

# Design Optimization Strategy for Service Shared Communities Based on Citespace Application

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**Abstract:** China's top tier cities absorb large groups of young people to work and live each year. While economic development brings a demographic dividend, the problem of housing tension is becoming more and more prominent. For the youth groups with higher quality level, their field of thought is no longer limited to renting, but more focused on the quality of life. A standardized, youthful, standardized, well-served and interactive youth sharing community meets this target market. Using SPSS and Citespace to analyze the rental needs and real rental intentions of youth groups, we find the improvement direction of youth sharing community design. By constructing user portraits, mapping user journeys, user contact analysis, and service blueprint planning and other research methods, the pain points and opportunity points of youth sharing communities were summarized in detailed analysis. With users as the center, the virtual community is built through interactive space planning to realize physical sharing, spatial sense creation, and intelligent management, and then design ideas are proposed for the design and construction of shared spaces. Based on the research results, it provides a range of reference for the design strategy of youth sharing communities, which helps to improve user experience, user satisfaction, and promote the optimization and innovation of youth sharing community design.

**Keywords:** shared community; sustainable design; blueprint; user journey map

## 1. Introduction

With the development of modern society, geographical differences are gradually shrinking, and more and more solitary lifestyles are emerging in urban life, the "individual era" of "one person" is beginning, and human interaction is gradually fading <sup>[1,2]</sup>. However, there is a strong desire for interaction in the hearts of young people, so the new model of shared living can promote interpersonal interaction among young people and provide a good way to improve the loneliness of young people in the city, and the shared living model can create a dynamic community organization to meet the current social development <sup>[3]</sup>. In the past, people used to build houses to change the face of the city, but now more and more people are starting to change their life patterns and perceptions of urban life through the creation of living communities. The shared living approach not only helps to increase the frequency of people's common activities and promote interpersonal interaction, but also creates a dynamic community organization that caters to the rapid development of the times <sup>[4,5]</sup>.

## 2. Literature review

In this paper, the academic journals and master's degree theses included in China Knowledge Network were used as the core database, and "youth apartment", "public space", and "service design" were used as the search terms. The search path was "article summary", and 702 articles were searched from 2014 to 2022, excluding conference and newspaper samples. The data were exported in Refworks format, and the CiteSpace software (version 6.1.R3) developed by Dr. Chaomei Chen's team was used to process the data and generate the knowledge graph.

Quantifying the literature retrieved from the knowledge network year by year, there was less relevant literature on shared communities before 2014. after the promulgation of the Regulations on the Administration of Housing Leasing and Sales in May 2017, the Pilot Program on the Use of Collective Construction Land for the Construction of Rental Housing in August 2017, and the Notice on Matters Relating to the Participation of Insurance Funds in the Long-term Rental Market in June 2018, and

many other policies were introduced. The number of articles published in related research fields and cross-disciplines increased significantly. In the emergent word mapping (Figure 1), "Co-construction, Youth Apartment, and User Experience" are all major national decisions on the development of housing rental and sales, so it can be seen that national policy changes are the direct factors affecting the rise and fall of youth community research. It is clear that national policy changes are a direct factor in the rise and fall of youth community research.

| Keywords             | Year | Strength | Begin | End  | 2017 - 2022 |
|----------------------|------|----------|-------|------|-------------|
| Architectural Design | 2017 | 2.1176   | 2017  | 2018 |             |
| Landscape Design     | 2017 | 1.1586   | 2017  | 2018 |             |
| Single Flat          | 2017 | 1.8595   | 2017  | 2018 |             |
| Interior Design      | 2017 | 1.894    | 2017  | 2018 |             |
| Co-construction      | 2017 | 1.3299   | 2018  | 2020 |             |
| Modular Design       | 2017 | 1.1521   | 2019  | 2020 |             |
| Youth Apartment      | 2017 | 1.4418   | 2019  | 2020 |             |
| Model Of Space       | 2017 | 1.1521   | 2019  | 2020 |             |
| User Experience      | 2017 | 1.5187   | 2020  | 2022 |             |

Figure 1: Prominent word mapping (Author's own drawing)

The algorithm was used to cluster and analyze the closely related keywords, and 10 clustering keywords were obtained (Figure 2): including service design (#0), public space (#2), and youth apartment (#7). The indicators of clustering are module value (Q value) and average profile value (S value), and it is generally considered that  $Q > 0.3$  indicates a clear structure of clustering, and  $S > 0.5$  indicates a reasonable division of clusters. In this calculation,  $Q = 0.8534$  and  $S = 0.9634$  indicate that the results meet the requirements. The analysis shows that the research hotspots and trends in the past five years have focused on "public space, youth group, shared space, community space", which are closely related to architecture. In addition, the research focuses on "social activities, behavioral characteristics", which is closely related to sociology and behavior. From the change of keywords, it can be seen that the research perspective of youth shared space has a multidisciplinary trend, and gradually formed a cross-disciplinary research direction.

