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Do Older Chinese Citizens Want to Live in and Get Elderly Services from Embedded Community Elderly Centers? A Study on Older Persons' Preferences in the Northeast of China

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Abstract

The ageing population is rising at a staggering rate and this is expected to continue in the future in China. Nowadays, many Chinese urban communities show a lack of pre-designed facilities for older persons. In this case the embedded community elderly centers (ECEC) were initiated and put into practice in some cities. But there was no clear conclusion as to whether older persons had a willingness to live in ECEC, nor what kind of functional spaces they needed most. Through a questionnaire survey and interview in the northeast area of China, this study explores whether the older Chinese citizens want to live in and get elderly service from ECEC. The survey showed that 43.3% of the older persons would go to ECEC or get service there from the point of view of their physical condition. Another 43.4% of the older person held the attitude that they would consider ECEC, but not as an absolute necessity. Besides, the older persons, who were younger, having professional jobs and were in better physical condition, were more likely to accept living in an ECEC. In addition, by analyzing the functional demands of the older person for ECEC, it was observed that medical care was found to be the need most in demand. Catering, housekeeping and special rescue route were also recognized by more than two-thirds of the older persons. Since the development of the Internet plus in China, nearly three-fifths of the older persons believed that Internet calls were also essential. However, some necessary functions in other countries such as bathing, psychological counseling and holding family activities were not important for Chinese older persons. The study provides preliminary insights into the future architectural programming and design of ECEC.

Keywords: the urban community of China, embedded community elderly centers (ECEC), older persons' preferences, functional requirement

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1. Introduction

China has currently the largest population of older persons in the world and this is likely to continue due to the fact that the number still keeps growing rapidly. According to the statistics in 2016, 16.7% of the total population of China was made up of older persons, which means that there were more than 230 million older persons who were above 60 years old (National Bureau of Statistics of China, 2017). Since 1999, when China entered the ageing society, many Chinese urban governments have promoted the “9073” or “9064” social service systems to face the challenge of an ageing society, that is to say more than 96% of the older persons are ageing in place by relying on home care and community service. However, the fact is that most of the communities do not have sufficient access to professional services, such as medical care, social support, ageing-friendly environment or educational opportunities (Si, W., et al., 2015; Li, X., 2014).

In 2015, Chinese national government has strongly advocated NGOs and private capitals participate in the elderly service (Ministry of Civil Affairs of the People's Republic of China, 2015). Since 2014, some Chinese urban governments (including Shanghai, Beijing, Chengdu), community endowment service enterprises, design experts and social institutions have proposed an innovative model for the pattern of community retirement, named the embedded retirement pattern, which means that embed small scale, multifunction and networking elderly service centers into the communities, to support the older persons' successful ageing experience and bridge the gap between ageing in place and continuous care (Hu H., et al, 2015). The ECEC is located in the original communities in which the older person lived, to maintain older persons' social relations, and to enable them to choose suitable services according to their health conditions and desires.

However, since the ECEC is a project in exploration, scholars in different fields have divergent attitudes towards its definition and design focuses (Dong D. S., 2008; Qiu G.Q., 2013; Zhang Q., 2016). Also, due to the existing of other retirement patterns such as ageing in home, ageing in nursing institution, ageing with day care and ageing with tourism, it is unclear, regarding the older persons' preferences, whether it is necessary to build the ECECs in the existing communities. Besides, since most existing ECECs are built in megacities, developed and high-density cities such as Beijing, Shanghai and Guangzhou, the attempts of ECECs in the northeast area cities are extremely limited. Considering the history, culture, climate and economy of northeast area of China are similar but different from other area in China, and the older persons' life experiences in this area are similar, this group of older people are examined particularly. Since it is essential to survey the older persons' desires before planning and design ECEC, the propose of the research is to discover whether the older Chinese citizens want to live in and get elderly service from ECEC and explores solutions to their needs in the northeast area of China. By means of a questionnaire survey conducted, the study hypothesized that natural attributes such as gender and age, monthly expense, personal life experience, health condition could have notable impact on older Chinese citizens' preferences. Thus, according to the qualitative analysis with quantitative analysis, the study clarified who would prefer to live and age with the help of ECEC, and which functional spaces the older persons would require most. Findings of this paper are expected to help the further study of the architectural design of ECEC.

