Who will live alone in China? One-person Households in China, 2010 to 2050

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The rise of one-person households (OPH) — fastest growing HH type

- Belcher (1967) - death and divorce as important factors in the rise of one-person households
- Burch & Matthews (1987) - one of the key demographic characteristic of developed societies
- Currently, in many European countries, one third of their total households has been made of those who live with any companions (OECD 2013).
- By 2020, four out of the top ten countries with the highest OPH numbers come from Asia, with China and India taking the lead
- OPH in Asia has recently drawn substantial attentions from academics (e.g. Yeung and Chung 2015, Demographic Research, V32).
Living Alone: One-person Households in Asia
Yeung and Cheung, 2015, Demographic Research V.32, A Special Issue
1990: 17 million, 5%  →  2010: 58 million, 15%

Trend of One-Person Households in China National Trend (1995-2011)

Population Living in a One-person Household (in 00,000 persons)

Year

Sources: China Statistical Yearbook, 1996 - 2012

Figure 2: Percentage of population living in one-person households in China, 1982–2005

Source: Chung and Yeung (2015), *Demographic Research*
Key factors of solo-living in China

Three main sets of factors – demographic changes, socioeconomic development and internal migration:
- declined marriage, fertility and increase in divorce (Ogden and Hall, 2004)
- Geographic movement (Jamieson and Simpson, 2013; Zhao & Chen, 2008)
- urbanization, economic development, individualistic value, privacy (Klineberg 2012; Stone et al. 2011)

Chung and Yeung (2018) – contextual and individual characteristics
- the primary reason older adults live alone is widowhood.
- For younger adults, socioeconomic characteristics such as income and educational attainment are prominent factors, and internal migration also plays an important role.
- The high concentration of one-person households in economically developed areas can largely be accounted for by the compositions of individual characteristics in the area.
Heterogeneity of one-person household

- OPHs a heterogeneous group with different contexts and motivations (Gu, Feng and Yeung 2018; Chung and Yeung, 2018); Living alone not necessarily involuntary (Kislev, 2019)

- widowed in old age with or without children

- young people who migrate from rural to urban areas for better economic opportunities

- high socioeconomic status who choose to living alone as a lifestyle of more freedom and privacy.

- Disadvantaged or highly educated females/M who are not married, or those males/F who have divorced/separated in the middle-age or could not find a spouse.

- In 2005, China, single OPH outgrew widowed as the largest group (33.32%), and married OPH also accounted for a larger proportion (30.37%) of the total. Widowed OPH only accounted for 30.18%. (Chung and Yeung, 2015)
Implications of one-person household

critical influence along multiple social and economic dimensions

- individual life style and well-being
- family and household functioning
- Social cohesion, role of community
- resources/energy consumption
- Infrastructure, developmental sustainability
- Fundamental change to basic unit of production, consumption, socialization, social network and support
Aim of the paper

- project future trend of one-person households in China from 2010 to 2050, and to systematically examine this trend by demographic factors such as age, gender, rural/urban residence, and by social factors such as education, marital status, and health of old age.

- We expect these detailed projections could provide valuable information to understand the change of this special type of household and better inform the relevant policymaking.

- a promising alternative to the traditional headship rate method in the household projection

- an individual-based macro-simulation method, which simulates the changes of household based on individuals grouped by age, sex, race, marital/union status, parity, and number of co-residing children/parents, rural/urban residence (rural and urban areas are estimated separately)

- it is also a cohort-component method, in which projection of changes in demographic components (fertility, mortality, marriage/union, co-residence of children/parents, and migration) are made for each of the cohorts that produce household distributions in future years
Method: ProFamy (continue)

- directly models the household size, which is usually not viable with traditional methods. Recent studies revealed that the headship-rate method, without incorporating the household size in projection, may produce substantial forecast errors.
- provides detailed and accurate projections of the one-person household by major socio-demographic characteristics and avoids the problematic headship designation inherent in the traditional projections.
Data: Baseline population

- In this projection, the baseline populations of China are based on the 2010 micro census data.

- According this census, in the baseline year of 2010, China had 1340.9 million people, among which 51.3% were males and 48.7% were females, and 49.9% were urban residents and 50.1% were rural residents.
Data: Model standard schedules

The model standard schedule at the national level is estimated as below. (rural and urban areas are estimated separately)

- age-sex-rural/urban-specific death rate
- age-sex-rural/urban-specific o/e rates of fertility by parity
- age-sex-rural/urban-specific o/e rates of first marriage
- age-sex-specific o/e rates of divorce and remarriages
- age-sex-rural/urban-specific rate of children leaving homes
- age-sex-specific net migration rate
Number of households in China will increase in number from about 400 million to 570 million from 2010 to 2050; meanwhile OPHs increases more rapidly, more than doubled from 60 million in 2010 to 125 million in 2050. Such a rise of OPHs fundamentally changes the structure of the Chinese households.

