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## Living alone in Japan: Relationships with happiness and health

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### Abstract

**BACKGROUND**—One-person households are the most common type of household in Japan, but relatively little is known about the causes and potential consequences of the rise in solo living in young adulthood.

**OBJECTIVE**—I address two questions: What accounts for the rise in one-person households in young adulthood? How is solo living in young adulthood related to well-being?

**METHODS**—I use census data to evaluate how much of the growth in one-person households at ages 20–39 between 1985 and 2010 is explained by change in marital behavior and how much is explained by other factors. I then use data from the 2000–2010 rounds of the Japanese General Social Survey to examine whether and why men and women living alone differ from those living with others in terms of happiness and self-rated health.

**RESULTS**—Results of the first set of analyses indicate that changes in marital behavior explain all of the increase in one-person households for men and three-fourths of the increase for women. Results of the second set of analyses indicate that those living alone are significantly less happy than those living with others, whereas the two groups do not differ with respect to self-rated health. The observed differences in happiness are not explained by differences in subjective economic well-being or social integration.

**CONCLUSIONS**—The relatively small magnitude of estimated differences in happiness and health provides little evidence to suggest that the projected rise in one-person households is likely to play a significant role in contributing to lower levels of well-being among young adults in Japan.

### 1. Introduction

The prevalence of one-person households has increased over the past 20–30 years in many wealthy countries (e.g., Hall, Ogden, and Hill 1997; Kaufmann 1994). Viewed as part of the second demographic transition, this trend reflects both changes in marriage behavior and changes in attitudes and preferences (Lesthaeghe and Moors 2000; Ogden and Hall 2004; Surkyn and Lesthaeghe 2004). The former emphasizes the roles of later entry into marriage, increasing proportions of the population who never marry, and high rates of marital

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dissolution in increasing exposure to the risk of living in a one-person household (e.g., Hall, Ogden, and Hill 1997).<sup>2</sup> The latter emphasizes educational expansion, growing economic independence for women, increasing desire for privacy, independence, and self-actualization, and growth in infrastructure and services that facilitate living alone (Jamieson and Simpson 2013). Popular media accounts have highlighted both the pros and cons of living alone, touting independence and privacy while raising concerns about isolation and loneliness (Klinenberg 2012). However, careful empirical analyses of relationships between living alone and well-being are limited.

The general trend is toward more solo living, but the prevalence of one-person households varies markedly across countries. As shown in Figure 1, in 2010 the prevalence of one-person households (as a proportion of all households) ranged from over one-third in several Northern European countries to about half that level in Southern Europe (OECD 2014). Explanations for this cross-national variation in solo living tend to emphasize differences in both the public safety net (e.g., housing support policies), individuation and “post-materialist” values, and social and cultural norms regarding independence (Lesthaeghe 2010; Lesthaeghe and Moors 2000). For example, the relatively high prevalence of one-person households in Scandinavian countries likely reflects policies supportive of residential independence (both in young adulthood and at older ages) as well as relatively strong preferences for residential independence (Billari, Philipov, and Baizan 2001; Sobotka and Toulemon 2008). Although the role of delayed union formation is recognized (Lesthaeghe and Moors 2000), I am unaware of any efforts to quantify the impact of delayed marriage and union formation on trends in solo living.

In light of this theoretical background, it is surprising that the prevalence of one-person households is also relatively high in Japan, a country characterized not only by limited public housing support, but also by a strong tradition of extended family living and an ethos of independence that is weaker than in the U.S. and other Western countries (Iwakami and Miyamoto 2003; Miyamoto, Iwakami, and Yamada 1997). Figure 1 indicates that 29% of all households in Japan contain only one person, a level that is above the OECD average and higher than in countries like Australia, Canada, and the U.S. where living alone arguably has a longer history as a normative arrangement. Research on the rise in one-person households at older ages is common in Japan, but similar efforts to understand trends, causes, and consequences of living alone at younger ages are scarce. Related research on trends in home leaving has shown that the large majority of those who leave home prior to marriage form one-person households (Fukuda 2009).

My goal is to begin filling this gap in the research literature by focusing on recent trends in the prevalence of one-person households among young adults in Japan and by examining if and how living alone is associated with happiness and health. I begin by using published Census data to examine the extent to which the increase in one-person households among men and women aged 20–39 is explained by changes in marriage patterns – especially the pronounced delay in marriage over the past 30 years. These analyses are valuable for the

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<sup>2</sup>My use of the term marriage (rather than union) in this paper is motivated both by the relatively low prevalence of non-marital unions in Japan and by the fact that such unions cannot be directly observed in the data I examine.

insights they provide regarding the role of delayed marriage in the absence of many of the attitudinal, policy, and housing shifts thought to underlie the increase in one-person households in other countries. They also contribute to the large body of research on marital change in Japan in two important ways. First, they extend our understanding of the implications of changing marriage behavior by focusing on living arrangements. A large body of research has examined the implications of later and less marriage for trends in fertility (e.g., Retherford, Ogawa, and Matsukura 2001; Tsuya and Mason 1995), but attention to the implications for living arrangements is more limited. Second, the focus on solo living extends the research that has focused on relationships between delayed marriage and living arrangements. To date, most of this work has emphasized the growing number of unmarried young adults who live with their parents – often characterized pejoratively as “aristocrat singles” or “parasite singles” (Nakano and Wagatsuma 2004; Yamada 1999).

I then use individual-level data from multiple rounds of the Japanese General Social Survey to examine whether and how levels of happiness and subjective health among young men and women living alone differ from those of their counterparts who are either married or unmarried and living with others (typically their parents). Japan is a potentially rich source of insight into links between solo living and well-being for several reasons. The normativity of extended coresidence in the parental home prior to marriage (Brinton 1992; Yamada 1999) suggests that, in contrast to other developed societies, the role of women’s growing economic independence and increasing valuation of privacy may be of limited importance in promoting solo living. The relatively high economic and social costs of establishing an independent household in Japan further suggest that explanations emphasizing the increasing attractiveness of single living may be of less relevance than in the U.S. or European countries. A second motivation for focusing on Japan is evidence that the country fares relatively poorly in comparative studies of happiness or emotional well-being. For example, the World Happiness Report ranked Japan below most other economically similar countries in terms of overall happiness (Helliwell, Layard, and Sachs 2013) and OECD data show that it has the highest proportion who report little or no interaction with people other than family members (OECD 2005). Substantial projected increases in the prevalence of one-person households (National Institute of Population and Social Security Research, NIPSSR hereafter, 2013) thus highlight the value of understanding the extent to which living alone is associated with levels of happiness, health, and perhaps other dimensions of individual well-being.

## 2. Background

### 2.1 One-person households in Japan

Figure 2 describes the trend in the prevalence of one-person households in the Japanese population from 1960, with projections through 2030. The increase over time is clear, with one-person households currently comprising one-third of all households. At the population level (i.e., all ages), one-person households are now the most common of the six major household types in Japan (the other five types are married couple alone, married couple with children, single parent with children, “other” family household – mostly three-generation households, and non-family households). Figure 3 presents the proportion of men and

women living in one-person households in 2010, by five-year age group. Age patterns are very different for men and women, with early-adulthood residence in one-person households more common among men and solo living at older ages more common among women. Census data also show marked regional differences in both the prevalence and age distribution of one-person households (not shown). In Tokyo and other large metropolitan areas, the prevalence is much higher, with one-person households comprising nearly half of all households. One-person households are also more heavily concentrated at younger ages in large urban areas.

Rapid population aging is partially responsible for the patterns observed in Figures 2 and 3, given the relatively high prevalence of one-person households at older ages. I therefore limit the analytical focus of this paper to ages 20–39, at which the impact of trends in marriage timing is more relevant. Figures 4 and 5 present trends in the percentage (and number) of individuals in this age range living in one-person households for men and women, respectively. During the period 1985–2010, change among men was concentrated in the 30s, with one-person households increasing from 13% to 19% among 30- to 34-year-olds and from 9% to 16% among 35- to 39-year-olds. For women, the patterns are even more striking, with 2–3 fold increases in the proportions living alone beyond age 25. The number of 20–39-year-olds living in one-person households (solid black lines) increased by 19% for men and by 89% for women over the twenty-five year period.

The fact that these trends in one-person households correspond closely to trends in age at first marriage (NIPSSR 2014) highlights the potential role of delayed marriage in explaining the increase in living alone. This is particularly important in a country like Japan, where the alternatives to marriage for young men and women are qualitatively different than in most Western societies. Of particular importance are the relatively low prevalence of non-marital cohabitation and the relatively high prevalence of coresidence with parents. Cohabitation experience has increased markedly in recent years (Iwasawa 2005; Tsuya 2006), but the average duration of cohabiting unions in Japan is relatively short (Raymo, Iwasawa, and Bumpass 2009), and the proportion of unmarried men and women in cohabiting unions at any given point in time is relatively low. For example, among unmarried women age 25–29 in the 2010 National Fertility Survey, only 2% were currently in a cohabiting union (NIPSSR 2012). Delayed marriage, in the absence of long-term cohabiting unions, is thus a potentially important reason for the observed increase in the prevalence of one-person households.

At the same time, however, the long-standing tendency for unmarried Japanese (especially women) to remain in the parental home until marriage presumably limits the impact of delayed marriage on growth in one-person households. Significant growth in the number of unmarried men and women living with parents has been the subject of much media attention, with critics arguing that this “immature” or “selfish” behavior contributes to lower fertility (via later marriage) and to lower economic growth (by limiting the formation of new households) (Yamada 1999). It is clear, however, that age-specific proportions of unmarried men and women coresiding with parents have actually remained relatively stable over time (Fukuda 2009; Raymo, and Ono 2007) and that the trend toward later marriage is the primary reason for growth in the number of unmarried adults living with parents.