2. Methods

Respondents for this study were selected from four communities and two elderly nursing institutions in Northeast area in China, including Heilongjiang, Jilin and Liaoning Province. Anonymous questionnaires were distributed at random among 167 older persons over an 8-week period. 120 questionnaires were delivered to and collected in community centers, community squares, community hospitals, residential apartments and nursing homes. Considering the education level, vision loss among older persons in China, the questionnaire was carried out through carried out by means of interviews held in person with the respondents, and all answers were recorded by the investigators. And another 47 questionnaires were delivered and collected through the Internet. Of these, 42 questionnaires were read by the older persons themselves, 5 questionnaires had the interviews recorded by the older persons' relatives. The questionnaire



response rate was 100% (some older persons those who declined to participate, the investigators did not send any of the questionnaires to them). The study only focused on the citizens of the Northeast area, also some of the questionnaires that were filled by the older persons living in the rural areas or other provinces of China were not counted. The number of valid questionnaires ended up being 143 in total.

The questionnaire firstly inquired of respondents' personal information, including gender, age, health condition, former occupation, and monthly expenditure. Then the investigators asked the interviewees questions about the place where they were living present, and whether they were satisfied with their retirement life. Following on, the investigators explained and asked these older Chinese citizens whether they wanted to live in, and get elderly services for the elderly from embedded community centers. Moreover, the functional requirements of the ECEC were also inquired into. Through the selections available, we could easily find out what are the more necessary and helpful requirements for older persons.

A statistical analysis, using Microsoft Excel and SPSS, was done of the responses to the questions. Pearson's chi-square tests were used to test the correlations between personal attributes and answers of the respondents with the significance level of 5%.

3. Results

3.1 Descriptive statistics

Descriptive statistics of the questionnaire results is showed in Table 1 and Table 2. Among the 143 respondents, 55.2% of the respondents were female, 44.8% were male. The study used 4 stages to categorize older persons' age according to Forman's classification: the younger old age (55 to 60 years), the young age (60 to 69 years), the middle old (70 to 79 years) and the very old (80 years and older) each accounted for 21.7%, 42.7%, 16.1% and 19.6% respectively of the respondents. For attributes involving personal monthly expenditure, it was found that only a small number of people (9.8%) had expenses less than 1000, half of the respondents (51%) would spend about 1000 to 3000 every month. Perhaps due to the economic level in northeast, the expense level shows a downward trend, the percentage of the 3000 to 5000 and 5000+ are 28% and 11.2% respectively. Moreover, classification of their former occupations showed that only 9.8% of the respondents used to be farmers, 25.9% used to be workers and small traders, officers accounted for 28% and the rest used to have a professional job, which accounted for 36.4%. As there were no official ADL ability test records for the older persons in China currently, a subjective account of their health status of the respondents was inquired into instead. Results suggested, healthy people among the respondents accounted for 73.4 percent, the chronic illness number accounted for 18.9% and the disabled only 7.7 percent. Moreover, the survey shows that 43.4% of the respondents will choose ECEC, 13.3% will not choose ECEC, and as for the rest they are not sure whether they will choose it.

Table 1. The Respondents' Personal Information and Opinions on Live in or Get Services from ECEC

Gender	N	%	Health condition	N	%
Female	79	55.2	Healthy	105	73.4
Male	64	44.8	Chronic	27	18.9
			Disabled	11	7.7
Age	N	%	Monthly expenditure	N	%
55-60	31	21.7	0-1000	14	9.8
60-69	61	42.7	1001-3000	73	51
70-79	23	16.1	3001-5000	40	28
80+	28	19.6	5001+	16	11.2
Past career	N	%	Options of ECEC	N	%
Farmer	14	9.8	Must live in or get services	62	43.4
Factory workers and small traders	37	25.9	Maybe live in	62	43.4
Officers	40	28	Never go to	19	13.3
Professional job	52	36.4			