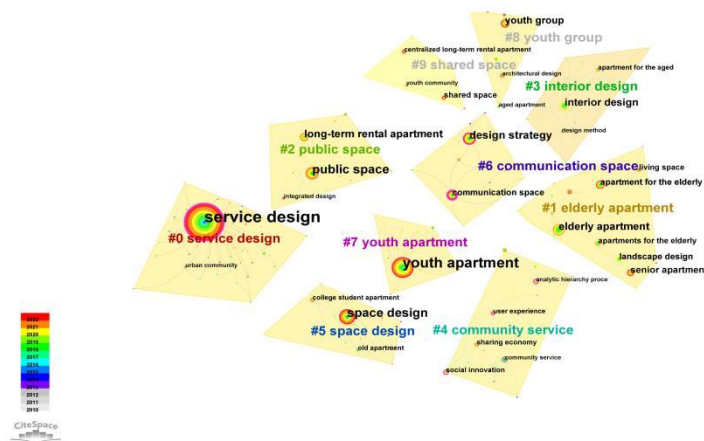


Figure 2: Clustering keywords (Author's own drawing)

The keyword timeline mapping (Figure 3) arranges the keywords of the same cluster on the same horizontal line in chronological order, and focuses on the interconnection and influence within the clusters. "The "#5 community service" cluster was the first to emerge as a research hotspot in 2014, and it is closely related to the subsequent research, and the development is more balanced. The "#1 Youth Apartments" cluster has recently focused on landscape space and public participation; the "#6 Shared Space" cluster is still in the preliminary stage of research.

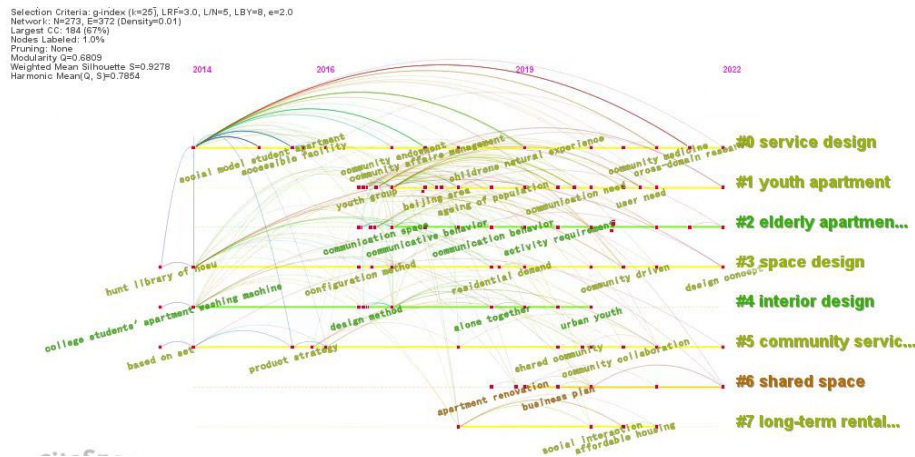


Figure 3: Keyword timeline mapping (Author's own drawing)

### 3. Materials and Methods

Service design theory emphasizes user-centeredness and user experience with systematic and holistic thinking. It pays more attention to the value brought by the whole service [6,7], emphasizes the need for the development of youth sharing communities that users feel, optimizes the behavioral process of user groups, and builds a new interactive service platform. In the context of today's digital society, the application of service design to youth sharing communities can quickly and extensively enhance users' residential service experience, which has certain significance for the development of youth sharing communities [8]. There are various service design methods, and typical methods include constructing user portraits, mapping user journeys, stakeholder maps, spatial user contact point analysis, and service blueprint planning, etc. These methods can help researchers fully understand user needs, optimize user journeys, and build overall service experiences [6,9], thus helping youth sharing community service systems reshape user processes and organizational forms.

In short, by applying theories and methods of service design, exploring the behavioral needs of stakeholders in the user process, using user journey diagrams, constructing a complete service framework, and optimizing the design of various user touchpoints in the service framework to make the service create a better experience and value for users and relevant stakeholders [10].

