



Is the Development of 15-min Commercial Circle a Boon or Bane? Exploring its implications on Citizen's Quality of Life in Zhengzhou, China

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Abstract

Rapid urbanization in China has led to the emergence of the 15-minute commercial circle, but more research is needed on its impact on residents' quality of life. This study aimed to propose construction plans and explore the circle's influence on residents' quality of life in Zhengzhou. Semi-structured interviews with 15 community residents were analyzed using NVivo software. Results indicated positive economic impacts but negative environmental and social impacts. The 15-minute commercial circle plays a dual role, requiring future sustainable and inclusive practices that address income inequality and environmental protection. Limitations include a small sample size and a focus on Zhengzhou.

Keywords: 15-minute Commercial Circle; Resident Quality of Life; Urbanization; Zhengzhou

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1.0 Introduction

The period from 1949 to 1978 represents a significant epoch in China's welfare housing system, during which the government aimed to provide affordable housing to its citizens (Selden & You, 1997). The system was founded on the principle of "equal distribution of resources," which ensured all individuals were entitled to a rudimentary living space. However, the system exhibited some limitations, such as that only a minute proportion of the population owned their own homes (Lee, 2000). The restricted supply of welfare housing was insufficient to satisfy the escalating population's demands for habitable living environments. This resulted in low overall satisfaction with living conditions, and many individuals found themselves inhabiting cramped and substandard dwellings within the welfare housing complex (Wu et al., 2019).

Following the implementation of the market economy system in 1979, China underwent a period of housing reform that aimed to address the shortcomings of the welfare housing system. The housing reform went through three stages: pilot housing sales, rental subsidies, and sales with rentals. By the end of 1999, the self-ownership rate of urban housing in China had reached around 70%, indicating that the reform successfully increased the number of people who owned their homes (Wang & Murie, 2000).

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However, during this period, the quality of commercial housing could have been better, with little consideration for factors such as layout, sound insulation, and supporting facilities. Nevertheless, residents' living conditions had improved significantly compared to the welfare housing period. With increased disposable income, people began to prioritize housing quality, education resources, the potential for appreciation, property management, and transportation conditions (Li et al., 2020). These changing preferences reflect the increasing demand for a better quality of life and the gradual adoption of a people-oriented approach to urban development.

As urbanization and economic development accelerated in China, the real estate industry became one of the pillars of the country's economy. Commercial housing development has entered a new era marked by a focus on quality and variety. Housing designs have become more reasonable and diverse, offering a wider range of options with more comprehensive supporting facilities.

As a result of these changes, the community has emerged as the basic spatial unit of urban life and the main place for daily activities such as living and leisure. In response to this trend, the Ministry of Housing and Urban-Rural Development issued the "Planning and Design Standards for Urban Residential Areas" (revised edition) in 2018, which proposed a life circle concept based on the walking time of people as the starting point for facility grading and supporting facilities.

In recent years, first-tier cities such as Beijing, Shanghai, and Guangzhou have proposed building 15-minute community life circles (Wu et al., 2021). These circles consider residents' daily needs based on their actual living space and requirements. The aim of the 15-minute Commercial Circle concept is to provide residents with access to essential services such as healthcare, education, and shopping within a 15-minute walking distance. However, there needs to be more relevant literature on the impact of completing the 15-minute business district on community residents (Wu et al., 2021). Based on the discussion above, this study proposed the main research objectives:

1. To investigate the positive/ negative impact of the 15-minute Commercial Circle on residents' quality of life
2. To provide in-depth insights into community governance and planning

It is hoped that the study will contribute to the construction of the 15-minute Commercial Circle and improve the quality of life for urban residents.

2.0 Literature Review

2.1 The concept of life circles in urban planning.

Life circles have gained significant attention in urban and regional planning in recent years. Its origins can be traced back to Japan, where the idea of "jissen-kai," or practical circle, emerged in the 1970s. The concept of life circles has since spread to other countries and regions, including South Korea, Taiwan, and China (Liu & Chai, 2015).

Life circles have rich spatial-temporal scale attributes, similar to living space and living region concepts. Essentially, life circles are understood from the perspective of residents' activity spaces to comprehend the city's activity and movement system, spatial structure, and system. The daily life circle refers to the spatial range or movement space formed by residents conducting activities such as shopping, leisure, commuting, social interaction, and medical care centred in their homes (Li et al., 2021).