In order to make our data more conducive to the feasibility analysis of ECEC, we removed the cases which the respondents declined to accept ECEC. Then we put forward several services which are provided in the

ECEC in the questionnaire, from the survey we found that catering, housekeeping, health care, physical exercise and special rescue route services were well recognised by the respondents. For people in their later life, a healthy body is not only very important for themselves, but also of serious concern to their children, because if older persons have a healthy body, they can take better care of themselves and enjoy a good quality of life. However, if they are in poor physical condition, then they will need their children's help, which will increase the burden on the children who would be busy with their work. So the matter of health care accounted for the largest percentage 81.5%. And the physical training was also well recognised and it accounted for 64.5%. With the advance of their age, a person's body is no longer so flexible, and more help from others will be needed. And also from the survey, it is clear to see that the catering, the housekeeping and the special rescue route are very popular and accounted for 67.7%, 71% and 67.7% respectively. Moreover, almost half of the respondents would choose a service like that of playing card games (49.2%), the network calls (40.3%) and education (43.5%). Contrary to the above, perhaps on account of traditional thinking, very few people will choose the options like getting help to take a bath, holding family activities and psychological counselling, these accounted for 16.1%, 27.4% and 20.2% respectively.

Table 2. The Respondents' Functional Preferences

Health care	N	%	Housekeeping service	N	%
Required	101	81.5	Required	88	71
Not required	23	18.5	Not required	36	29
Catering	N	%	Special rescue route	N	%
Required	84	67.7	Required	84	67.7
Not required	40	32.3	Not required	40	32.3
Physical training and exercise	N	%	Play card games	N	%
Required	80	64.5	Required	61	49.2
Not required	44	35.5	Not required	63	50.8
Learning	N	%	Internet calls	N	%
Required	54	43.5	Required	50	40.3
Not required	70	56.5	Not required	74	59.7
Holding family activities service	N	%	Psychological counselling	N	%
Required	34	27.4	Required	25	20.2
Not required	90	72.6	Not required	99	79.8
Bathing service	N	%			
Required	20	16.1			
Not required	104	83.9			

3.2 Correlation of test results

The chi-square test results suggested that preferences for ECEC were significantly related to their age, health, monthly expenditure and their past career. Yet, significant correlations were not found in gender status. As it is shown below (Figure 1) the age section from 60 to 69 favored ECEC more than other age sections, and it has a huge correlation ($p=0.001$), as well as past career ($p=0.001$). Meanwhile, the health condition is also an aspect worthy of serious consideration ($p=0.002$). Compared with chronic illness and disabled older person, those who were in good health, tended to like ECEC more. The older persons' monthly expenditure is also a positive aspect but not strong enough as seen above ($p=0.019$). The division between men and women is very small, so gender is not a reason ($p=0.163$).

At the same time, significant impact of the five attributes on respondents' concerns with ECEC was also detected. We had analysed each of the ECEC services, as it is listed in Table 3. Compared with gender, age and health condition, monthly expenditure ($p=0.000$) and past career ($p=0.028$) tended to be more sensitive for older persons who had chosen catering. Past career showed great influence on the options for housekeeping($p=0.013$), play card games ($p=0.024$) and learning services ($p=0.022$). It was clear that difference in health and past career played a significant role in the choice of health care service. And physical training was influenced by the age level ($p=0.002$) and health condition ($p=0.001$) of older persons. No matter whether male or female, young or old, they did not have a great need for special rescue route. Older persons, who had different budgets for their month expenses and taking age into account, would have



a close correlation with their choice of bathing service and holding family activities service. For psychological counselling, only past career and age condition showed any significant influence. Meanwhile, the category Internet calls was seriously influenced by the person's past career and health condition.