#### 3.1 Service design process

The process of service design is not a linear process, but an iterative process of constant iterative exploration, and different stages in the process of service design correspond to different methods of research [11,12]. The constant iterative nature of the process means that it is always possible to go back to the previous step or the first step and start over again in the actual operation of the service design, which is constantly and repeatedly executed for user process optimization [13]. The whole service design process can be summarized into four stages: concept generation, concept analysis, concept development, and optimization design, each of which corresponds to different design tools and methods, but each method is not limited to a specific step, and designers can choose tools and methods according to the actual needs of the design process.

#### 3.2 Design Method

##### 3.2.1 Questionnaire analysis

SPSS is a commonly used statistical data analysis software, which is widely used for data analysis and decision analysis [14]. Some scholars proposed to use statistical methods to clarify design problems and user requirements problems, and use factor analysis to downscale user problems and extract key problems for design solutions. Wan Fucheng proposed a user requirement classification method based on the factor principal component method to effectively categorize and refine the key user requirements. Therefore, SPSS analysis method is used before user requirement analysis to cope with the changing trend of modern product characteristics and to make up for the insufficient application of the previous method in the existing insight process.

### (1) Sample description

According to the limitation of age and area of youth group, the valid respondents should be limited to the youth group between 18-35 years old living in Zhengzhou area, so 27 questionnaires with age and area not in this range were excluded, and the valid questionnaires were 200. The valid questionnaires were 200. The survey questionnaire includes four levels of content: one is the research of the basic information of the target group, in which the basic information questionnaire, the number of male students accounts for 42% and the number of female students accounts for 58%; the number of people who have rental experience accounts for 62% and the number of people who do not have rental experience accounts for 38%; the number of people who are willing to rent in the future accounts for 74% and the number of people who are not willing to rent in the future accounts for 26%. The second is the research on the current living situation and the evaluation of the target group; the third is the research on the living behavior and habits of the target group; the fourth is the research on the living demand of the target group, so as to lay the foundation for the subsequent research.

### (2) Reliability analysis of the questionnaire

Reliability analysis is the analysis of the reliability of the questionnaire research data (Table1). It is generally accepted in academic circles that a reliability coefficient of 0.80-0.90 indicates that the reliability is quite good and the collected data are highly reliable; between 0.7-0.8 indicates that it is acceptable; between 0.65-0.70 indicates that the table needs a lot of adjustment to improve the reliability of the data; below 0.60 indicates that the reliability of the data is very low and this data can be discarded. The results of the SPSS reliability analysis were: Cronbach's coefficient was 0.8, and the reliability coefficient was greater than 0.8, indicating that the reliability was very good and the data could be analyzed further. For the CITC values, the CITI values of the analyzed terms are all greater than 0.4, which indicates that there is a good relationship between the analyses and also proves the good quality of the data reliability.

*Table 1: Reliability analysis of youth sharing community questionnaire (Author's own drawing)*

| Cronbach Analysis Reliability |             |            |
|-------------------------------|-------------|------------|
| Number of terms               | Sample size | Cronbach α |
| 30                            | 200         | 0.844      |

### (3) Questionnaire KANO model analysis

The Better-Worse index is used to calculate the effect of the level of satisfaction of the service content on increasing user satisfaction (Better) and preventing user dissatisfaction (Worse). The Better-Worse index is used to calculate the effect of service content satisfaction on improving user satisfaction (Better) and preventing user dissatisfaction (Worse), to show the impact of each service content satisfaction on overall user satisfaction, and the relative situation of each service quality in the total service quality in reality<sup>[15]</sup>.

$$\text{Better} = (A+O)/(A+O+M+I)$$

Indicates the effect of providing a service on improving user satisfaction, and is a positive value between 0 and 1. A higher value indicates that the service has a greater effect on improving user satisfaction.

$$\text{Worse} = (O+M)/(A+O+M+I)*(-1)$$

Indicates the effectiveness of providing a service in preventing user dissatisfaction, and is a negative value between -1 and 0. The closer to -1 means that the service is more effective in preventing user dissatisfaction.

The classification results of the Kano model (Figure 4), the "Classification Results" column shows the classification results of the Kano model for each service content, and the "Segmentation Attributes" is the final result based on the refined Kano model.