Presumably, later and less marriage also contributes to growth in the number of young adults living in one-person households, but this relationship has received far less attention. This is an important omission if we believe that living arrangements play a key role in shaping experiences, exposures, and well-being during early adulthood.

## 2.2 Living alone and well-being

What are the implications of the large increase in living alone for the well-being of young Japanese adults in the context of later and less marriage? In contrast to research on the implications of living alone at older ages in Japan (e.g., Brown et al. 2002; Sun et al. 2007), attention to the relative well-being of young adults living alone is scarce. Research on the U.S. and other countries provides only limited guidance. Studies demonstrating that married men and women are happier and less depressed than their unmarried counterparts are plentiful (Waite and Gallagher 2000) and others have compared the emotional well-being of married and cohabiting men and women (Brown 2000), but recent efforts to evaluate relationships between household structure and well-being among the unmarried are less common (see Jamieson and Simpson 2013 and Klinenberg 2012 for exceptions).

To some degree, this presumably reflects the fact that living alone is now a common and normative part of the early life course. In the U.S., one-person households are the fastest growing type of household and are now one of the two most common types of household, along with married parents living with children (Vespa, Lewis, and Kreider 2013). Efforts to understand the implications of living alone for well-being in the U.S. were more common in the past, when marriage was relatively early and cohabitation was less prevalent than it is today (e.g., Anson 1988; Hughes and Gove 1981). The results of previous research are mixed, with some finding that living alone is associated with worse overall health (Anson 1988; Kawachi, Kennedy, and Glass 1999; Macran, Clarke, and Joshi 1996), higher levels of problematic alcohol use (Hughes and Gove 1981; Joutsenniemi et al. 2007), and lower psychological well-being (Harrison, Barrow, Gask, and Creed 1999). Others have found either that differences in well-being between the unmarried who live alone and those who live with others are small (Cramer 1993; Hughes and Gove 1981) or that those living alone actually fare better than those who are married (e.g., Denton and Walters 1999). Klinenberg's (2012) recent book *Going Solo* paints a very positive picture of living alone, but is based on select cases that tend to feature well-educated, highly-connected individuals.

I draw upon this earlier research from the U.S. and Europe to consider several possible mechanisms that might contribute to differences in the well-being of young adults living alone relative to their married counterparts and their unmarried counterparts coresiding with parents (or others). These mechanisms include economic resources, social isolation, monitoring, independence, and selection. I consider each in turn, summarizing hypothesized relationships and discussing how these relationships may be shaped by distinctive features of the Japanese context. I also focus attention specifically on the implications for happiness and subjective health – the two dimensions of well-being considered in the analyses presented below.

**Economic resources:** All else equal, living alone obviously costs more than living with others. Additional income, cost sharing, and economies of scale all contribute to lower costs in shared households. Living alone may thus be associated with relatively lower levels of happiness and health if economic well-being (in both absolute and relative terms) is positively correlated with these outcomes. This may be particularly relevant in the Japanese context where unmarried men and women who do not live on their own typically coreside with parents, an arrangement in which adult children's economic contributions to the household budget are often quite limited (Raymo and Ono 2007; Yamada 1999). The economic well-being, and by extension the happiness and health, of those living alone may also suffer from the high cost of establishing an independent household in Japan, where rents are high, apartments are unfurnished, and realtors often require large non-refundable deposits. High consumption aspirations (Yamada 1999) may accentuate these relationships to the extent that the ability to achieve aspirations is related to happiness and subjective health. Alternatively, it is possible that those in one-person households have higher incomes or access to parental resources that facilitate living alone in comfort. The potential implications of this kind of selection into one-person households are discussed further below. Evaluating these alternative scenarios requires either objective or subjective measures of individual and household economic well-being.

**Social isolation/loneliness:** Perhaps the most widely emphasized explanation for evidence of poorer health among those living alone is lower social integration and social support (e.g., House, Landis, and Umberson 1988; Hughes and Gove 1981; Hughes and Waite 2002). The argument is that those who live alone are less connected with others and that this social isolation results in more limited social support, which in turn contributes to lower levels of well-being. Empirical evidence to support this explanation is limited, however. Furthermore, some suggest that the relationship may actually be reversed, with higher levels of social engagement and participation among those living alone. This may be particularly true for more socioeconomically advantaged men and women living on their own (Klinenberg 2012). Expectations are similarly ambiguous in the Japanese context. On one hand, strong cultural valuation of parent-child bonds (Miyamoto, Iwakami, and Yamada 1997) and a history of social stigmatization of women's independent living prior to marriage (Brinton 1993) suggest that living alone may be associated with lower levels of well-being via isolation and loneliness. On the other hand, evidence that the bulk of young adults' socializing occurs within the context of work (Brinton 1993) suggests that living arrangements per se may have little to do with isolation or loneliness. Evaluating this mechanism requires measures of social integration and social support such as network size, perceived access to various types of support, frequency of contact with friends, or involvement in social organizations.

**Monitoring:** Closely related to the idea of social support is an emphasis on monitoring and shared lifestyle. One explanation for the apparent health benefits of marriage emphasizes the role of spouses in monitoring their partners' health behaviors (e.g., diet, exercise) and encouraging a healthier lifestyle (e.g., limiting unhealthy activities such as excessive drinking, drug use, and other risky behaviors) (Waite and Gallagher 2000). This kind of support or monitoring appears to be particularly important for understanding the health



benefits of marriage for men (Waite and Gallagher 2000). Among the unmarried in Japan, coresidence with parents presumably contributes to better health in similar ways. To the extent that young men and women living alone have more limited access to regular, healthy meals, less monitoring and discouragement of risky behavior, and less encouragement of regular hours, we would expect this group to have lower levels of happiness and health in comparison not only with married men and women, but also with their unmarried counterparts living with parents. Evaluating this mechanism requires information on health behaviors and lifestyle (e.g., drinking, drug use, exercise, sleep) although it may be difficult to distinguish the extent to which these characteristics are due to monitoring rather than differential selection into alternative living arrangements.

**Privacy/independence/freedom:** Assuming that a primary reason for living alone is a desire for independence and privacy (from parents, siblings, others) and that enjoyment of this autonomy is positively associated with happiness and subjective health, those living alone should fare better than their unmarried counterparts living with parents. Comparisons with the married are less clear, given that concepts such as privacy and freedom mean very different things for those who are married and those who are not. As described below, it is possible that the distinctive patterns of gender relationships in Japanese families may make the benefits of privacy, independence, and freedom particularly salient for women living on their own.

**Selection:** Previous research on the U.S. demonstrates that, to some degree, less favorable outcomes among those living alone reflects selection – specifically, the tendency for those with lower levels of socioeconomic resources to live alone (e.g., Joutsenniemi et al. 2007). Similar patterns of selection characterize solo living in the U.K. (Stone, Berrington, and Falkingham 2011). Furthermore, evidence that the positive association between marriage and multiple dimensions of health and well-being partially reflects selection into marriage (see Waite and Gallagher 2000 and Wood, Goesling, and Avellar 2007 for reviews) suggests that selection processes should result in lower levels of happiness and health among those living alone relative to those who are married. The implications of selection processes for comparisons of the unmarried living alone and living with others are less clear, but may be particularly important in the Japanese context given that extended coresidence with parents remains widespread. On one hand, if those who choose to live alone are either the most eager to embrace an independent lifestyle or those with access to greater economic resources (e.g., parental assistance with rent and other living expenses), levels of happiness and health may be higher for this group relative to their unmarried counterparts coresiding with parents. On the other hand, if young adults without access to family (due to distance or death) or with strained family relationships have a relatively high propensity to live alone, happiness and health may be relatively lower for this group. Both patterns of selection are likely to be operating, perhaps in offsetting ways, making the role of selection very difficult to evaluate. Access to longitudinal data that follow young adults as they move out of the parental home into independent living arrangements or marriage would allow for control of baseline levels of subjective health and other observable characteristics, but the inability to control for potentially important unobservable factors (e.g., quality of relationships with parents) would

remain. There is very little that can be done to understand patterns of selection in studies, like this one, that rely on cross-sectional data.

### 2.3 Gender differences

While men are more likely to live alone in many European countries (Jamieson, Wasoff, and Simpson 2009), studies in the U.S. and Canada indicate that young women are not only more likely to live alone, but also appear to fare better than men in independent living arrangements (Klinenberg 2012). Explanations for this pattern have focused on women's broader and more active social networks (Denton and Walters 1999). Japan's distinctive gender environment provides an interesting context in which to reevaluate these relationships. There are compelling reasons to expect that living alone is associated with better mental health outcomes for women in Japan, just as in the U.S. For example, abundant anecdotal and empirical evidence highlights large gender differences in social networks and social engagement beyond the workplace (e.g., Sasagawa 2006). Similarly, the highly asymmetric gender division of labor within Japanese families highlights the potential benefits of living with others for men. Within marriage, men's involvement in domestic work is particularly limited (Tsuya, Bumpass, Choe, and Rindfuss 2005). This is also true among unmarried men living with parents, but the gender difference is less pronounced given that unmarried women coresiding with parents also do relatively little domestic work (Raymo and Ono 2007). At the same time, however, differences in norms and expectations suggest that women living alone may not fare as well. Until recently, solo living for unmarried women was socially stigmatized, and normative support of continuous coresidence with parents prior to marriage was strong (Brinton 1993). In combination with limited social alternatives to marriage, this normative environment suggests that solo living is far more of an "incomplete institution" for women than for men in Japan, with potential consequences for gender differences in well-being among those who do live alone.

