accepted to apply. Occasionally, there are news reports that welfare office counselors do not accept applications for any reason.[9] Therefore, it may be necessary to ease the requirements for receiving benefits, publicize the welfare system, and improve the application process to make the system easier to use.

Future analysis using surveys with larger sample sizes is desirable. First, the small sample size in this study makes the verification of heterogeneity insufficient. Second, we cannot know whether or not the respondents started receiving public assistance immediately after receiving it. A person's happiness level may drop immediately after receiving welfare benefits (Hetschko et al., 2020). Future analyses will need to examine whether the time period immediately following welfare receipt is also important.

[9] The following URLs show examples of inappropriate behavior by welfare office counselors (https://www.yomiuri.co.jp/national/20221229-OYT1T50081/).

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