The essential service content (M) is the basic demand of the youth sharing community, and the satisfaction of the users will be greatly reduced if the service content is not satisfied. ". The higher the degree of realization of the expected service content (O) and the better the quality, the higher the satisfaction of the users will be. Therefore it is necessary not only to improve such service contents, but also to focus on the quality of these service contents. In this study, the expected service contents are "Shared coffee house, Shared study room, Shared gym, Shared living room, Shared landscape". The charming service content (A) is the service content that users have potential needs, and the realization

of these service content can significantly improve user satisfaction, and there is no dissatisfaction when not provided. "These service contents are more attractive to users, and providing these service contents can significantly improve user satisfaction. Undifferentiated service content (I) has no significant impact on improving user satisfaction and reducing user dissatisfaction, and only "Shared barber shop" is an undifferentiated attribute in this study, which can be withheld under limited conditions. However, with the change of service environment and the growing user demand, the service may become a charm, which needs to be followed up <sup>[16]</sup>.

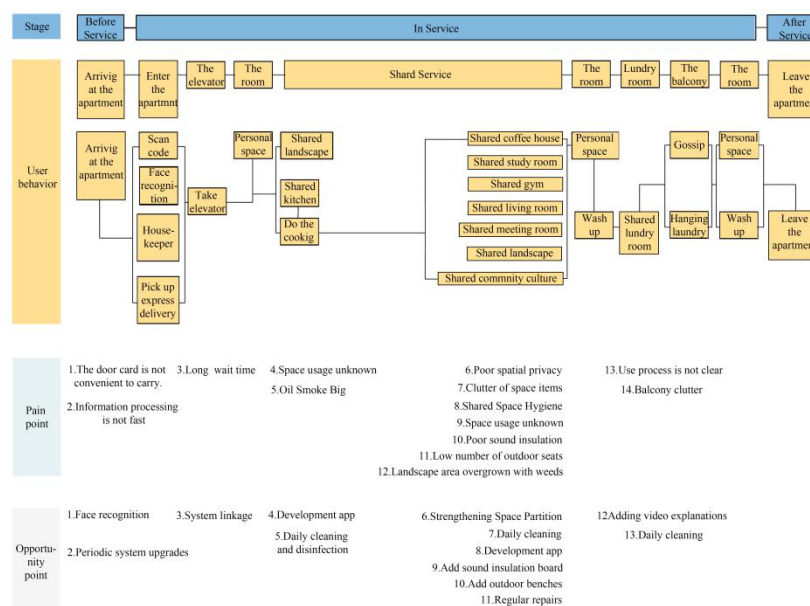
| KANO Model Analysis Results                            |    |    |    |    |   |   |                          |        |         |
|--------------------------------------------------------|----|----|----|----|---|---|--------------------------|--------|---------|
| Function                                               | A  | O  | M  | I  | R | Q | Result of classification | Better | Worse   |
| No shared coffee house & Shared coffee house           | 12 | 26 | 10 | 1  | 0 | 0 | O                        | 77.55% | -73.47% |
| No shared study room & Shared study room               | 4  | 23 | 8  | 14 | 0 | 0 | O                        | 55.10% | -63.27% |
| No shared gym & Shared gym                             | 4  | 27 | 3  | 15 | 0 | 0 | O                        | 63.27% | -61.22% |
| No shared barber shop & Shared barber shop             | 2  | 9  | 18 | 19 | 1 | 0 | I                        | 22.92% | -56.25% |
| No shared living room & Shared living room             | 0  | 32 | 4  | 13 | 0 | 0 | O                        | 65.31% | -73.47% |
| No shared meeting room & Shared meeting room           | 2  | 10 | 21 | 16 | 0 | 0 | M                        | 24.49% | -63.27% |
| No shared laundry room & Shared laundry room           | 5  | 12 | 20 | 12 | 0 | 0 | M                        | 34.69% | -65.31% |
| No shared kitchen & Shared kitchen                     | 3  | 14 | 20 | 12 | 0 | 0 | M                        | 34.69% | -69.39% |
| No smart home & Smart home                             | 21 | 7  | 11 | 10 | 0 | 0 | A                        | 57.14% | -36.73% |
| No virtual community & Virtual community               | 32 | 3  | 2  | 12 | 0 | 0 | A                        | 71.43% | -10.20% |
| No shared landscape & Shared landscape                 | 5  | 22 | 8  | 14 | 0 | 0 | O                        | 55.10% | -61.22% |
| No shared community culture & Shared community culture | 23 | 9  | 3  | 14 | 0 | 0 | A                        | 65.31% | -24.49% |

Figure 4: Analysis of the results of the Kano model for youth sharing communities (Author's own drawing)

### 3.2.2 Service design methods

#### (1) Mapping the user journey

In order to gain an in-depth understanding of the complete process of the youth group's daily behavior in the community, user interviews and behavior tracking studies were conducted with users who rented youth apartments and youth communities around the author to sort out the behavioral touchpoints and overall process of youth users in community activities <sup>[17,18]</sup>. During the interview process, the relevant behavioral habits of users were collected to understand their current expectations and needs. At the end of the series of interviews, the information was summarized to draw a user journey map, and the pain points and opportunity points of young users in community living were analyzed based on their specific behavioral activities ( Figure5) <sup>[19]</sup>.



