



Research on the Demand for online Elderly Care Services for Urban Elderly in Chongqing City of China under the Background of Digital Economy

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Abstract. With the development of the digital economy, obtaining elderly care services through the internet has become a new way of consumption and elderly care. The paper adopts a questionnaire survey method to investigate the demand for online elderly care services among urban elderly in Chongqing China. Descriptive statistical analysis and are used. The research results show that, in descending order of demand, the types of online elderly care services are online medical and health care service, online life care service, online entertainment service, online psychological service, and online self-actualization and assistance service. On this basis, the paper proposes suggestions for improving the online elderly care service in Chongqing.

Keywords: digital economy, online, elderly care services, urban elderly people

1 Introduction

Currently, China is in a period that is experiencing accelerated development of an aging society and digital economy. With comprehensive integration of digital technology into urban social life, digital services are iteratively upgraded, and new forms of digital life are constantly emerging. Digital life scenarios, such as online appointment for transportation, online medical treatment and online shopping, are changing the lives of elderly people in cities. According to the 51st Statistical Report on the Development of Internet in China released by the China Internet Network Information Center (CNNIC), as of December 2022, the proportion of internet users aged 60 and above account for 14.3% of the total internet users in China, that is, the number of internet users aged 60 and above has reached 153 million. The elderly population has become one of the main forces of digital consumption. Therefore, studying the online service demands of the elderly and improving the online elderly care service is of great significance.

The research on the consumption behavior of elderly people in the internet and digital era has always been a focus of attention for scholars. In terms of consumption status, Guan Wenyan (2020) found that online consumption has become attractive, but the mentality of conformity of the elderly is severe ^[1]. The research on influencing factors

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D. Rad et al. (eds.), *Proceedings of the 2024 5th International Conference on Mental Health, Education and Human Development (MHEHD 2024)*, Advances in Social Science, Education and Humanities Research 857, https://doi.org/10.2991/978-2-38476-271-2_70

is relatively mature, which focuses on personal characteristics, technical characteristics, and environmental characteristics. Personal characteristics mainly include weak willingness to use digital technology^[2] and psychological emotions^[3]. The technical features mainly include the security of online transactions, the attractiveness of online products^[4], and the transparency of technical information^[5]. Social characteristics mainly include intergenerational family support and digital feedback^[6], and social support^[7]. In terms of improvement strategies, Zhang Fan, et al. proposed the launch of digital aging friendly products and the implementation of home digital feedback^[8]. Wu Yanchun and Shen Yihang proposed that protecting the digital rights of the elderly and increasing their enthusiasm for participating in digital consumption^[9].

According to the literature review, it is suggested that research on the demand for online services among the elderly is relatively weak. Chongqing has a severe population aging issue. As of 2023, there are 7.1211 million people aged 60 and above in Chongqing, accounting for 22.16% of the city's total population. This means that Chongqing has a huge and potential elderly consumer group in terms of digital consumption. Therefore, taking Chongqing as an example, this paper investigates the online service demands of urban elderly in order to promote the improvement of Chongqing's online elderly care service in the digital society.

2 Survey Design of The Demand for Online Elderly Care Services Among Urban Elderly Popole in Chongqing

2.1 Survey Content

The survey questionnaire is divided into three parts. The first part only has one question about place of residence, in order to screen out elderly people living in cities to complete the questionnaire survey. The second part is about the basic information of the elderly, such as gender, age, educational level, monthly income and consumption, and whether they use the internet. Part three is about the demand for online elderly care services for the elderly. American psychologist Abraham Maslow divided human needs into five levels: physiological, safety, social, esteem, and self-actualization needs. Drawing on Maslow's hierarchy of needs theory and referring to the classification of elderly care service demands by Dachuan, et al.^[10], this article categorizes the elderly's demand for elderly care services through online booking or access into four types: demand for life care services, demand for medical and health care services, demand for entertainment and psychological services, demand for self-actualization and assistance services. The four types of service requirements are further subdivided into multiple detailed online elderly care service requirements, as shown in Figure 1. For the demand content in Figure 1, assign values from 1 to 5 according to the degree of demand, where number 5 represents the maximum demand intensity, and number 1 represents the minimum demand intensity. A survey questionnaire is designed by using the Lister 5-point scale method.