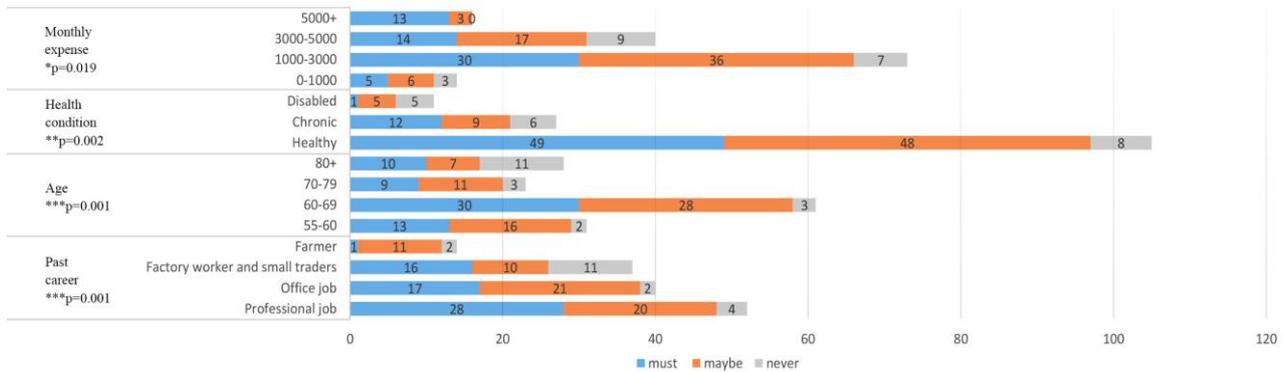


Fig.1. Composition of Preferences for ECEC.

Table 3. Analysis of the Correlation between Personal Attribute and Functional Requirement.

		Cater- ing	House- keeping service	Health care service	Play card games	Physical exercise	Learn -ing	Special rescue route	Bathing service	Holding family activities	Psycholo- -gical counselling	Internet call
Gender	χ^2	3.288	0.212	3.858	0.028	0.285	0.991	0.012	0.030	0.133	2.745	1.544
	p	0.070	0.645	0.050	0.866	0.593	0.320	0.911	0.862	0.716	0.098	0.214
Monthly expenditure	χ^2	24.384	2.465	4.576	5.105	1.034	1.636	8.906	12.864	10.477	4.922	2.669
	p	0.000	0.482	0.206	0.164	0.793	0.651	0.031	0.005	0.015	0.178	0.446
Past career	χ^2	9.089	10.752	4.944	9.480	2.214	9.657	14.954	2.391	6.198	9.026	20.545
	p	0.028	0.013	0.176	0.024	0.529	0.022	0.002	0.495	0.102	0.029	0.000
Age	χ^2	2.163	1.558	19.910	3.641	14.764	3.903	3.211	18.276	20.707	11.767	3.251
	p	0.539	0.669	0.000	0.303	0.002	0.272	0.360	0.000	0.000	0.008	0.355
Health condition	χ^2	1.330	3.136	7.860	1.664	13.395	0.986	6.017	4.729	0.138	3.720	10.167
	p	0.514	0.208	0.020	0.435	0.001	0.611	0.049	0.094	0.933	0.156	0.006

*p < 0.05; **p ≤ 0.01; ***p ≤ 0.001.

4. Discussion

The most important finding from the study was that if the communities did have ECEC built, most of the older persons would consider living there or obtain services from it. It may prove what has been certified by identity theory and lifespan developmental physiology, that the older persons prefer to live in their familiar surroundings which can give them a sense of belonging or attachment to place (Shirley L. O'Bryant, 1982; Wiles, Janine L., et al, 2009; Florek, 2011). And communities have to act as the primary living environment and be a source of social support for older Chinese citizens. Besides, the older persons who live in northeast area in China do rely heavily on the neighbourhood elderly centers to help them feel part of the local community and less abandoned by society, it is similar to the older persons who live in Hong Kong which has been studied by Chan, A. W., et al. (2016). As most of the older persons may accept ECEC, according to Hauge (2007) study, a positive place will create a positive self-identity, and will leads to positive behaviour and a good quality of life, it is thus essential to put forward an ECEC model to rebuild ageing-friendly communities for older persons, to meet the older persons' physical, emotional and social needs.