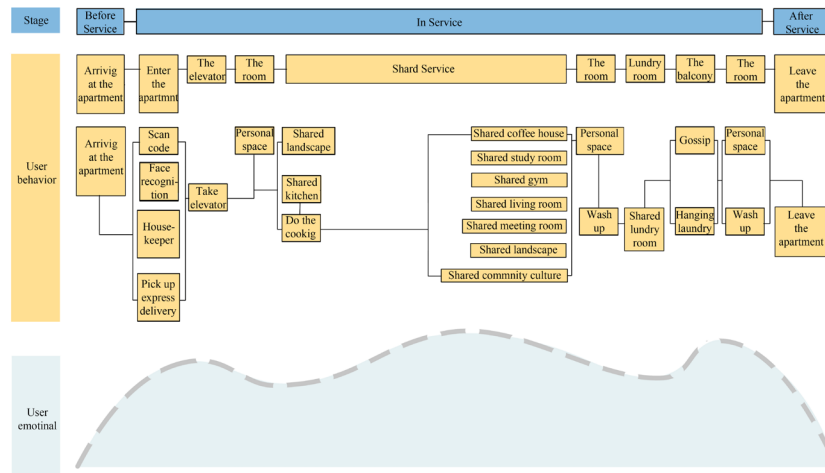


Figure 5: Youth Sharing Community User Journey Map (Author's own drawing)

## (2) Spatial user contact point analysis

Based on the behavioral flow, pain points, and opportunity points of users in the user journey diagram, the behavioral flow is analyzed and summarized under the perspective of users, and the contact analysis diagram of user behavioral flow is drawn. According to the user journey diagram and the contact analysis diagram, the user's interaction behavior with the space of the youth sharing community is summarized in the existing space-related contacts (Figure6) <sup>20]</sup>.

## (3) Service blueprint planning

Based on the analysis of the user travel map, the service blueprint of the youth sharing community is constructed. (Figure 2-25) The diagram consists of three types of horizontal user behaviors and five types of user interactions vertically, which are the hidden user behavioral interactions in the service design of the youth sharing community more clearly, and the subsequent service design optimization direction can be clarified through the connection relationship between the modules of the service blueprint (Figure7).

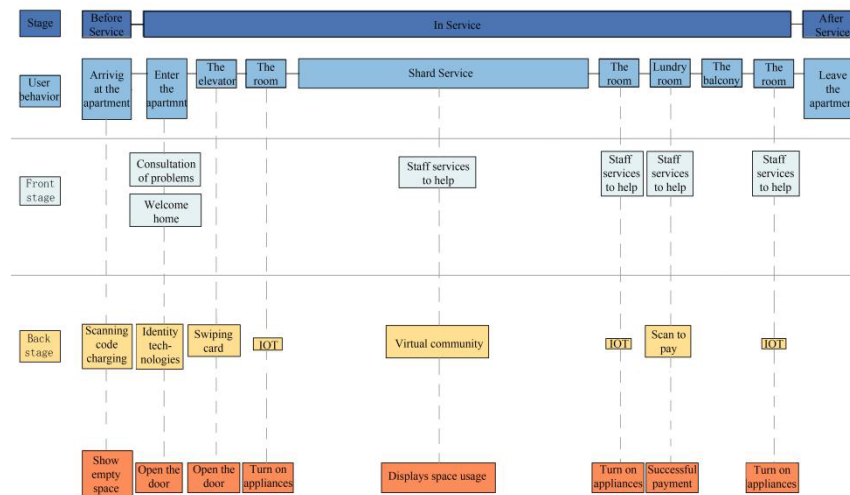
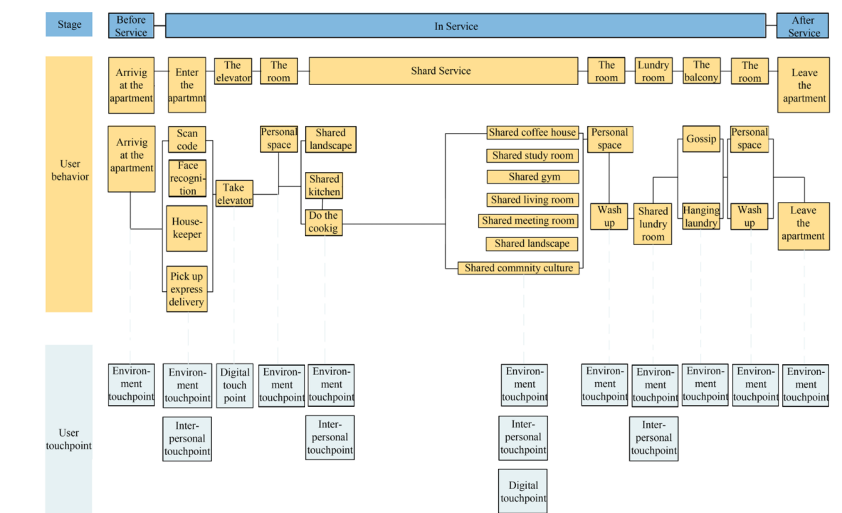