### 2.4 Socioeconomic differences

Although much of the popular literature on extended coresidence with parents prior to marriage paints a picture of luxury, with young singles benefitting from free room and board, performing little in the way of domestic work, and spending their earnings on travel, hobbies, and luxury goods (e.g., Yamada 1999), analyses of who actually coresides with parents suggests a rather different story. For example, Raymo and Ono (2007) find that women who delay marriage while living with parents are, on average, less advantaged and live with less-advantaged parents relative to those who marry earlier. I am not aware of any careful studies of the characteristics associated with solo living, but anecdotal evidence highlighting the condominium purchases of highly-educated, well-paid singles (especially women) (Hirayama and Izuhara 2008) suggests a possible interaction between socioeconomic status and living alone, with more advantaged singles benefiting more from this arrangement than their less advantaged counterparts.

## 3. Data and method

The analysis proceeds in two parts. In the first, I use published tables from the 1985 and 2010 censuses to evaluate the extent to which the increasing prevalence of one-person



households is explained by changes in marital behavior and changes in living arrangements (by marital status). In the second part, I use data from the 2000–2010 rounds of the Japan General Social Survey (JGSS) to ascertain the extent to which indicators of happiness and subjective health among unmarried young men and women living alone differ from those of their counterparts living with parents (or in other shared living arrangements).

### 3.1 The rise in one-person households: The role of changes in marriage behavior and changes in living arrangements by marital status

To ascertain the extent to which the growth in one-person households described in Figures 4 and 5 reflects changes in marriage behavior or changes in living arrangements within marital status categories, I first ask what the prevalence of one-person households in 2010 would have been if age-specific marital status distributions had remained at their 1985 values. I then ask what the prevalence of one-person households in 2010 would have been if living arrangements conditional on marital status had remained at their 1985 values. These straightforward standardization exercises facilitate an assessment of the relative importance of each component of change in the prevalence of one-person households. Given large gender differences in both the prevalence of one-person households and marriage timing, I examine data for men and women separately. The logic of these counterfactual analyses is shown in the following equation:

$$\frac{S}{P} = \sum_{y=1}^4 \sum_{x=20}^{39} \frac{S_x^y}{P_x^y} * \frac{P_x^y}{P}$$

S = number in one-person households between ages 20–39

P = population age 20–39

x = age (20–39, single years)

y = marital status (never married, married, widowed, divorced).

The proportion of the 20–39 year-old population (by sex) living in a one-person household ( $S \div P$ ) is the weighted sum of age- and marital status-specific proportions living in one-person households ( $S_x^y \div P_x^y$ ) with the weights being the age-specific proportions in each of the four marital status categories ( $P_x^y \div P$ ). Note that there are eight combinations of marital status and living arrangements ( $\{\text{never married, married, widowed, divorced}\} \times \{\text{living alone, living with others}\}$ ). Individuals with missing marital status were distributed across marital status categories according to the sex and age-specific distribution of those with observed marital status (i.e., marital status was assumed to be missing at random). Comparing the observed increase in the prevalence of one-person households with the calculated change in the two counterfactual scenarios just described allows for simple decomposition of the observed increase into the contributions of changes in marriage behavior and in the propensity to live alone conditional on marital status.

### 3.2 Living arrangements, happiness, and health

The Japanese General Social Surveys are nationally-representative surveys conducted annually from 2000–2003 and in 2005, 2006, 2008, and 2010. The pooled data file (across all eight survey years) includes 22,796 respondents between the ages of 20–89. As in the counterfactual analyses just described, I limit the analytical sample to men and women age 20–39 ( $n = 7,218$ ). The key independent variable in this set of analyses is a trichotomous indicator of respondents' living arrangements and marital status: unmarried and living alone, unmarried and living with others, or married. This more parsimonious classification of marital status and living arrangements (relative to the eight categories considered in the analyses of census data) is motivated by small cell size (e.g., only 3 married respondents in the JGSS data were living alone) and facilitates interpretation of results. I consider two measures of well-being that are consistently available across survey years: happiness and self-rated health. In contrast to happiness, which is a measure of emotional well-being, self-rated health refers to health generally and thus reflects both emotional health and physical health. Both of these indicators are measured on five-point scales, with higher values corresponding to greater well-being. Happiness ranges from unhappy to happy and self-rated health ranges from poor to excellent.

I estimate ordered logistic regression models for happiness and self-rated health as a function of the three-category living arrangements variable. Treating unmarried respondents who are living with others (typically parents) as the omitted category allows for straightforward evaluation of differences in well-being among the unmarried. Comparison of both groups of unmarried respondents with their married counterparts is also straightforward, using post-estimation Wald tests. All models control for age, sex, educational attainment, and survey year. I use a three-category measure of educational attainment: high school or less; vocational school or junior college; four-year university or more. Results of OLS models are substantively identical to the results of the ordered logistic regression models presented below (and are available upon request).

To evaluate the role of economic resources in shaping relationships between household structure and happiness/health, I include two subjective measures of economic well-being. The first is a measure of subjective social class that asked respondents to identify their location in Japanese society on a 10-point scale ranging from the very bottom (1) to the very top (10). The second is a five-point measure of relative income assessment ranging from substantially lower than average to substantially higher than average. The survey also contains measures of individual income and household income, but I have chosen to use the subjective measures in order to (a) minimize the number of cases lost to missing income data, (b) circumvent issues related to endogeneity of living arrangements (and marital status) and own income (especially for women), and (c) avoid the need for assumptions about income sharing within households. I also include a measure of employment status and type (not employed, regular employment, non-standard employment) as a rough proxy of economic well-being. If limited economic resources contribute to lower levels of emotional well-being among those living alone, as suggested earlier, the negative coefficient for one-person households should be attenuated when these measures of economic well-being are included in the models.

To evaluate the role of social isolation (or integration), I include measures of the frequency with which respondents get together with their friends and their participation in social organizations. Respondents were asked how often they get together with friends, with categorical response options ranging from never to almost every day. Based on the results of preliminary analyses, I collapsed this variable into a dichotomous indicator distinguishing those who reported getting together with friends at least once a month from those who reported less frequent gatherings. This question was only asked of half of the respondents to the 2003 and 2006 surveys, so the size of the analytic sample is reduced accordingly. The measure of participation in social organizations is constructed based on responses to questions about participation in seven different kinds of organizations: political groups, religious groups, sports groups, volunteering groups, citizens' groups, hobby-related groups, and industry organizations. Based on the results of preliminary analyses, I have dichotomized responses to these questions, distinguishing those involved in at least one type of organization from those not involved in any of the seven types of groups.

Finally, by estimating interactions between the living arrangements variable and both sex and educational attainment, I evaluate the posited differences in the relationship between living alone and both happiness and health. Unfortunately, the Japanese GSS does not contain information that would allow for evaluation of the posited role of spousal monitoring or enjoyment of privacy and independence in shaping relationships between living alone and happiness or health. Results should be evaluated with this caveat in mind.

## 4. Results

### 4.1 The rise in one-person households – the role of changes in marriage behavior and living arrangements

As shown in Figure 6, the proportion of 20–39 year-old men living in one-person households increased from .16 in 1985 (black bar) to .22 in 2010 (gray bar). For women, the proportion more than doubled from .06 to .14. The hatched and striped bars are the counterfactual proportions calculated by holding age-specific marital status distributions and age- and marital status-specific proportions living in one-person households (respectively) constant at their 1985 values. These figures represent the counterfactual prevalence of one-person households that would have been observed in 2010, if marriage behavior had not changed (hatched bars) or if living arrangements (by marital status) had not changed since 1985 (striped bars). For men and women, the hatched bars are both lower than the observed 2010 value, indicating that changes in marital status contributed to the observed rise in one-person households. The fact that the striped bars are taller than the hatched bars indicates that, for both men and women, changes in living arrangements (conditional on marriage) were less important than changes in marriage in contributing to the rise in one-person households. Indeed, changes in living arrangements (by marital status) appear to explain none of the increase in one-person household among men. The proportion of the total observed increase in one-person households for men that is due to changes in marriage behavior – i.e.,  $(([\text{observed 2010 value} = \text{gray bar}] - [\text{counterfactual proportion holding marital status constant at 1985 values} = \text{hatched bar}]) / ([\text{observed 2010 value}] - [\text{observed 1985 value} = \text{black bar}])))$  is 1.0 and the proportion due to changes in household structure is .

05. For women, the corresponding proportions are .78 and .30. The remaining 5–8% of the observed difference not due to changes in marital status or household structure can be attributed to the third, interaction component (negative in sign) of this simple decomposition procedure.

Because these overall measures may obscure informative differences across the 20-year age range, I replicate this standardization procedure at each single year of age. The results are presented in Figures 7 (men) and 8 (women). In these figures, the solid black line is the observed age-specific proportion living in one-person households in 1985, the broken black line is the proportion observed in 2010, and the gray lines marked with circles and triangles are the counterfactual proportions calculated by holding marital status and living arrangements constant at their 1985 levels, respectively. Comparison of the gray circle line with the observed (broken) line for 2010 thus indicates the amount of the age-specific increase in one-person households that can be attributed to changes in marital status. Similarly, comparison of the gray triangle line and the observed 2010 line shows us how much of the observed change can be attributed to changes in living arrangements (conditional on marital status).