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One generation %</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One person only</td>
<td>14.53</td>
<td>15.68</td>
<td>17.47</td>
<td>18.46</td>
<td>19.2</td>
<td>20.77</td>
<td>22.12</td>
</tr>
<tr>
<td>One person and other</td>
<td>1.10</td>
<td>1.34</td>
<td>1.45</td>
<td>1.47</td>
<td>1.46</td>
<td>1.42</td>
<td>1.30</td>
</tr>
<tr>
<td>Married couple</td>
<td>20.26</td>
<td>20.95</td>
<td>22.16</td>
<td>22.75</td>
<td>23.36</td>
<td>24.73</td>
<td>25.46</td>
</tr>
<tr>
<td><strong>Two generation %</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married couple</td>
<td>39.88</td>
<td>41.14</td>
<td>40.34</td>
<td>39.69</td>
<td>38.51</td>
<td>34.63</td>
<td>31.55</td>
</tr>
<tr>
<td>Lone mother</td>
<td>3.37</td>
<td>4.16</td>
<td>5.31</td>
<td>6.23</td>
<td>7.02</td>
<td>8.53</td>
<td>9.21</td>
</tr>
<tr>
<td>Lone father</td>
<td>2.88</td>
<td>2.87</td>
<td>3.35</td>
<td>4.16</td>
<td>4.90</td>
<td>5.81</td>
<td>6.37</td>
</tr>
<tr>
<td><strong>Three generation %</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17.98</td>
<td>13.86</td>
<td>9.93</td>
<td>7.24</td>
<td>5.56</td>
<td>4.12</td>
<td>3.98</td>
</tr>
<tr>
<td><strong>Total %</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total number (million)</strong></td>
<td>401.93</td>
<td>453.66</td>
<td>498.40</td>
<td>530.65</td>
<td>548.60</td>
<td>571.40</td>
<td>568.48</td>
</tr>
</tbody>
</table>
China's Single Dwellers
An estimated 83 million people live alone in the country

- 29.5M (35.5%) age 15-34
- 23.7M (28.6%) age 35-54
- 11.1M (13.4%) age 55-64
- 18.9M (22.8%) age 65+

### OPH by gender, age and residence in China, 2010 to 2050

Table 3: One-person household by gender, age and rural/urban residence in China, from 2010 to 2050

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>Annual change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>58,396,304</td>
<td>71,135,848</td>
<td>87,070,352</td>
<td>97,965,712</td>
<td>105,316,688</td>
<td>118,662,008</td>
<td>125,762,400</td>
<td>+1.94</td>
</tr>
<tr>
<td>Rural</td>
<td>24,227,438</td>
<td>26,669,092</td>
<td>29,340,066</td>
<td>30,143,884</td>
<td>29,025,396</td>
<td>24,780,752</td>
<td>16,972,712</td>
<td>-0.89</td>
</tr>
<tr>
<td>Urban</td>
<td>34,168,868</td>
<td>44,466,756</td>
<td>57,730,284</td>
<td>67,821,824</td>
<td>76,291,288</td>
<td>93,881,256</td>
<td>108,789,688</td>
<td>+2.94</td>
</tr>
<tr>
<td>Female</td>
<td>29,921,268</td>
<td>36,111,576</td>
<td>44,085,164</td>
<td>48,787,948</td>
<td>51,759,300</td>
<td>57,807,440</td>
<td>60,309,788</td>
<td>+1.77</td>
</tr>
<tr>
<td>Male</td>
<td>28,475,048</td>
<td>35,024,264</td>
<td>42,985,184</td>
<td>49,177,756</td>
<td>53,557,400</td>
<td>60,854,580</td>
<td>65,452,612</td>
<td>+2.10</td>
</tr>
<tr>
<td>40-64</td>
<td>22,423,827</td>
<td>27,103,138</td>
<td>33,208,162</td>
<td>38,176,817</td>
<td>38,373,949</td>
<td>31,158,941</td>
<td>28,897,550</td>
<td>+0.64</td>
</tr>
<tr>
<td>Old (≥65)</td>
<td>17,625,764</td>
<td>19,797,025</td>
<td>25,481,820</td>
<td>31,393,617</td>
<td>39,146,476</td>
<td>55,065,051</td>
<td>60,458,606</td>
<td>+3.13</td>
</tr>
</tbody>
</table>

The solo-living people mainly in **urban areas** whereas the rural OPHs will decline.