Life circles reveal the functional structure of space in cities and regions, showcasing commuting and shopping patterns and social connections between urban areas. This concept echoed the research findings in smart cities in Asia where the most concerned factors in the communities are the public services and quality of life in the neighbourhood (Tan et al., 2021). Similar to the notion of smart cities, the life circles – the pre-designed communities provide a more accurate reflection of the interaction between residential living spaces and residents' actual conditions compared to economic and administrative contacts. Life circles illustrate the dynamic relationship between resource allocation, facility supply, and resident demand, reflecting aspects like lifestyle, quality of life, spatial equity, and social inclusion.

In recent years, life circles have become essential tools for balancing resource allocation, maintaining spatial justice, and organizing local life, particularly when combined with urban and rural planning. With the emergence of the 15-minute Commercial Circle concept, urban planners focus on creating more livable and sustainable communities by ensuring that residents have easy access to essential services, such as groceries, medical care, and entertainment, within a 15-minute walk or bike ride from their homes. This approach seeks to foster community cohesion, enhance social and economic vitality, and improve residents' quality of life.

In conclusion, life circles provide a valuable framework for understanding the complex relationship between urban planning, residents' living spaces, and the spatial organization of social and economic activities. Underpinned and informed by this life circles framework, this study discussed the role of the 15-minute Commercial Circle in shaping urban form and function, creating more livable and sustainable communities, and promoting social and economic equity.

2.2 Commercial development and its impact on community life circle in Zhengzhou.

After experiencing the largest urbanization process in human history, China has gradually embarked on the road of building a new type of urbanization. However, the stubborn problems left behind by traditional urbanization still plague current urban construction (Chen et al., 2021). The prevalent problem of "land-oriented urbanization" rather than "people-oriented urbanization" has resulted in inadequate fulfilment of residents' reasonable demands for urban space. Therefore, the key to achieving high-quality development in new urbanization is to prioritize "people-oriented" resident satisfaction through life circle planning, which reshapes residents' living space.

Since 2018, "life circle" has been included in the new version of the "Planning and Design Standards for Urban Residential Areas", associated with spatial service facilities and other material foundations, becoming the critical object of current residential area planning,

construction, and management. The planning and design of life circles have rich spatial-temporal scale attributes. They are understood from the perspective of residents' activity spaces to comprehend the city's activity and movement system, spatial structure, and system.

As a complex system in daily social life, the community has become the core contact surface of urban space. Its structural system is closely related to residents' quality of life. Most scholarly works focused on life circle construction or quality life circle in the metropolitan. Less is known about it in less developed countries and cities. In order to fill this knowledge gap, this study selected Zhengzhou, a city that has developed rapidly in recent years, and took Zhengzhou's community life circle as the research object, based on residential areas and commercial development. By examining the commercial development of Zhengzhou's community life circle, this study aimed to explore its impact on residents' lives and to evaluate the advantages and disadvantages of its development comprehensively.

3.0 Methodology

3.1 Data Collection and procedures

This study employed a case study design, using a qualitative approach to capture residents' lived experiences in a 15-min commercial circle in Zhengzhou. The case study design allows for a close examination of complex issues, yielding an in-depth and contextualized understanding of a contemporary phenomenon after getting approval from the research committee. An in-depth interview was conducted from February to July 2022. At last, 15 residents participated in the interview. This sample size aligns with the suggestion made by Guest et al. (2013), who recommend a sample size of 12-15 participants to achieve data saturation, where new data no longer adds significant insights to the research question.

3.2 Sampling and sample technique

Our sample consisted of residents in a community in Zhengzhou, China, who have experienced living without a 15-min Commercial Circle and living with a perfectly matched 15-min Commercial Circle, providing a better comparison of the impact of commercial facilities on their lives. The selection of participants was a key focus of this study, as they directly influenced the research process. We implemented public recruitment through social media platforms such as WeChat and Weibo, using snowball sampling optimization. The three recruitment conditions were: (1) living in Zhengzhou with well-equipped commercial facilities within a 15-minute Commercial Circle; (2) having lived in an older type of community; and (3) being 25 years of age or older.