For men, the decline in solo living at ages 20–24 is explained primarily by changes in living arrangements. Beyond age 25, however, the rise in one-person households is due almost entirely to changes in marriage behavior. More specifically, the small decline in the prevalence of one-person households among 20–24 year-old men reflects a decline in the propensity for never married men to live alone that is offset, to some extent, by a small increase in the proportion never married at these ages. Beyond age 25, however, the trend toward later and fewer marriages (and to a lesser extent, the increase in divorce) accounts for nearly all of the growth in one-person households for men.

In contrast to the findings on young men, the propensity for never married 20–24 year-old women to live alone increased over time, accounting for much of the increase in one-person households for this age group. Beyond age 25, however, the relative importance of changes in women's marriage and changes in their living arrangements conditional on marriage reverses, with the trend toward later and fewer marriages accounting for an increasing proportion of the rise in one-person households. Beyond age 30, the growing prevalence of never married women (and, to a lesser extent, formerly married women) accounts for all of the increase in one-person households.

## 4.2 Living arrangements and emotional well-being

Table 1 presents descriptive statistics for the variables used in analyses of the JGSS data, by living arrangements. Bold numbers indicate mean values of continuous variables that are significantly different from those for the unmarried living alone (based on t tests from bivariate linear regression estimates) and asterisks indicate categorical variables that are significantly associated with living arrangements (based on chi-square tests). The first four rows show that both happiness and self-rated health are highest among the married, and lowest among the unmarried living alone. However, the magnitude of these differences is rather small, with the two groups of unmarried respondents differing by no more than one-seventh of a standard deviation in the outcome of interest. Differences in self-rated health

across the three groups are not statistically different from zero. Other variables show that those living alone are more likely to be men, have higher levels of education, be slightly older, and resemble their unmarried counterparts living with others in terms of subjective social status and financial well-being. The proportion seeing friends regularly is similar among both groups of unmarried respondents, but a somewhat higher proportion of those living alone reports belonging to at least one social organization. In general, the differences between unmarried Japanese men and women living alone and those living with others are smaller in these data than suggested by the literature summarized earlier.

Tables 2 and 3 present results for the models of happiness and self-rated health, respectively. Looking first at Table 2, Model 1 shows that the unmarried living alone are significantly less happy and the married are significantly and substantially more happy than their unmarried counterparts living with others. The odds of being happy vs. somewhat happy (or being at happiness level  $n$  vs. happiness level  $n-1$ , more generally) are 21% lower for the unmarried living alone relative to the unmarried living with others. Happiness declines with age and is higher among women and among the more highly educated. Model 2 shows that both measures of subjective economic well-being are positively associated with happiness and that those in regular employment are significantly happier than those not employed and those in non-standard employment. However, inclusion of these variables does little to alter the relationships between living arrangements and happiness estimated in Model 1. Similarly, in Model 3 both measures of social integration are positively associated with happiness, but their inclusion does not alter the general conclusion that living alone is associated with lower levels of happiness (compared to both the unmarried living with others and the married respondents). This is not surprising, given the relatively small differences in social integration across living arrangements described in Table 1.

Including interactions between sex and living arrangements in Model 4 shows that living alone is not significantly related to unmarried men's happiness and that the coefficient for living alone does not significantly differ by sex (i.e., the interaction term is not significantly different from zero). It is important to note, however, that among unmarried women (but not men), those living alone report significantly lower levels of happiness than their unmarried counterparts living with others. Although not directly related to the questions motivating this paper, it is interesting that marriage is associated with significantly lower levels of happiness among women (relative to men). None of the interactions between educational attainment and living arrangements in Model 5 are significantly different from zero. Levels of happiness are significantly lower for those living alone relative to their unmarried counterparts living with others among junior college/vocational school graduates (at  $p < .10$ ), but not among those with a high school degree or less or among university graduates.

Table 3 shows that married respondents report better self-rated health, but living alone is not associated with worse subjective health among the unmarried. The coefficient for living alone is negative (i.e., odds ratio is less than one), but not significantly different from zero. Other coefficients are similar to those in the models for happiness: self-rated health declines with age and is higher among women and university graduates. Subjective economic well-being and social integration are both associated with better self-rated health, but the inclusion of these measures (along with employment status) does not alter the estimated

coefficients for living arrangements (and marital status). Models 4 and 5 provide no evidence of gender or educational differences in the relationship between living alone and self-rated health. In no case does the self-rated health of those living alone differ from their unmarried counterparts living with others. Although not directly related to the questions motivating this study, Models 4 and 5 do indicate some significant differences in the relationship between marriage and health. Among the married respondents, women and junior college/vocational school graduates report higher levels of self-rated health than men and those with lower levels of education.

## 5. Discussion

The increasing prevalence of young adult one-person households in Japan is a major focus of the real estate and service industries, but has received relatively little scholarly attention. Despite the proliferation of one-person housing, omnipresent convenience stores filled with individually-packaged items, and numerous web sites providing tips on “*hitori-gurashi*” (single living), we know very little about the mechanisms underlying this trend, the characteristics associated with living alone, or the potential implications of solo living for well-being. My primary goal in this paper was to provide an empirical foundation from which to begin answering these questions.

Using census data, I have shown that the rise in one-person households among men and women age 20–39 is primarily the result of changes in marriage behavior. Importantly, these relationships differ by both age and sex. The trend toward later marriage explains all of the increase in one-person households for men and about three-fourths of the increase for women. For women, the remainder is explained by changes in living arrangements (conditional on marital status) and these changes in living arrangements are more important for explaining the rise in one-person households at younger ages, whereas changes in marriage behavior are more important at older ages. Subsequent research should examine factors underlying the observed changes in living arrangements conditional on marital status for young women. These might include changing parent-child relationships, increasing desire for independence, a growing social acceptance of living alone, increased access to attractive housing options, and growing financial independence. It is important to note, however, that despite the increase in living alone, young unmarried Japanese remain far more likely than their counterparts in many other wealthy countries to coreside with their parents.

In the U.S. and other countries where extended coresidence with parents is uncommon, scholarly interest in the relative well-being of young adults living on their own is limited. Despite substantial media attention to Klinenberg’s recent book *Going Solo*, most research on the relative well-being of those living in one-person households was conducted years ago when this was a less common arrangement. Prominent theories suggested that the higher costs of living alone and the social isolation it entails should contribute to lower levels of emotional well-being. Extending these ideas to the Japanese context, I examined General Social Survey data from the period 2000–2010 to produce three main findings. First, living alone is associated with significantly lower levels of happiness, but differences between those living alone and those coresiding with parents are not substantively large. For example,



in Model 1, the difference between the unmarried living alone and those living with others ( $1.00 - 0.79 = 0.21$ ) is half the difference between those with a high school degree or less and those with university education ( $1.00 - [1.00 \div 1.72] = 0.42$ ). This general pattern of results is similar to a number of earlier studies that found lower levels of well-being among young men and women living alone in the U.S.

Second, subjective economic well-being and social engagement are positively associated with happiness and health, but do not explain the observed differences between young unmarried men and women living alone and their counterparts living with others. Levels of economic well-being and social engagement, as measured in the JGSS, are similar for those living alone and those living with parents. If these findings are confirmed with other data sources, we will need to look beyond economic well-being and social integration to understand why those living alone fare less well than their counterparts living with parents. Potentially relevant factors such as emotional and instrumental support and monitoring provided by coresident parents, adherence to normative expectations about coresidence with parents (especially for women), or other correlates of self-selection into different living arrangements could not be considered due to data limitations. Attention to alternative mechanisms such as these is an important task for subsequent research on the link between solo living and well-being.

Third, there is little to suggest that relationships between living alone and happiness or health differ by sex or socioeconomic status. The only significant differences from Models 4 and 5 indicated that living alone is associated with relatively lower happiness among women (but not men) and among junior college/vocational school graduates (but not those in the lowest and highest educational categories).

Projected trends in marriage suggest that the prevalence of one-person households is likely to continue to increase among young adults in Japan. According to recent projections, nearly one-fourth of those born after 1985 will never marry (NIPSSR 2013), a trend that should result in further growth in living alone not only among those in young adulthood, but also in middle and later life. Additional efforts to understand who lives alone, why, under what circumstances, and for how long are thus of critical importance for understanding how demographic and social changes are reshaping lives in one society that has, until recently, been characterized by a highly-structured, homogeneous work and family life course (Brinton 1992). Comparison of the Japanese experience with that in other “familistic” countries where marriage behavior and attitudes have changed rapidly (e.g., Southern Europe, East Asia) may provide important insights into the ways in which the causes and consequences of increases in one-person households are shaped by social, political, and economic context.