Figure 6: Analysis of user contacts in youth sharing community space (Author's own drawing)



## 4.2 Tangible sharing with interactive space planning

### 4.2.1 Rational planning of social space distance

The social space distance design in this study is particularly important to make with variability according to different situations and different spatial needs to meet the psychological comfort of the user group as the minimum spatial range (Table2). Scientific distance is conducive to promoting communication and maximizing the use of spatial resources, for example, two communicators will have more positive feelings at a moderate distance. American anthropologist Dr. Hall proposed the concept of interpersonal distance, which is based on the closeness of interpersonal relationships and behavioral characteristics, including "common distance, social distance, personal distance, intimate distance".

Through the distance test in the field, using AutoCAD to draw the interpersonal distance, when the seat is set close to the distance, the two sides only need to rely on simple body twisting when talking; the seat is set farther away, it requires a large body rotation, which is not conducive to the occurrence of conversation behavior (Figure8). According to the above theories and the author's field test, when the distance between daily interpersonal communication is kept at 1.2-1.5 meters, both parties can be in a casual and relaxed state, which is conducive to the occurrence of conversation behavior and provides a good experience for the conversation process.

Table 2: User group comfortable social space range (Author's own drawing)

| Interpersonal distance | Distance           | Scenario                           |
|------------------------|--------------------|------------------------------------|
| Common distance        | Above 3.6 meters   | Speech                             |
| Social distance        | 1.2-3.6 meters     | Business negotiation               |
| Personal distance      | 0.45-1.2 meters    | Normal social interaction          |
| Intimate distance      | Within 0.45 meters | Talk to relatives & closed friends |

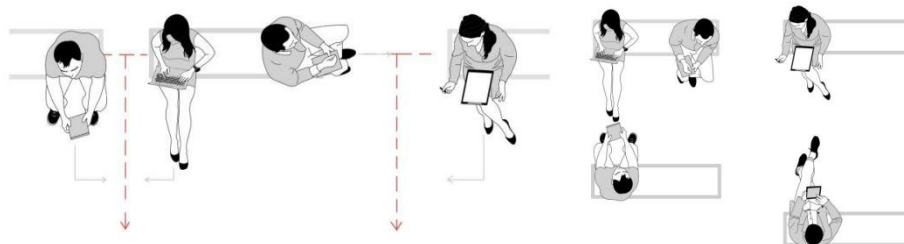


Figure 8: Legend of interpersonal communication distance dimensions (Author's own drawing)

### 4.2.2 Develop multi-share activities

Guided by service design thinking, user needs are met while providing a better experience. Shared café, shared study room, shared gym, shared living room, shared meeting room, shared landscape, and other shared space settings. At the same time, diversified community activities have been undertaken to enrich the social activities of youth users. Converts intangible shares into tangible shares, creating a good cycle.

## 4.3 Intelligent management to build virtual communities

### 4.3.1 Intelligent management services

Smart communities that combine youth sharing communities, smart appliances, IT systems and the Internet of Things are the current trend. The specific solutions needed are as follows.

Installation of intelligent monitoring: Rationalize the monitoring arrangement according to the community space to avoid the existence of monitoring dead ends and security hazards. Early warning design for abnormal movements through video monitoring link design to enhance the safety of users' living.