Besides, according to the result of the study, at the beginning of the programming and design of ECEC, the target population may be older persons, irrespective of whether they are in good health or have chronic illness, but be less than 80 years old. In this regard, architectural programming may consider health care demands, participation demands and security requirements of the older persons, in order to enhance their

quality of life (WHO, 2002). Also, some design strategies should be proposed to modify the communities to be ageing-friendly. There should be sufficient medical and health care service to enable physical well-being. Essential services and facilities should be provided for daily life service. There should be sufficient facilities to enable intergenerational interactions. Internet plus technology like Internet call may be used to enhance their security as well.

5. Conclusion

Since about 96% of older Chinese persons are ageing within the communities relying on home care and community service, the ECECs have been proposed in 2014. Whereas, little did the previous research explore whether the older person had a willingness to live in ECEC, nor what kind of functional spaces they needed in ECEC most, especially in the northeast area of China. By questionnaire and data analysis, this study examined the older persons' preferences. The results of the study revealed that about four-fifths of the older persons would like to or consider get elderly service or live in ECEC, and functional spaces which the older person desires most is health care, followed by some, domestic services and security services. The participation services, like learning, physical exercise and playing card games are only seriously needed by certain groups of older persons. On the contrary, unlike some western or developed countries, services like bathing and psychological counselling are not popular among older Chinese citizens. Based on what is found in this study, the design of ECEC is essential and should be taken into consideration as soon as possible to enhance the living condition for the older Chinese citizens.

This study has several limitations. Certain population groups were more likely to participate in the study—older persons in good health condition, 60 to 70 years old, and those living in northeast of China. Thus, the voices of people in poor health condition and people who live in other areas of China were under-represented. In addition, in this study, the researchers only took five factors regarding personal information into consideration, but some other important factors, such as the number of children (due to the one-child policy), social status, educational level were ignored. Future studies should consider these factors. In addition, similar surveys can also be carried out in various other provinces of China so as to distinguish the possible regional variations in other persons' concerns. Furthermore, since the ECECs are built in the communities, the demands and attitudes of other age occupants and communities managers should also be examined in the future. In conclusion, this study provides preliminary insights into the future architectural programming and design of ECEC.

References

- 1) Chan, A. W., Chan, H. Y., Chan, I. K., Cheung, B. Y., & Lee, D. T. (2016). An Age-Friendly Living Environment as Seen by Chinese Older Adults: A "Photovoice" Study. *International Journal of Environmental Research and Public Health*, 13(9), 913.
- 2) Florek, M. (2011). No place like home: Perspectives on place attachment and impacts on city management. *Journal of Town & City Management*, 1(4), 346-354.
- 3) Forman DE, et al. (1992). PTCA in the elderly: the "young-old" versus the "old-old". *Journal of the American Geriatrics Society*. 40(1). 19-22
- 4) Hauge, Ashild Lappegard. (2007). Identity and Place: A Critical Comparison of Three Identity Theories. *Architectural science review*, 50(1), 44-51.
- 5) Hu, H., Yu, W., Wang, X. and Zhang, L. (2015). Situation Evaluation and Improving Path of Embedded Retirement Pattern. *Social Security Studies*. 02, 10-17.
- 6) Li, X. (2015). Research on urban community planning strategies for ageing-friendly. 1st ed. Bei Jing: China Construction Industry Press.
- 7) O'Bryant, S. L. (1982). The value of home to older persons: Relationship to housing satisfaction. *Research on Ageing*, 4(3), 349-363.
- 8) Si, W. and Wang, Y. (2015). An Analysis of the Problems and Countermeasures of Community Old-age Support Service. *Modern Society*, 3, 12-13.
- 9) Wiles, J. L., Allen, R. E., Palmer, A. J., Hayman, K. J., Keeling, S., & Kerse, N. (2009). Older people and their social spaces: A study of well-being and attachment to place in Aotearoa New Zealand. *Social Science & Medicine*, 68(4), 664-671.
- 10) WHO. (2002). Active ageing: A policy framework. *The Ageing Male*, 5(1), 1-37.