## Acknowledgements

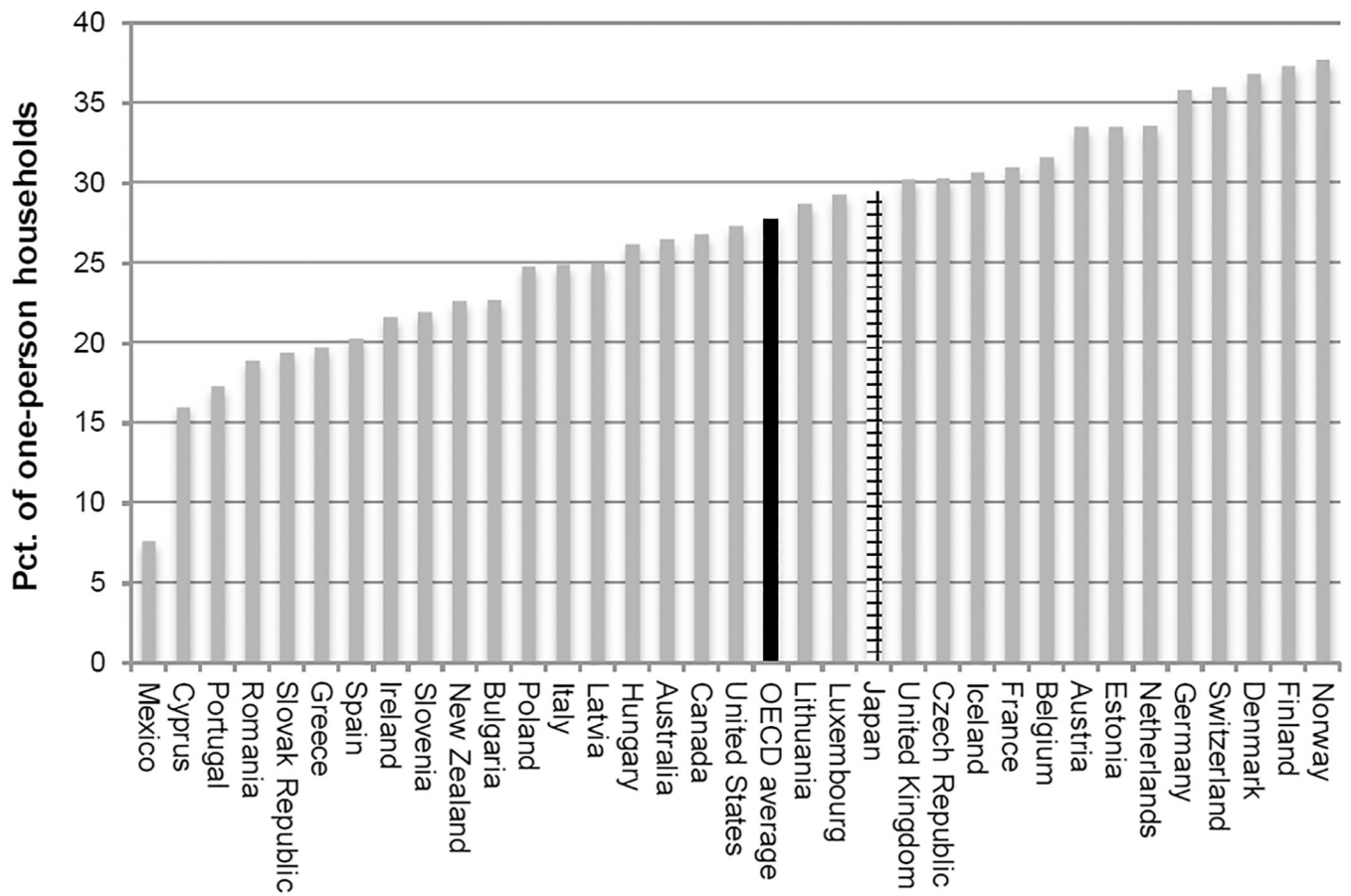
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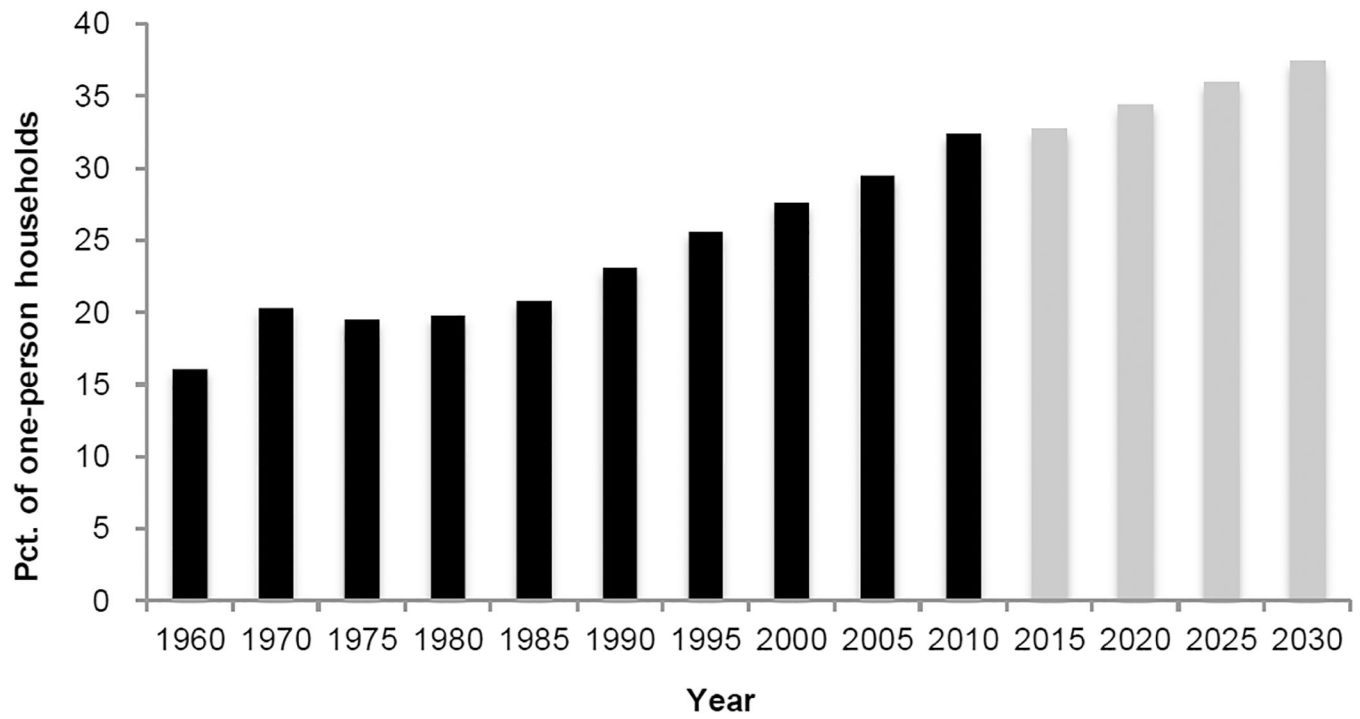
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**Figure 1: Prevalence of one-person households in OECD countries, 2010**

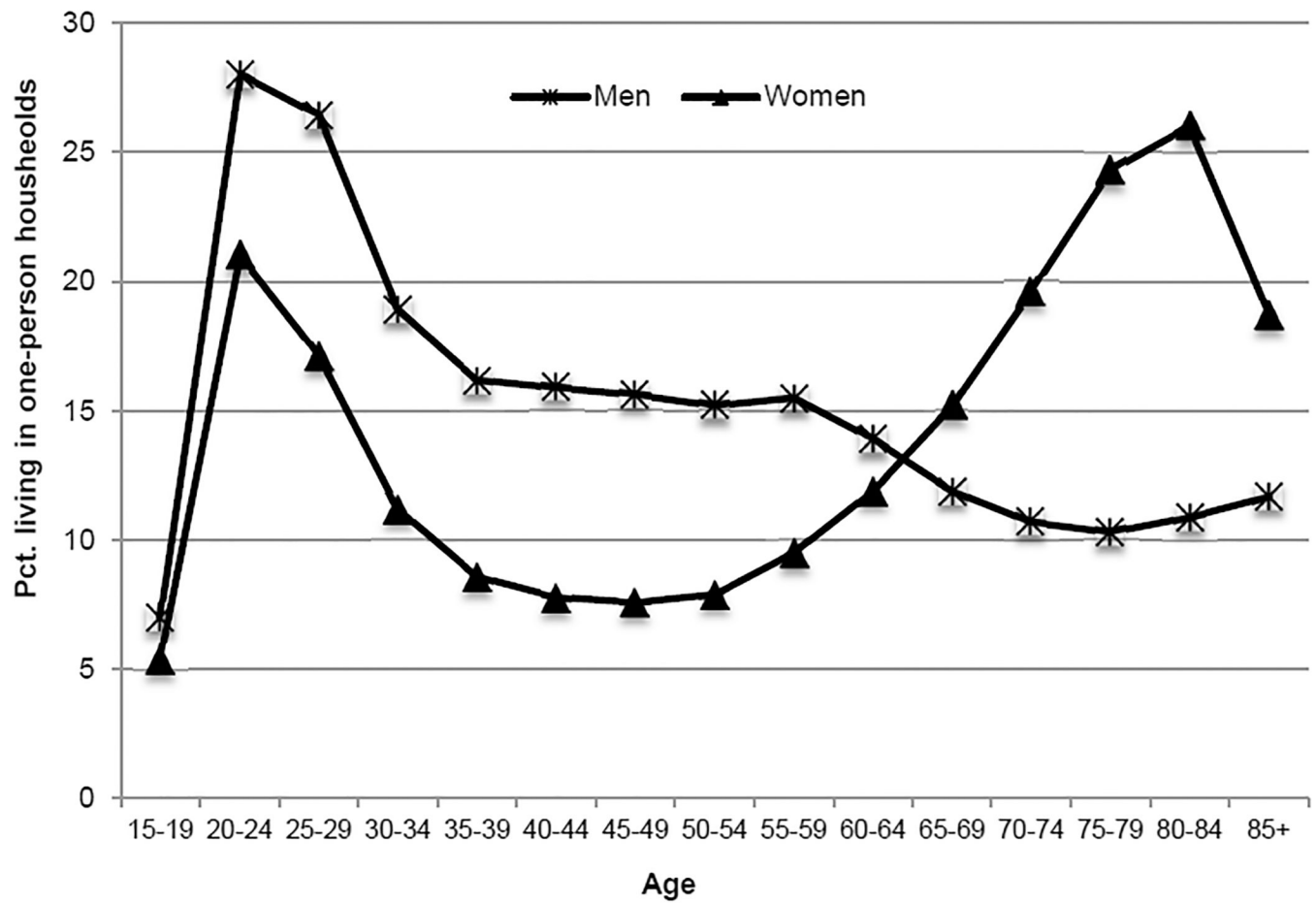
Source: OECD social indicators data base (<http://www.oecd.org/els/soc/database.htm>).