Intelligent space reservation system: Develop a one-click reservation system for shared spaces in the community APP and record the user usage of all public spaces. Users can enter the community APP interface to see the number of people using each public space, and this data is transmitted to the community APP through the data center's. Meanwhile, developers can monitor space usage through the

APP's to understand the usage of different space areas and strengthen the optimal management of spaces with frequent usage.

#### 4.3.2 "Virtual Community"

With the continuous development of science and technology, the application of 5G technology has become an important representative of today's society. Internet technology is constantly changing the structure and mode of human social interaction, and people can interact and communicate selectively without barriers under the role of Internet, and this new organizational situation is "virtual community". As an extension of the traditional community, the core of the "virtual community" is the intangible sharing, i.e., the sharing of information, the exchange of skills, and the emotional connection between people. To establish a "virtual community" to realize intangible sharing, firstly, we should make use of modern new technologies to optimize the knowledge sharing and skills exchange platform, realize efficient dissemination of knowledge sharing, and establish a knowledge warehouse of the "virtual community"; secondly, improve Secondly, we should improve the specification system of "virtual community"; finally, we should optimize the membership structure of "virtual community" and enhance the knowledge sharing ability of the community. By redesigning the interactive interface of the APP of the "virtual community" of the youth sharing community, the APP can share the users' daily life, view and book community cultural activities, and other functions to further strengthen the social behavior of the user group (Figure9).

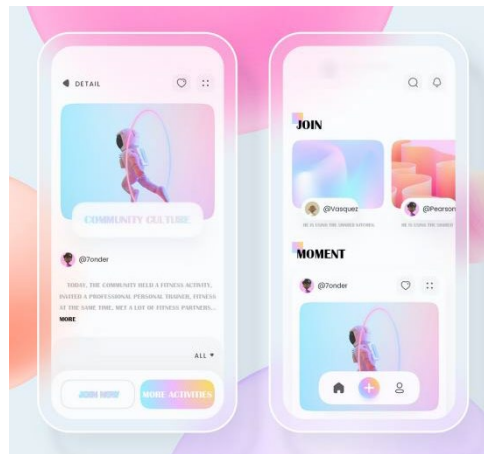


Figure 9: Interactive interface of "virtual community" of youth sharing community ((Author's own drawing)

## 5. Conclusion

This thesis is a fundamental theoretical study of youth sharing communities and the optimization strategy of youth sharing communities with the participation of service design methods, to clarify the current status, strengths and weaknesses, and development trends of youth sharing communities. Through visual data analysis of the results of the targeted questionnaires, we discover the rental needs and the real needs of the youth renting group, and derive the design improvement directions from them. Guided by the principles of service design, the theoretical optimization strategy is proposed in four aspects of the youth shared community: user-centeredness, tangible sharing with interactive spatial planning, creation of a sense of spatial place, and intelligent management to establish a virtual community.

This thesis applies the concept of service design to optimize and create a service strategy for youth shared community touchpoints, which has research implications for improving user satisfaction. This paper presents the current problem of existing service status of youth sharing community touchpoints by investigating and analyzing the behavioral activities and processes of user needs through questionnaires and literature research; obtaining the demand model of incoming users; constructing a user journey map, analyzing existing touchpoints, drawing a service blueprint, and obtaining the design principles for optimizing the service strategy of community touchpoints, thus proposing the design strategy optimization method for youth sharing communities.

The user behavior is observed and described to obtain the service demand of youth sharing community users and construct a user service demand model. Through research and analysis,

conclusions are drawn to realize tangible sharing with interactive spatial planning, pay attention to the proportional scale, interface color, and spatial structure of spatial planning, and intelligently manage the construction of virtual communities.

(1) Constructed a user journey map of the youth sharing community, analyzed the service strategies of the existing touchpoints of community users in the journey map, drew a service blueprint of the youth sharing community, and proposed design principles for the optimization and creation of touchpoint service strategies.

(2) Based on the previous research and analysis of the current service situation and problems of the youth sharing community and the analysis of the needs of the incoming users, we optimize the service strategy for the community-related service touchpoints.

The research in this thesis still has certain limitations. The author's own knowledge of statistics and other disciplines is insufficient to quantify the design of public space forms, and the field research on domestic youth sharing communities is somewhat one-sided, as well as in the distribution of questionnaires, user interviews, and user behavior tracking studies. For example, the research on the design of youth shared communities based on the concept of service design can still be deepened, but it is not enough by itself. It is expected that more scholars will pay attention to the problems of youth shared community development, so that the theoretical and practical research on the design of youth shared communities based on service design can be developed in a longer way.