2.2 Survey Objects and Implementation Methods

The survey targets elderly people aged 60 and above, who are living in Chongqing city. Random survey methods are adopted by combination of online and offline. For elderly people who do not know how to fill out questionnaires, children or others help them complete the questionnaire. A total of 516 questionnaires were collected during the survey, of which 504 are valid, with an effective rate of 97.67%.

2.3 Data Processing

The sample data was analyzed using SPSS 26.0 software. The Cronbach's Alpha is 0.836. Kaier-Meyer-Olkin is 0.766. The reliability and validity are good and the questionnaire results are valid.

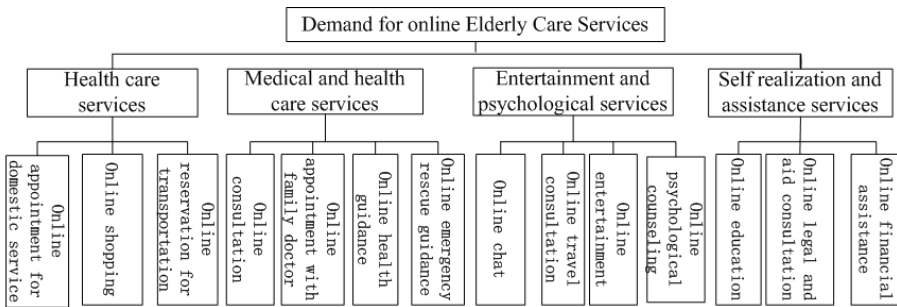


Fig. 1. Demand for online elderly care services

2.4 Survey Results

2.4.1 Basic Information of the Sample

Among the 504 valid samples collected in this survey, there are 240 male elderly people, accounting for 47.62% of the total, and 264 female elderly people, accounting for 52.38% of the total. In terms of age composition, elderly people aged 60-65 years old account for 53.17% of the total, elderly people aged 66-70 years old account for 25.4% of the total, elderly people aged 71-75 years old account for 11.9% of the total, elderly people aged 76-80 years old account for 3.97% of the total, and those aged 80 and above accounted for 5.56% of the total. In terms of cultural level, 23.81% are below junior high school level, 42.86% are at junior high school education level, 19.84% are from high school or vocational school, and 13.49% have degrees from college or above. Among these surveyed elderly people, 79.36% of them can have access to the internet and the rest of them cannot. Among the monthly expenses, the top ranked items are daily necessities, which accounts for 77.28% and healthcare, which accounts for 39.68%. Among the composition of consumption patterns, 21.43% elderly people report that they have a certain amount of online consumption every month.

2.4.2 The Demand for Online Life Care Services

Elderly people have demand for daily care due to their physical condition. The survey results are shown in Table 1. The numbers 1-5 indicate the degree of demand intensity from weak to strong. Overall, it can be seen that the elderly in Chongqing generally do not have a strong demand for online life care services, but there is a relatively strong demand for online reservation for transportation services.

Table 1. Degree of demand for online life care services

Demand content/ Degree of demand	5	4	3	2	1
Online appointment for domestic service	7.14%	22.22%	28.57%	23.81%	18.25%
Online shopping	8.73%	29.37%	30.16%	18.25%	13.49%
Online reservation for transportation	9.52%	30.16%	32.54%	15.08%	12.70%

2.4.3 The Demand for Online Medical and Health Care Services

The survey results are shown in Table 2, where numbers 1-5 indicate the degree of demand intensity from weak to strong. Overall, the majority of elderly people are willing to try medical and health services online through various platforms. This also indicates the elderly people care about their physical health.