**Figure 2: Trends in the prevalence of one-person households in Japan, 1960–2030**

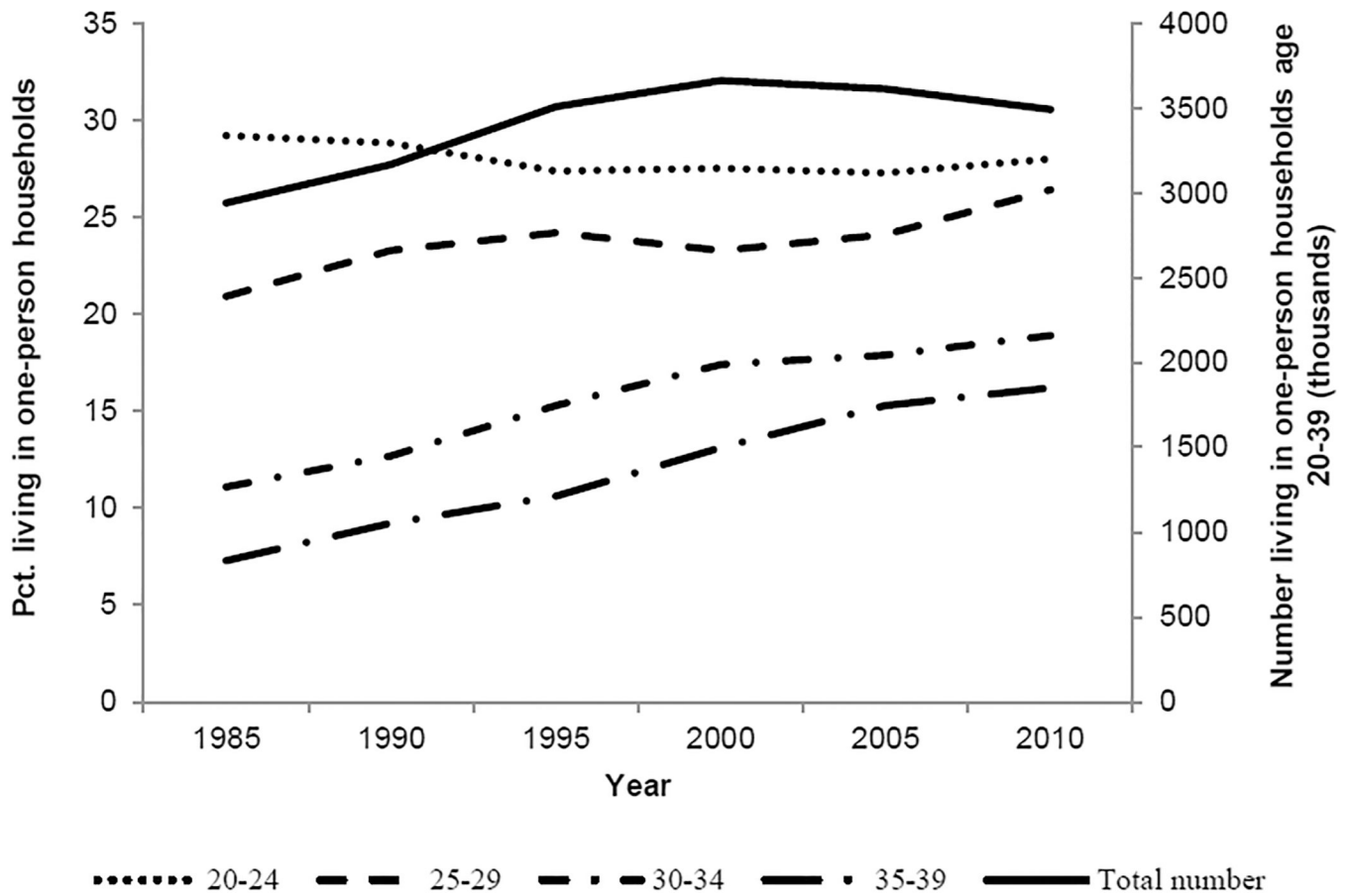
*Source:* Latest demographic statistics 2014. Tokyo: National Institute of Population and Social Security Research.