**Male** solo-living individuals will outnumber than females, and solo-living elders (65+) will outnumber **solo-living youth**.
Figure 1.1: Number of one-person household by gender, age group and rural/urban residence in China

- Urban > Rural
- Urban Young > Urban Elderly; Rural Young < Rural Elderly
- Young Male > Young Female; Elderly Male < Elderly Female
Young, single and what about it?

This article looks at the sharp rise in young Chinese happy to live by themselves; the next at old people less happy to do so.

Aug 29th 2015 | BEIJING | From the print edition
Global Economics

Alone in China

More of the young and elderly live by themselves

In her Beijing studio, 26-year-old Luan, a management trainee at a multinational, relaxes on a sofa, admiring the pink vase she keeps full of fresh flowers. And in her one-bedroom apartment in the eastern city of Fujian, Zhu Yong, an old bed draped with clothes, towels, and half a bag of snacks, worrying about the cost of her medication.

Liu and his wife both live alone, two ends of a fast-growing demographic. The shifts threaten China's traditional family structure and the appearance for the elderly encouraged by Confucian thought.

Instead of spending their final years with sons, daughters, and grandchildren, many Chinese elderly now live out a more isolated existence alone. Their children are far away, and their only recourse for assistance is a hastily arranged government social welfare network. Solitary young Chinese, a rich talent for consumer-goods companies and real-estate developers, is also increasing because losing children, undertaking the traditional family structures voluntarily.

Share of Chinese households 65 or older

The rise of the single-person household is a big change for China. The recent 65 or older population has almost doubled since 1990, according to government data. (In the U.S., the number is more than 27 percent, the United Nations reports.) The actual number of solitary households in China may be as high as 41 million, says Yang, director of the Centre for Family and Population Research at the National University of Singapore. That could rise to 137 million by 2050, she says. "Some choose to live alone because they have more economic resources and prefer more time and space for themselves. Others have no choice," Yang says.

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In 2010, the sizes of solo-living individuals by gender and rural/urban residence are relatively smooth; however, after forty years later, the corresponding distributions take on a two-peak structure at the two end of ages, especially for the urban solo-livers.
Result: OPH by marital status in rural and urban China, 2010 to 2050
Result: OPH by education in rural and urban China, 2010 to 2050
Result: OPH by health status in rural and urban China, 2010 to 2050
Urban institutionalized older adults will increase rapidly, making up the majority of institutionalized elders by 2050. A major gender gap is also notable with about more females than males.
Conclusion & Discussion

Revealed by the projections, the continued increase in OPH will be a major demographic trend in China for the next few decades.

Although the current proportion of OPH among the total households is still much lower than those in the western societies (15%) in China, over the next forty years, one in five of Chinese households will have only one member. Solo-living will become the second biggest living arrangement for Chinese, next to the nuclear household with one couple plus child(ren).
Conclusion & Discussion

- the largest solo-living subgroup will be **urban young & middle-aged adults**, especially those young males, who are not married and highly educated, many with a college degree

- **Vulnerable groups** - widowed females, the youth rural migrants, and those who are not married, do not have children and has low SES

- more of the **oldest-old** people start to live independently without any family companions. Note that, there will be a significant increase of **unhealthy** among this group in the next four decades.

- The **rapid urbanization** of China will continue to concentrate more population in the urban areas, and the economic development in these Chinese cities will meanwhile cultivate a large cohort of young individuals who will appear more similar to their western counterparts.
Gu, Feng and Yeung (2018) –

- living alone among elderly is a dynamic process - a lot of moving back and forth between different living arrangements.
- A bi-directional relationship with health – those healthier are more likely to live alone, and those who live alone had better subsequent health
- But elderly living alone have higher depression and lower life satisfaction
- Key to have social engagement in the community
Conclusion & Discussion

As the pension system and social eldercare is still underdeveloped in China, most elderly adults in China still have to rely on family members in later life.

Limitation of Family - However, due to the low fertility rate caused by the long-enforced one-child policy, availability of adult children as family care provider are declining fast in the recent decades.

With more young people living alone, the role of family system in individuals’ lives and in the society in China in the future warrants deeper investigation – a drastic transformation in the basic social fabric, in sharp contrast to traditional Chinese family forms and values that see a big family as a greatest blessing in life.
THANK YOU!