Although this was a convenient sample, we intentionally recruited participants of different ages and interviewed 15 community residents face-to-face five times and through telephone and WeChat conversations ten times within one month (see Table 1). Each interview lasted an average of 40 minutes. We informed the participants of the research purpose, obtained verbal consent, and anonymized their information. We asked general exploratory questions, such as "What changes has the 15-min Commercial Circle brought to your life?" and "What conveniences and difficulties have you encountered in these changes in your life?" We focused on their feelings and narratives and mainly inquired about their comparison of the actual impact on their lives before and after the commercial circle was built. We encouraged them to explain and analyze related issues from their own perspectives and to recall whether their family members had similar feelings.

We used the "phenomenological theory" approach, prioritizing the interpretation of the interviewees' voices. We moved back and forth between empirical data and conceptual discussions to ensure the relevance of the concepts. On the one hand, we conducted in-depth research on the data to understand why and how specific terms describe and explain social behaviour. On the other hand, we used "diagnosis analysis" to continuously compare empirical data with existing literature (Timmermans & Tavory, 2012).

Table 1. Participants Profile

| Participant | Gender | Platform | Age |
|-------------|--------|-----------|-----|
| P1 | Male | Telephone | 29 |
| P2 | Female | WeChat | 32 |
| P3 | Male | F2F | 43 |
| P4 | Female | Telephone | 49 |
| P5 | Female | Telephone | 46 |
| P6 | Male | F2F | 35 |
| P7 | Female | WeChat | 56 |
| P8 | Female | WeChat | 58 |
| P9 | Male | F2F | 31 |
| P10 | Male | F2F | 27 |
| P11 | Female | F2F | 32 |
| P12 | Male | Telephone | 58 |
| P13 | Female | Telephone | 44 |
| P14 | Female | WeChat | 33 |
| P15 | Male | WeChat | 28 |

4.0 Findings

4.1 Cost-saving

One of the interviewees (P3) said, "The development of the 15-minute business circle has greatly improved the convenience of our lives. Transportation has become much more convenient. We can go to work and pick up and drop off children much faster. Moreover, eating has become very convenient when we don't cook at home." This is in line with what life circle advocates-- resource allocation, facility supply, and resident demand (Gong et al., 2022). The cost-saving of time, transportation, and economy were mentioned by several interviewees in relation to the 15-minute commercial circle. P1 talked about the commuting time saving; he said, "The commercial area is very prosperous, providing more transportation options for people, which reduces commuting time and transportation costs. Additionally, it significantly improves efficiency in purchasing daily necessities and meals, thereby saving time". The reason is that urban living often entails high transportation costs. If private transportation is used, such as cars or motorcycles, fuel costs, parking fees, and other expenses must be considered. To reduce these costs, public transportation can be used, such as subways, buses, and shared bikes. Public transportation is typically cheaper than private transportation and can reduce traffic congestion and pollution. The coverage of the commercial circle enables residents to choose public transportation better, which can reduce transportation costs.

4.2 Convenient lived experience in daily routine

Another interviewee (P11) mentioned that "the improvement of their living circle had expanded their dining options. We can now choose to eat snacks at the snack street, where the food is both delicious and affordable, or we can celebrate important occasions with friends or family at some high-end restaurants." Another one shared the same opinion, arguing that "some restaurants have luxurious decorations and elegant atmospheres, providing a more comfortable and elegant dining environment (P6)." Dining establishments in the commercial circle also focus on the dining experience of customers, with enthusiastic and thoughtful service attitudes that can provide customers with a good quality of service. Overall, 15-minute Commercial Circle enables residents to have easy access to essential services, such as groceries, medical care, and entertainment. P15 stated that "the construction of 15-minute Commercial Circle allows residents to choose reasonably-priced restaurants, and purchase discounted products." Firstly, the commercial circle has a wide variety of dining options, catering to people with different tastes and preferences, such as Chinese, Western, Japanese and Korean cuisine. In addition, many well-known brands in the commercial circle can provide more exquisite and high-end shopping experiences, satisfying the needs of residents for gatherings and banquets and providing great convenience.