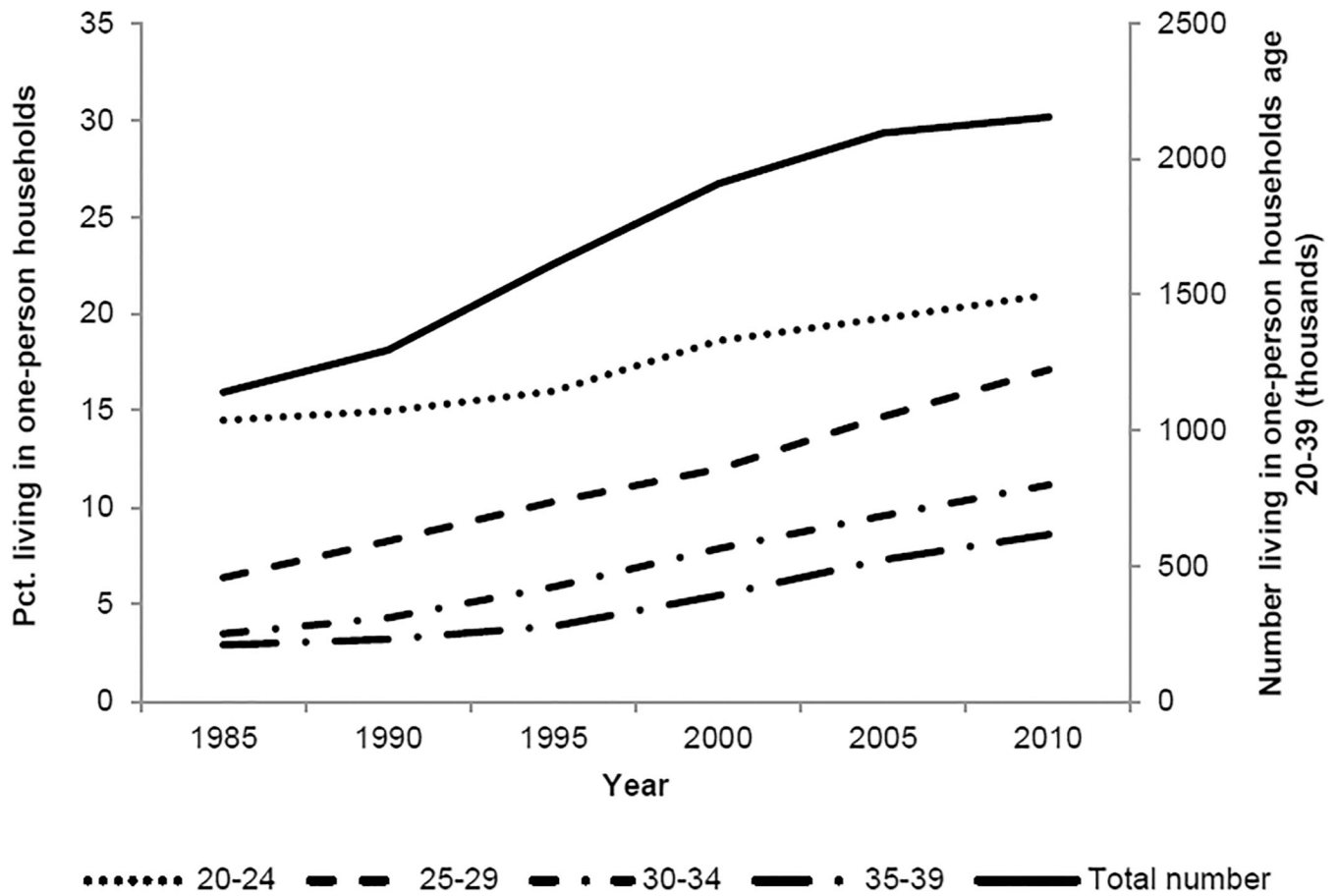


**Figure 3: Percent living in one-person households, by sex and age (2010)**

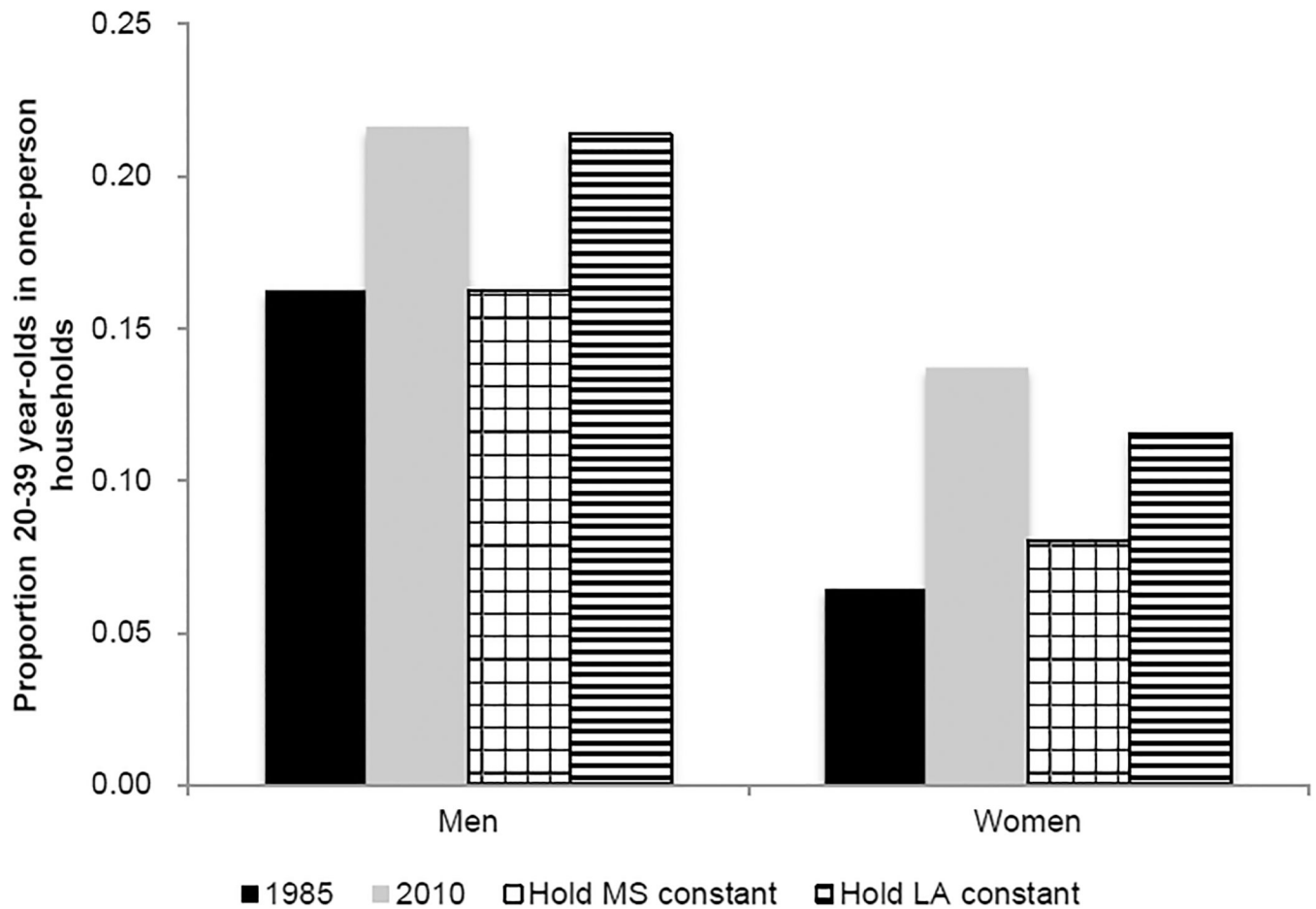
*Source:* Latest demographic statistics 2014. Tokyo: National Institute of Population and Social Security Research.



**Figure 4: Age-specific prevalence of one-person households for men, 1985–2010**  
*Source:* Latest demographic statistics 2014. Tokyo: National Institute of Population and Social Security Research.



**Figure 5: Age-specific prevalence of one-person households for women, 1985–2010**  
*Source:* Latest demographic statistics 2014. Tokyo: National Institute of Population and Social Security Research.



**Figure 6: Observed and counterfactual prevalence of one-person households in 1985 and 2010, by sex**

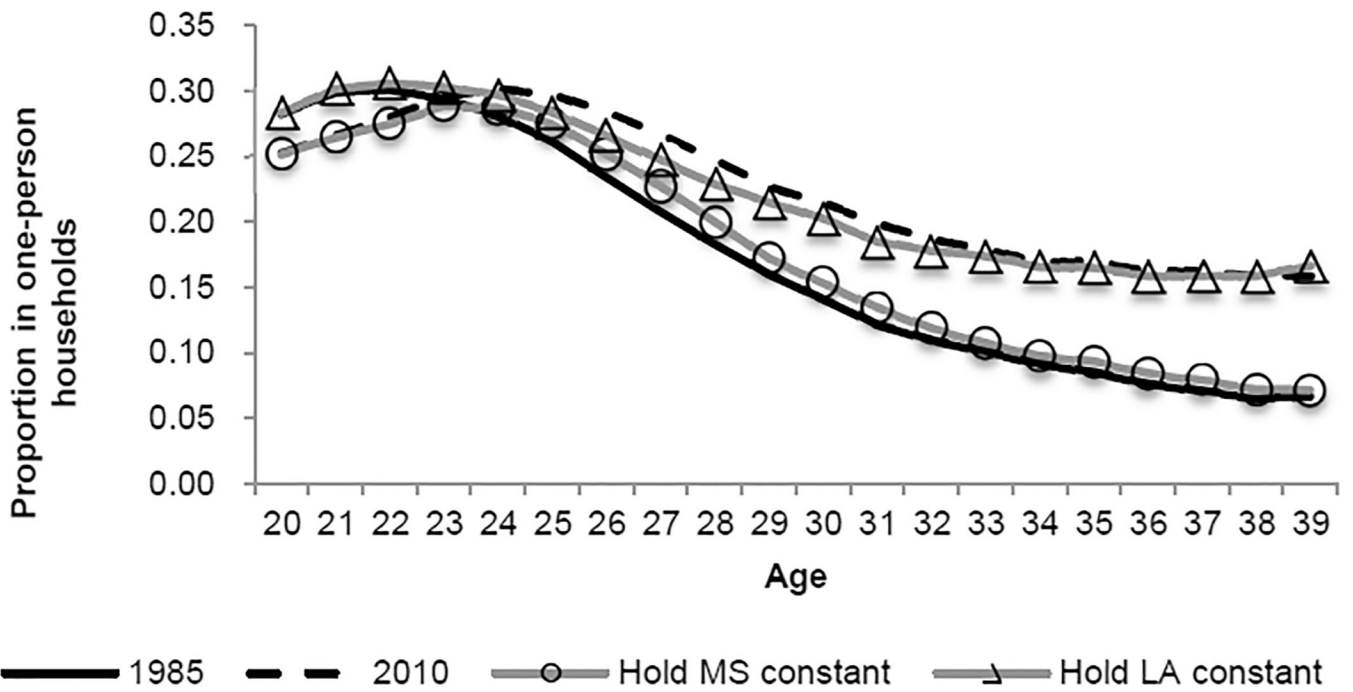
*Note:* MS = Marital status, LA = Living arrangements.

*Data sources:*

1985 online census data: Table 006 (Total Population/Japanese Population Age 15 and Over in All Areas and Densely Populated Areas, by Sex, Single Year of Age, and Marital Status in the Whole Country, Urban Areas, Rural Areas, and Prefectures) and Table 01301 (Number of Men and Women Living in One-Person Households, by Single Year of Age and Marital Status in the Whole Country, Urban Areas, and Rural Areas).

2010 online census data: Table 8-1 (Number of Men and Women, by Household Type, Household Size, Marital Status, and Single Year of Age in the Whole Country, Urban Areas, and Rural Areas).

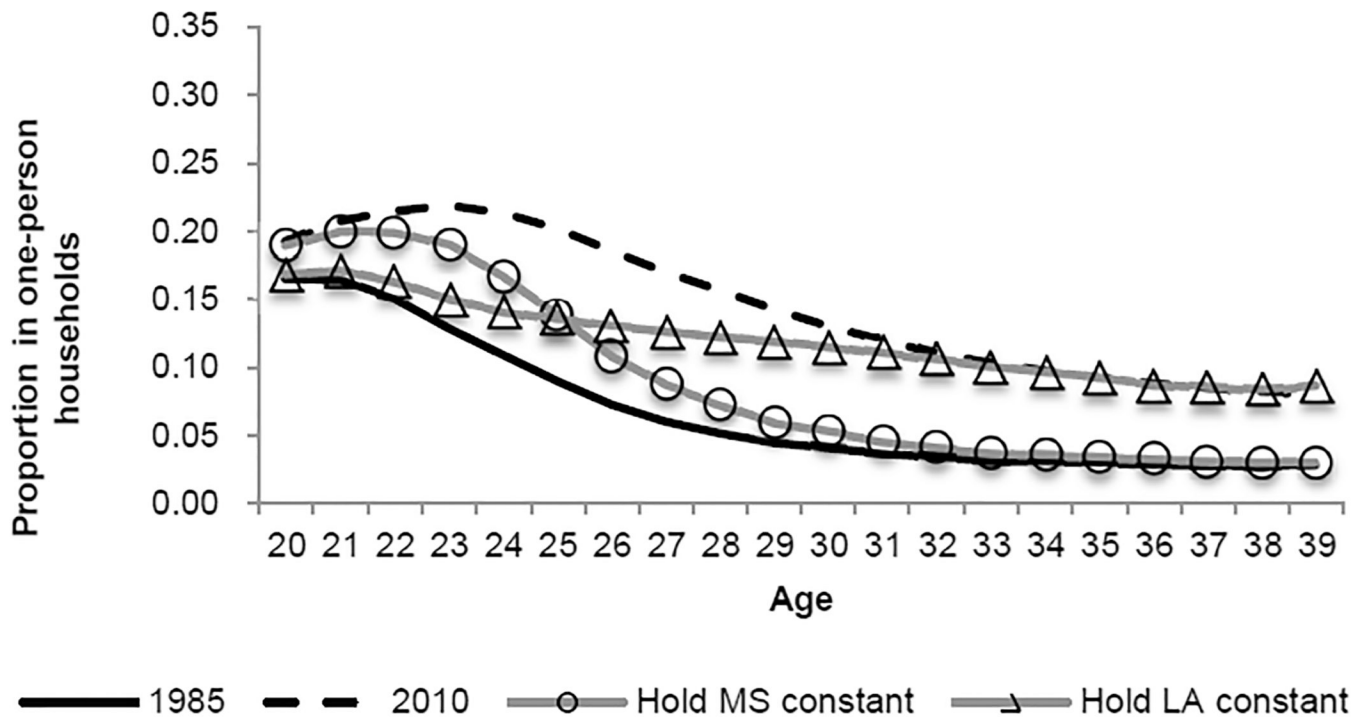
<http://www.e-stat.go.jp/SG1/toukeidb/GH07010101Forward.do>.