Table 2. Degree of demands for online medical and health care services

Demand content/ Degree of demand	5	4	3	2	1
Online consultation	11.11%	38.89%	31.75%	6.35%	11.90%
Online appointment with family doctor	9.52%	28.57%	42.06%	8.73%	11.11%
Online emergency rescue guidance	18.25%	29.37%	30.95%	12.70%	8.73%
Online health guidance	8.73%	38.89%	34.92%	6.35%	11.11%

2.4.4 The Demand for Online Entertainment and Psychological Services

With the improvement of living standards, the elderly have an increasing demand for entertainment, tourism, and psychological services. The survey results of entertainment and psychological service demand based on online platforms are shown in Table 3, where numbers 1-5 indicate the degree of demand intensity from weak to strong. Overall, there is a relatively strong demand for online entertainment services, while the demand for online spiritual and psychological services is not high. Through interviews, it can be found that 41.27% of elderly people express a lack of trust in the internet. Through interviews, it was found that 41.27% of elderly people express a lack of trust

in the internet. Based on their low level of trust and security in the internet, they are concerned about privacy leaks and are reluctant to seek spiritual comfort through online means.

Table 3. Degree of demand for online entertainment and psychological services

Demand content/ Degree of demand	5	4	3	2	1
Online chat	9.52%	28.57%	26.19%	19.05%	16.67%
Online psychological counseling	7.94%	15.08%	34.92%	23.81%	18.25%
Online entertainment	8.73%	35.71%	34.13%	11.11%	10.32%
Online travel consultation	8.73%	24.60%	38.89%	15.87%	11.90%

2.4.5 The Demand for Online Self-Realization and Assistance Services

Under the concept that the elderly people should take an active attitude towards aging, many elderly people actively participate in social activities such as knowledge learning activities, social mutual assistance activities, etc., which is a manifestation of their need for self-realization. The survey results of the demand for online self-actualization and assistance services are shown in Table 4, where numbers 1-5 indicate the degree of demand intensity from weak to strong. The demand for online education services is the lowest, followed by the demand for online financial assistance services. After the interview, it is found that the majority of elderly people believe that the demand for online education will reduce their opportunities for social interaction, and they lack trust in online financial assistance services.

Table 4. Degree of demand for online self-realization and assistance services.

Demand content/ Degree of demand	5	4	3	2	1
Online education	5.56%	12.70%	37.30%	24.60%	19.84%
Online financial assistance	5.56%	19.84%	41.27%	15.08%	18.25%
Online legal and aid consultation	7.14%	23.81%	42.86%	13.49%	12.70%

2.4.6 Comparative Analysis of Various Online Service Demands

To compare and analyze the demand for various online services, one- sample T test method is adopted to perform a mean hypothesis test on the degree of demand for each type. The mean value, score 3, between the maximum and minimum scores of demands for each dimension is taken as the overall mean. The results are shown in Table 5.

Table 5. Results of One-Sample T test

	Mean	Std. Deviation	T	Test value = 3			95%Confidence Interval of the Difference	
				df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Online appointment for domestic service	2.7619	1.19618	25.918	503	0.00	2.7619	2.551	2.9728
Online shopping	3.0159	1.17292	28.862	503	0.00	3.01587	2.8091	3.2227
Online reservation for transportation	3.0873	1.15945	29.889	503	0.00	3.0873	2.8829	3.2917
Online consultation	3.3095	1.13465	32.741	503	0.00	3.30952	3.1095	3.5096
Online appointment with family doctor	3.1667	1.08628	32.723	503	0.00	3.16667	2.9751	3.3582
Online emergency rescue guidance	3.3571	1.17619	32.039	503	0.00	3.35714	3.1498	3.5645
Online health guidance	3.2778	1.08546	33.896	503	0.00	3.27778	3.0864	3.4692
Online chat	2.9524	1.23843	26.76	503	0.00	2.95238	2.734	3.1707
Online psychological counseling	2.7063	1.16665	26.039	503	0.00	2.70635	2.5007	2.912
Online entertainment	3.2143	1.09257	33.023	503	0.00	3.21429	3.0216	3.4069
Online travel consultation	3.0238	1.1133	30.488	503	0.00	3.02381	2.8275	3.2201
Online education	2.5952	1.11124	26.215	503	0.00	2.59524	2.3993	2.7912
Online financial assistance	2.7937	1.12653	27.836	503	0.00	2.79365	2.595	2.9923
Online legal and aid consultation	2.9921	1.08441	30.972	503	0.00	2.99206	2.8009	3.1833

