



# A Study on the Impact of Internet Use on Older Adults' Willingness to Socialize for Older Adults--An Analysis of Data Based on the China Older Adult Social Tracking Survey (2020)

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**Abstract.** Based on the data from the 2020 Social Tracking Survey of the Elderly in China, the impact of Internet use on the willingness of the elderly to socialize their old age was empirically analyzed using a binary logistic model. Research has shown that factors such as frequency of Internet use, barriers to Internet use, and network signal at the place of residence significantly affect older people's willingness to socialize for old age. Overall, the higher the frequency of Internet use, the lower the barriers to Internet use, and the more likely older people are to choose socialized ageing if they live in a place with network coverage.

**Keywords:** the pensions industry; Internet usage; industrial economy.

## 1 Introduction

The global aging trend is worsening, with the United Nations predicting that by 2050, the global elderly population aged 65 and over will reach 1.6 billion. Simultaneously, China's elderly population is expected to exceed 400 million. This demographic shift is boosting the demand for elderly care services and challenging traditional models, necessitating new solutions. Socialized elderly care, which utilizes social resources and technology, has become increasingly prominent. It integrates the benefits of traditional home care and institutional approaches, catering to the diverse and personalized needs of the elderly. However, the attitudes of the elderly toward socialized care vary, influenced by multiple factors. With the rapid expansion of internet technology, more seniors are going online for information, socialization, and shopping, significantly shaping their daily habits by broadening their access to information and social networks and reshaping their perceptions of elderly care services. This shift potentially influences their willingness to adopt socialized care. This paper explores how internet use affects the elderly's willingness toward socialized care, aiming to underscore the internet's role in transforming elderly care models.

## 2 Review of the Relevant Literature

Willingness to age in place refers to an individual's willingness to choose the way to age in place in the future, and its influencing factors can be summarized as individual factors, social factors, and family environment factors. Among them, individual factors mainly include age, marital status, number of children, and economic status. Scholars have found that spousal support<sup>1</sup>, gender, age, and physical health condition affect the elderly's willingness to age<sup>2</sup>. Elderly people with a good financial status tend to choose institutional care<sup>3</sup>, while those with more children are less likely to choose institutional care<sup>4</sup>. Social factors mainly contain social welfare and community services<sup>5</sup>. Scholarly studies have shown that the willingness of the elderly to age in place is influenced by the medical insurance system<sup>6</sup>. Inadequate community services also inhibit their willingness to participate in social care<sup>7</sup>. Family environment factors mainly include intergenerational family support and geographical location. Some scholars have found that the family environment affects the willingness of the elderly to stay in an elderly care institution<sup>8</sup>, such as intergenerational care experience, child support<sup>9</sup>, and the place of residence. There is also a noticeable urban-rural difference in the willingness of the elderly to age in institutions<sup>10</sup>.

In summary, combing through the existing literature reveals that not much research has explored the factors influencing the willingness of the elderly to use socialized care from the perspective of internet usage. Therefore, this study expands on the influencing factors of the elderly's willingness to embrace socialized ageing and investigates the impact of Internet use on their willingness to do so, with the expectation of promoting the high-quality development of the ageing industry.

## 3 Research Design

### 3.1 Sources and Model Setting

The source of data used in this study is from the 2020 China Learning and Ageing Society Tracking Survey (CLASS) data. This data covers 28 provinces/municipalities/autonomous regions in China, excluding Hong Kong, Taiwan, Macao, Hainan, Tibet and Xinjiang. It is the national survey data with larger sample size, higher credibility and better representation in China. After excluding irrelevant samples, a total of 11380 valid samples were obtained.

Since the dependent variable is a dichotomous variable, this paper uses a binary logistic model for regression analysis, which can be expressed as:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \sum_{i=1}^k \beta_i x_i + \varepsilon \quad (1)$$

In the formula,  $p$  is the probability of having a willingness to socialize for old age and  $1 - p$  is the probability of not having a willingness to socialize for old age.  $\beta_0$  is the constant term,  $k$  is the number of explanatory variables. Where  $\beta_i$  is the coefficient of the explanatory variable, which responds to the direction and degree of the influence of the explanatory variable on the willingness of the elderly to socialise for

old age,  $\varepsilon$  and represents the random error term, i.e., other potential factors that may have an impact on the dependent variable, the willingness of the elderly to socialize for old age.

### 3.2 Variable Definition and Description

The dependent variable is the elderly's willingness to age socially. The questionnaire setting "Where do you intend to age mainly in the future?" was selected. Choosing "nursing home" or "community day care center" is considered an intention to age socially (assigned a value of 1) and choosing other options is considered a lack of intention to age socially (assigned a value of 0). The independent variable is Internet use, which is measured in the following three dimensions:

1. Frequency of Internet use: This is reflected by a set of ordinal numbers ranging from 1 to 5. According to the questionnaire "Do you go online?", the answers are coded as follows: "Never go online" is assigned a value of 1; the answer "Some times a year" is assigned a value of 2; the answer "At least once a month" is 3; the answer "At least once a week" is 4; and the answer "Every day" is 5. "The larger the value, the higher the frequency of Internet use. 2. Barriers to Internet use: Based on the question, "What barriers/inconveniences do you face when using the Internet? There is no obstacle/inconvenience". the answer "Yes" indicates no obstacles (assigned a value of 0), and "No" indicates obstacles (assigned a value of 1). 3. Network signal at the place of residence: A value of 1 indicates the presence of a signal.