4.3 Noisy living environment

Other interviewees hold different views. P7 believe that "although the construction of the commercial circle has made life more convenient, it has also brought more noise and a noisier living environment. Excessive noise at night can affect rest. At the same time, the construction of the commercial circle has eroded the green space around the community, making the green environment even less."

Moreover, during the interview process, some respondents expressed dissatisfaction with living in the 15-min Commercial Circle. One participant (P4) mentioned that "the most prominent feeling is the chaos of people in the commercial circle". P3 said, "There are usually a large number of shops, office buildings, and high-traffic metro and bus stations, which bring problems such as personnel aggregation and traffic congestion, making it difficult for residents in the commercial circle to enjoy a quiet living environment". Thus, although a people-oriented commercial circle has resulted in great inconvenience, this convenience also negatively affect the living condition. Secondly, the commercial circle's operating mode usually focuses on the night-time economy, with shops, restaurants, cafes, and other places often staying open late into the night or even until early morning. One participant (P8) said, "It has too much noise at night because some bars play very loud music till midnight." Such an environment not only has a negative impact on residents' daily routines but also brings noise pollution problems, making it difficult for residents to enjoy a quiet night. Finally, the commercial circle often encroaches on the city's green areas, leading to a decrease in green space and a need for more fresh air.

5.0 Discussion

In order to build a global city and prepare for a future society with a more diverse population structure, Zhengzhou has adopted the 15-minute community life circle (15min-CLC) strategy. However, current research indicates that there is still a need to further fulfil the balance between the construction of the life circle and the needs of the people within it (Wu et al., 2021). The 15-minute commercial circle and the life circle theory are closely interconnected concepts. Both ideas revolve around the concept of creating self-contained, vibrant communities where residents can access essential goods, services, and amenities within a short distance from their homes.

In summary, the main conclusions obtained from this interview are that the 15-min Commercial Circle can provide a more convenient and practical lifestyle and a higher quality dining experience. However, it also has negative impacts, such as a noisy living environment. Therefore, when planning and constructing the 15-min Commercial Circle, it is necessary to consider the average age of the residents and prioritize planning and construction in areas with a higher population of young people. Additionally, attention should be paid to the quality and comfort of the living environment, including how to address issues such as noise and pollution to ensure livability. However, this study only used interview research methods and did not have specific data to support the findings. Therefore, the following study should use qualitative and quantitative methods to investigate the topic further.

6.0 Conclusion& Recommendations

The present study found that the construction of the 15-min Commercial Circle in Zhengzhou has brought considerable convenience to residents' daily life. However, if the construction can be tailored to residents' actual needs, greater satisfaction and a positive impact on

their lives can be achieved. Theoretically, this study draws upon the concept of a life circle and investigates the 15-min commercial circle in Zhengzhou. It helps to enrich the limited scholarship in this field and advance our understanding of its applicability in second or third-tier cities. Practically, the findings give a nuanced picture of its pros and cons. For example, to promote sustainable development, measures such as increasing greenery and reducing pollution are needed. It is recommended that the government consider environmental protection and sustainable development factors in the planning and construction of the living circle and encourage developers and enterprises to adopt environmentally friendly and sustainable construction and operation modes. Moreover, it is necessary to strengthen the construction of social public service facilities in the living circle, including healthcare, education, culture, and entertainment, to meet the diverse needs of people. Finally, it is crucial to establish a sound management mechanism and community autonomy system to ensure the safety and order of the living circle and enhance its social harmony.

Nevertheless, this study has some limitations. Firstly, this study only takes Zhengzhou as a case study, which dampens its representativeness across China. Future studies should conduct more multi-case studies or comparative studies and even cross-country studies. Secondly, the sample size is relatively small, with only 15 participants. Future studies should enlarge it and get more insights. Lastly, this study only employs a single interview method; future studies should use diverse ones like observation, ethnography or even survey questionnaires.

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Paper Contribution to Related Field of Study

The paper contributes to the field of urban studies by providing a case study on the impact of the 15-minute commercial circle on the quality of life of residents in a Chinese city. It highlights both the positive and negative effects of the commercial circle and proposes sustainable and inclusive practices for future development. The study adds to the limited research on the topic and provides insights for policymakers and urban planners in promoting economic growth while addressing environmental and social concerns.

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