From Table 4, the mean values of online consultation, online appointment with family doctor, online emergency rescue guidance, and online health guidance in the demand for online medical and health services are all greater than the test value of 3. The significance is 0.00, which is less than 0.05, indicating that these four aspects are highly correlated with the living needs of elderly people in Chongqing city. Next is the demand for daily care. Among which, except for online appointment for domestic services, the mean values of online shopping and online reservation for transportation are all greater than the test value of 3. The significance is 0.00, which is less than 0.05. Then comes the dimensions of entertainment and psychological needs, with an average of over 3 for

online entertainment and online travel consultation services. It can be seen that the largest demand for elderly care provided by the internet platform in Chongqing is medical and health care service. With the increase of age, the elderly will inevitably have decline in health condition, travel inconvenience and many other factors. This is why the elderly are looking forward to more convenient medical care services through the internet.

3 Suggestions for Promoting the Development of Online Elderly Care Services in Chongqing

3.1 Strengthen the Construction of the Online Elderly Care Service System and Provide Diversified Services

Each online service platform should provide rich online elderly care services specifically for the elderly to meet their online service needs. Online elderly care services should focus on the demands for the medical and health care services for elderly people, providing convenient services such as online consultation, online appointment with family doctor, online emergency rescue guidance and online health guidance. We also should strengthen the development of online service projects for daily care and entertainment, provide convenient living services and rich online entertainment and leisure services for the elderly. Facing some elderly who are gradually paying attention to their spirit and self, the online service platform should also provide them with chat and relaxation, psychological counseling, and develop online learning and training, legal aid, financial and financial management platforms suitable for the elderly population. In the current situation where community elderly care is the main focus, Chongqing should accelerate the construction speed of community elderly care informatization, introduce professional and high quality elderly care platforms, and integrate online and offline elderly care resources into a large platform containing elderly care service information data, making the supply of elderly care service products more personalized, convenient, and diversified.

3.2 Improve the Security of Online Payments and Safeguard the Consumption Rights and Interests of the Elderly

Online information security is a concern for the elderly. Almost all online activities such as shopping, entertainment and online consultations involve money. The online elderly care service platform should first ensure the security of personal information and online payments. Elderly people can operate online payments through third party payment platforms with higher security, which is a more secure payment method. In addition, communication and security measures should be taken between various online service platforms and banks to ensure the security and reliability of elderly people using bank cards for payment on the internet. Online legal aid services should be provided to elderly people who have been deceived, so that they can feel more at ease when online shopping.

3.3 Make Multiple Efforts to Create a Favorable Online Consumption Environment

Firstly, the government should strengthen the construction of laws and regulatory systems for online consumption, and pay attention to the protection of consumer privacy and other information. Secondly, the government should take on the responsibility of regulating online consumption and maintaining the security of the online consumption environment, and strictly review the promotion of online businesses, especially healthcare related information. Thirdly, the community should increase care for the elderly, provide digital technology training or operational guidance services, and hold lectures to help them actively integrate into digital life.

4 Conclusion

This study shows that the demand for online elderly care services among urban elderly people in Chongqing is mainly concentrated in three aspects: medical and health care services, life care services, and entertainment services. Specifically, there are demands for online emergency rescue guidance, online consultations, online health guidance, online entertainment, online appointment with family doctor, online reservation for transportation, online travel consultation and online shopping services. The smaller demand is concentrated on psychological and self-actualization and assistance service. The main reason includes lacking of trust in online services, fearing of being deceived or privacy leakage. In the future, we should improve online elderly care services guided by demand, and help the elderly adapt to the digital society by shaping a good online consumption environment.

Acknowledgement

The author would like to gratefully acknowledge Humanities and Social Sciences Research Project of Chongqing Municipal Education Commission (Project Number: 22SKGH459), Chongqing Social Science Planning Project (Project Number: 2023NDYB99), Chongqing Key Project for Education Science Planning (Project Number: 2021-GX-035), Project of Chongqing Higher Education Association (Project Number: cqgj23042B), Research project of Chongqing University of Education (Project Number: KY202308B)and Research project of Chongqing University of Education (Project Number:JG202334).

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