**Figure 7: Observed and counterfactual prevalence of one-person households for men in 1985 and 2010, by age**

*Note:* MS = Marital status, LA = Living arrangements.

*Data sources:* See Figure 6.



**Figure 8: Observed and counterfactual prevalence of one-person households for women in 1985 and 2010, by age**

*Note:* MS = Marital status, LA = Living arrangements.

*Data sources:* See Figure 6.



**Table 1:**

Descriptive statistics, by living arrangements and marital status

Variable	Total	Unmarried, living alone	Unmarried, living with others	Married
	Mean/proportion	Mean/proportion	Mean/proportion	Mean/proportion
<i>Happiness (range 1–5)</i>	3.87 (0.95)	3.47 (0.97)	<b>3.61</b> (0.96)	<b>4.11</b> (0.86)
<i>Self-rated health (range 1–5)</i>	3.77 (1.07)	3.71 (1.10)	3.76 (1.08)	3.79 (1.07)
<i>Age (range 20–39)</i>	30.60 (5.62)	28.53 (5.52)	<b>27.30</b> (5.41)	<b>33.19</b> (4.29)
<i>Sex*</i>				
Male	0.46	0.62	0.50	0.41
Female	0.54	0.38	0.50	0.59
<i>Educational Attainment*</i>				
High school or less	0.49	0.33	0.45	0.54
Junior college/vocational school	0.21	0.16	0.20	0.22
University	0.30	0.51	0.35	0.24
<i>Subjective social status (range 1–10)</i>	5.16 (1.63)	5.13 (1.82)	4.97 (1.69)	<b>5.30</b> (1.54)
<i>Comparative financial well-being (range 1–5)</i>	2.67 (0.81)	2.58 (0.87)	2.61 (0.84)	<b>2.72</b> (0.77)
<i>Employment Status*</i>				
Not working	0.23	0.13	0.18	0.28
Regular employment	0.52	0.68	0.55	0.48
Non-standard employment	0.18	0.15	0.22	0.17
Self-employment	0.06	0.04	0.05	0.07
Missing employment status	0.01	0.00	0.01	0.01
<i>Frequency of getting together with friends*</i>				
Less than once a month	0.38	0.22	0.24	0.50
Once a month or more	0.62	0.78	0.76	0.50
<i>Membership in any social organizations*</i>				
No	0.74	0.69	0.74	0.74
Yes	0.26	0.31	0.26	0.26
N	6,045	487	2,272	3,286
Proportion of total N	1.00	0.08	0.38	0.54

*Notes:*

- (a) Standard deviation of continuous variables shown in parentheses  
 (b) Bold font indicates that mean is significantly different from that of unmarried living alone at  $p < .05$   
 (c) \*indicates that variable is not independent of living arrangements (at  $p < .05$ )

**Table 2:**

Estimated odds ratios from ordered logistic regression models of happiness

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Living arrangements</i>					
Unmarried, living with others <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Unmarried, living alone	0.79 *	0.80 *	0.79 *	0.93	0.78
Married	3.82 **	3.76 **	3.96 **	5.51 **	4.00 **
Age	0.96 **	0.95 **	0.95 **	0.95 **	0.95 **
<i>Sex</i>					
Male <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Female	1.38 **	1.49 **	1.50 **	2.05 **	1.49 **
<i>Sex x living arrangements</i>					
Female x unmarried, living alone				0.76	
Female x married				0.52 **	
<i>Educational Attainment</i>					
High school or less <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Jr. college/vocational school	1.34 **	1.22 **	1.19 *	1.18 *	1.29 *
University	1.72 **	1.43 **	1.40 **	1.36 **	1.36 **
<i>Education x living arrangements</i>					
Jr. college/vocational x unmarried, living alone					0.76
University x unmarried, living alone					1.15
Jr. college/vocational x married					0.89
University x married					1.04
<i>Subjective social status (range 1–10)</i>					
		1.17 **	1.16 **	1.16 **	1.16 **
<i>Comparative financial well-being (range 1–5)</i>					
		1.26 **	1.25 **	1.26 **	1.25 **
<i>Employment Status</i>					
Not working		0.77 **	0.79 **	0.92	0.80 **
Regular employment <sup>a</sup>		1.00	1.00	1.00	1.00
Non-standard employment		0.77 **	0.78 **	0.86 #	0.78 **
Self-employment		1.02	1.00	1.07	1.00
Missing employment status		1.35	1.40	1.50	1.40
<i>Frequency of getting together with friends</i>					
Less than once a month (omitted)			1.00	1.00	1.00
Once a month or more			1.22 **	1.21 **	1.22 **
<i>Membership in any social organizations</i>					
No <sup>a</sup>			1.00	1.00	1.00
Yes			1.32 **	1.32 **	1.32 **
<i>Survey year</i>					

	Model 1	Model 2	Model 3	Model 4	Model 5
2000 <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
2001	1.27 *	1.32 **	1.32 **	1.32 **	1.32 **
2002	1.05	1.08	1.06	1.06	1.06
2003	1.06	1.14	1.21 #	1.21 #	1.22
2005	1.17	1.29 *	1.29 *	1.29 *	1.29 *
2006	1.27 *	1.33 **	1.32 **	1.31 **	1.32 **
2008	1.34 **	1.43 **	1.41 **	1.40 **	1.40 **
2010	1.44 **	1.51 **	1.50 **	1.47 **	1.50 **
<i>Cut 1</i>	-4.75	-3.70	-3.54	-3.30	-3.53
<i>Cut 2</i>	-2.82	-1.74	-1.57	-1.32	-1.56
<i>Cut 3</i>	-0.79	0.34	0.52	0.78	0.53
<i>Cut 4</i>	0.88	2.06	2.25	2.52	2.26
N	4,861	4,861	4,861	4,861	4,861
log-likelihood	-6,038	-5,942	-5,925	-5,911	-5,924
degrees of freedom	13	19	21	23	25
p value of likelihood ratio test		0.00	0.00	0.00	0.74

Note:

\*\*  
p < .01,

\*  
p < .05,

#  
p < .10

<sup>a</sup>  
omitted category

**Table 3:**

Estimated odds ratios from ordered logistic regression models of self-rated health

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Living arrangements</i>					
Unmarried, living with others <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Unmarried, living alone	0.94	0.97	0.96	0.98	0.99
Married	1.28 **	1.21 **	1.26 **	1.06	1.19 *
<i>Age</i>	0.97 **	0.97 **	0.97 **	0.97 **	0.97 **
<i>Sex</i>					
Male <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Female	1.19 **	1.13 *	1.12 *	0.97	1.14 *
<i>Sex x living arrangements</i>					
Female x unmarried, living alone				0.88	
Female x married				1.42 **	
<i>Educational Attainment</i>					
High school or less <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
Jr. college/vocational school	1.09	1.05	1.03	1.04	0.86
University	1.35 **	1.21 **	1.19 **	1.21 **	1.19 #
<i>Education x living arrangements</i>					
Jr. college/vocational x unmarried, living alone					0.91
University x unmarried, living alone					0.95
Jr. college/vocational x married					1.39 *
University x married					0.99
<i>Subjective social status (range 1–10)</i>		1.07 **	1.07 **	1.07 **	1.07 **
<i>Comparative financial well-being (range 1–5)</i>		1.21 **	1.19 **	1.19 **	1.20 **
<i>Employment Status</i>					
Not working		1.08	1.10	1.00	1.07
Regular employment <sup>a</sup>		1.00	1.00	1.00	1.00
Non-standard employment		1.10	1.10	1.04	1.08
Self-employment		1.42 **	1.41 **	1.36 **	1.40 **
Missing employment status		1.11	1.12	1.09	1.11
<i>Frequency of getting together with friends</i>					
Less than once a month (omitted)			1.00	1.00	1.00
Once a month or more			1.18 **	1.19 **	1.18 **
<i>Membership in any social organizations</i>					
No <sup>a</sup>			1.00	1.00	1.00
Yes			1.12 *	1.12 *	1.12 *
<i>Survey year</i>					

	Model 1	Model 2	Model 3	Model 4	Model 5
2000 <sup>a</sup>	1.00	1.00	1.00	1.00	1.00
2001	1.10	1.10	1.10	1.10	1.10
2002	1.00	1.01	1.00	1.00	1.00
2003	1.05	1.07	1.09	1.09	1.09
2005	1.42 **	1.49 **	1.48 **	1.48 **	1.48 **
2006	1.19 #	1.18 #	1.17	1.17	1.17
2008	1.46 **	1.51 **	1.50 **	1.49 **	1.49 **
2010	1.52 **	1.55 **	1.54 **	1.56 **	1.54 **
<i>Cut 1</i>	-4.39	-3.62	-3.50	-3.63	-3.54
<i>Cut 2</i>	-2.42	-1.65	-1.52	-1.66	-1.57
<i>Cut 3</i>	-0.88	-0.10	0.04	-0.10	-0.01
<i>Cut 4</i>	0.29	1.09	1.23	1.09	1.18
N	5,435	5,435	5,435	5,435	5,435
log-likelihood	-7,513	-7,474	-7,466	-7,460	-7,462
degrees of freedom	13	19	21	23	25
p value of likelihood ratio test		0.00	0.00	0.00	0.09

Note:

\*\*  
p < .01,

\*  
p < .05,

#  
p < .10

<sup>a</sup>  
omitted category