The control variables include other factors that might affect the willingness of the elderly to age socially: gender, age, number of children, marital status, education level, presence of chronic diseases, self-assessed health status, and pension insurance. Table 1 shows the descriptive statistics of the variables.

**Table 1.** Variable definitions and descriptive statistics

variable	N	mean	sd
Dependent variable	11380	0.49	0.50
Independent variable (Internet use)			
Frequency of Internet use	11380	1.82	1.39
Barriers to Internet use	11380	0.09	0.29
Residential network signal	11380	0.51	0.50
Man	11380	1.50	0.50
Age	11380	74.59	6.60
Number of sons	11380	1.31	0.92
Number of daughters	11380	1.15	1.03
In marriage	11380	0.75	0.43
Educational attainment	11380	1.49	0.75
Chronic disease	11380	0.21	0.41
Health status	11380	2.31	0.73
Pension Insurance	11380	0.46	0.50

## 4 Analysis of Empirical Results

### 4.1 Analysis of Baseline Regression Results

In Table 2, (1) reports the baseline regression results of the binary logistic model. The main independent variables, internet usage frequency and residence network signal, have a significant positive effect on the elderly's willingness to socialize in old age. The higher the Internet usage frequency, the stronger the elderly's willingness to socialize for old age; for each unit increase in residence network signal, the willingness to socialize increases by 0.165 units. The main independent variable, barriers to internet use, has a significant negative effect on the willingness to socialize in old age. For each unit increase in barriers to internet use, the willingness to socialize decreases by 0.268 units. Among the control variables, age, education level and health status have a significant positive effect on the willingness of the elderly to socialize in old age. Meanwhile, the number of sons, the number of daughters, marital status (being married), presence of a chronic disease, and enjoyment of pension insurance all have a significant negative effect on the willingness to socialize in old age.

**Table 2.** Analysis of regression results

variable	(1)	(2)
Frequency of Internet use	***	***
(2)	0.404*** (0.098)	0.409*** (0.104)
(3)	0.490*** (0.089)	0.497*** (0.094)
(4)	0.560*** (0.073)	0.590*** (0.077)
(5)	0.726*** (0.082)	0.770*** (0.087)
Barriers to Internet use (1)	-0.268*** (0.070)	-0.132* (0.075)
Residential network signal (1)	0.165*** (0.045)	0.332*** (0.048)
Genders(female)	0.009 (0.040)	-0.01 (0.042)
Age	0.015*** (0.004)	0.014*** (0.004)
Number of sons	-0.257*** (0.023)	-0.239*** (0.025)
Number of daughters	-0.173*** (0.020)	-0.171*** (0.021)
marital status (1)	-0.141*** (0.048)	-0.176*** (0.051)
Educational attainment	0.239***	0.285***

	(0.049)	(0.052)
Chronic disease (1)	-0.270***	-0.156**
	(0.049)	(0.053)
Health status	0.236***	0.042***
	(0.058)	(0.063)
Pension Insurance (1)	-0.271***	-0.280***
	(0.041)	(0.044)
Constant	-0.590**	0.168***
$R^2$	0.090	0.082

Note: \*\*\*, \*\* and \* are significant at the level of 1%, 5% and 10% respectively. Z-values are in parentheses.

## 4.2 Robustness Check

To improve the robustness of the findings, this paper uses a variable substitution method to further test the results. In the CLASS data, the question "Under what circumstances would you go to a nursing home?" was selected as the primary proxy variable to measure the willingness of the elderly to age socially. The options for this question include "needing care because of poor health," "needing companionship due to loneliness," "having family conflicts," "needing to live in a different environment," "would not go anyway," and "other." The option "would not go anyway" is considered a lack of willingness to age socially and is assigned a value of 0. The other options are considered a willingness to age socially and are assigned a value of 1. The effect of internet use on the elderly's willingness to age socially is re-estimated using the binary logistic model, with results shown in Table 2(2). The impact of the explanatory variables shows no significant change in results. Based on this test, the findings of this paper can be concluded as robust.

## 5 Conclusions

As one of the key ways to address the weakening of family-based pension functions, socialized pension fulfills the aspirations and needs of the elderly for a better retirement in the new era. The vigorous development of socialized pension and the promotion of its high-quality development has become a crucial task in building a better society today. This paper empirically investigates the factors influencing the elderly's willingness to age socially, based on data from the China Learning and Ageing Social Tracking Survey (CLASS). The results show that the frequency of internet use and whether the residence has network coverage significantly and positively affect the elderly's willingness to choose socialized aging. The higher the frequency of internet use, the more likely the elderly living in a network-covered residence are to choose socialized aging. This could be because internet use enhances older people's ability to access information about aging in place, increasing their awareness and acceptance of socialized aging

services. Barriers to internet use significantly and negatively affect the elderly's willingness to age socially, making those with barriers to internet use less inclined to choose socialized aging.

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