In summary, this thesis analyzes and summarizes the development of youth sharing communities with the service design development of youth sharing communities as the research background. It is hoped that the research in this paper can provide theoretical references for the subsequent development of youth sharing communities and promote the further development of youth sharing communities.

## References

- [1] Chan, J.K.H., & Zhang, Y. (2021). *Sharing Space: Urban Sharing, Sharing a Living Space, and Shared Social Spaces*. *Space and Culture*, 24(1), 157–169.
- [2] Satoko, S.; Wang, Y.; Xu, M. *Shared housing - a way of living out of isolation*. *Urban Architecture* 2016, 20-23.
- [3] Byun N and Shon D (2022) *Living Place Matters: The Duplicity of Shared Housing in the Young Adults of South Korea*. *Front. Psychol.* 13:634905.
- [4] Wang, Y. *On the Shared Space Form of New Co-housing Community*. Central Academy of Fine Arts, Beijing, 2017.
- [5] Wu, M. *Research on the design of urban youth housing space based on the "co-housing" model*. Donghua University, Shanghai, 2018.
- [6] Hu, F.; Li, N. *Defining "service design"*. *Packaging Engineering* 2019, 40, 37-51.
- [7] Jorge Sierra-Pérez, Jorge Grenha Teixeira, Carlos Romero-Piqueras, Lia Patrício, *Designing sustainable services with the ECO-Service design method: Bridging user experience with environmental performance*, *Journal of Cleaner Production*, 2021, Volume 305.
- [8] Yu, S. *Exploration of Youth Sharing Community Model in the Context of Shared City*. Shanghai Jiaotong University, Shanghai, 2018.
- [9] Luo, S.; Zou, W. *Status and progress of service design research*. *Packaging Engineering* 2018, 39, 43-53.
- [10] Busciantella-Ricci, D., Aceves-Gonzalez, C. (2021). *Framing Design for Inclusion Strategies for Service Design*. In: Shin, C.S., Di Bucchianico, G., Fukuda, S., Ghim, Y.G., Montagna, G., Carvalho, C. (eds) *Advances in Industrial Design. AHFE 2021. Lecture Notes in Networks and Systems*, vol 260.
- [11] Yi, W. *Research on the design of community elderly space based on service design thinking*. Northeast Forestry University, Haerbin, 2021.
- [12] Wang, C. *Research on the design of customized service system for spatial experience*. Jiangnan University, Wuxi, 2014.
- [13] Jiang, Y.; Zhang, L. *Exploring the evolution and design principles of service design system diagram*. *Decoration* 2017, 79-81.
- [14] Liao, M. *Reliability and validity of questionnaires and the use of SPSS software*. *Science and Technology Outlook* 2016, 26, 290.
- [15] Wang, K. *Research on service design method based on Kano model*. Nanjing University of Aeronautics and Astronautics, Nanjing, 2019.
- [16] Wu, T., Yang, F., Zhang, D., Zhu, A., and Wan, F. (2020). "Research on Recommendation System

*Based on User Portrait,” in 2020 IEEE International Conference on Artificial Intelligence and Information Systems (ICAIS) (IEEE).*

[17] Li, F. *Omnichannel customer journey experience map - an integration study based on user portrait, customer experience map and customer journey map. Techno-Economics 2019, 38, 46-56.*

[18] Wei, W.; Wu, C. *A comparative study of user experience map, customer journey map and service blueprint. Packaging Engineering 2019, 40, 217-223.*

[19] Ding, X.; Zhou, W.; Liu, S. *Identification and research of journey visualization tools in service design. Decoration 2021, 80-83.*

[20] Wu, C.; Li, P. *User experience map and contact information analysis model construction. Packaging Engineering 2018, 39, 172-176.*

[21] Burçak Altay, *Multisensory experience of public interiors, The Senses and Society, 2021, 292-307.*

[22] Tong, Y. *Exploring the principles of service design based on user-centered thinking. Industrial Innovation Research 2020, 74-75.*

[23] Zhu, Y. *Service design of "cohousing" youth community. Central South University of Forestry Science and Technology, Changsha, 2020.*

[24] Wang, K. *Research on the design of unmanned convenience store for youth community based on SAPAD. Guangdong University of Technology, Guangdong, 2019.*

[25] Zhou, Y.; Sun, L. *Research on the sustainable use design of youth shared community space. Furniture and Interior Decoration 2020, 42-44.*