Sustainable Urban Village in Wuhan

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Abstract. To understand the performance of urban villages in terms of justice and inclusivity, an investigation from bottom-up was launched in current study. Through semantic differential (SD) method, subjective feelings of residents, workers and tourists were collected and evaluated; overall feeling was positive. Study indicated that urban villages in China, like in East Lake Village, with diverse life styles at all levels of society and registering positive overall evaluation, are sustainable. It concluded that development of adjacent formal space of the city, autonomous formalization of villagers and low rent of informal housing are essential conditions for a sustainable urban village. Suggested strategies for sustainable upgrading and reconstruction of urban villages should recognize and respect various types of groups, incorporating different demands and usage of space to protect diverse life styles. These strategies may entail cleaning, lighting and coloring which are effective ways to improve environmental quality.

1. Introduction
During China's rapid urbanization, numerous villages around cities have been incorporated into the urban built-up areas and become Villages in the City (ViCs). Some of these villages were shantytowns that had been developed into formal urban space in large-scale renewal and reconstruction urban areas. Rural houses were demolished; land use rights reclaimed by the city government and villages transformed into inner city neighborhoods. However, some high-density villages located in the central area of the city were preserved as informal urban space due to rising land price and demolition cost. The number of people living there increased simultaneously with many positive and optimistic environmental changes, making these Urban Villages promising and sustainable communities [1].

China’s so-called first-tier cities-Beijing, Shanghai, Shenzhen, and Guangzhou-are typically the most popular job markets that draw large populations, including rural migrants, from different provinces. However, besides swarming into megacities such as Beijing, Shanghai and Guangzhou, an increasing number of migrants want to start their careers in second-tier cities, including the provincial capitals and coastal cities, according to a recent survey. The survey which was conducted by Zhaopin.com, one of China's leading recruitment websites, showed that 37.5 percent of China's new college graduates in 2017 wanted to work in second-tier cities, while 29.9 percent preferred top-tier cities [2]. Statistics from the National Bureau of Statistics showed that besides Beijing, Shanghai, Guangzhou and Shenzhen, eight smaller metropolises stepped into China's 1-trillion-yuan ($148 billion) GDP club in 2016. These metropolises include Chongqing, Chengdu, Wuhan, Suzhou and Hangzhou. Besides economic growth, implementation of favourable employment policy in these cities is appealing to new college graduates.

A considerable number of urban villages in second-tier cities developed rapidly in the 1990s due to the ant tribe; a low-income group of college graduates. The population component of urban villages’ residents has become more diversified, and the connection between informal and formal space has
become closer and more integrated. They are no longer completely closed, but open to the city. This kind of urban villages have attracted peoples’ attention. They have a powerful attraction drawing diverse residents that actively improve their environment through planning and design without external interference. What characteristics and features of these kinds of urban villages, if any, facilitate their residents’ short-term and long-term diverse lifestyle and sense of belonging? Can these characteristics and features be maintained and utilized in urban villages upgrade to achieve more sustainable urban communities? The above questions have led to a new research focus as well as a new methodology for investigating about sustainability of urban village.

2. Literature Review

During the past two decades, compactness has become an important feature of sustainable cities and communities according to proponents of sustainability given the excessive energy consumption of low-density metropolitan areas [3-5]. In terms of the impact on the environment, compact development of urban villages occupying urban built-up area, to a certain extent reduces further pressure on natural environment caused by potential urban expansion or large-scale redevelopment. In recent years, researchers have focused on the role of urban villages in urban housing system in China, believing that urban villages are one of the main sources of low-rent housing, providing a large number of affordable housing for low-income people, especially rural migrants, supplementing the formal housing system provided by urban government [6,7]. Besides residential options, researchers find that the enclave provides a feasible path through which migrants can achieve social mobility and adapt themselves to the urban environment [8].

The anthropology study of Urban Villages shows its diversity and complexity. Longdid some interesting case studies to discuss the relationship between the Hanzhengjie (one of the oldest urban villages in Wuhan) urban morphology and everyday life with the concept of informality and interventionist view [9]. Mathews’ intimate portrayal of Chungking Mansions (ghetto at the Center of Hong Kong) polyethnic residents lays bare their intricate connections to the international circulation of goods, money and ideas, confirming that this so-called ghetto is not a place of darkness and desperation but a beacon of hope [10].

3. Case Study

This paper focuses on daily life, behavior mode and spatial usage of urban villages in Wuhan, one of the most influential Chinese second-tier cities. Urban village residents include rural migrants and different people engaged in formal and informal sectors, and the investigation of urban villages concentrates on city’s sustainable development. Questionnaires were used to obtain quantitative indicators while observational interviews were used to collect individual experiences.

3.1. Selected case

Wuhan, a thoroughfare of nine provinces and the biggest provincial capital in central China, is booming with its urban areas ballooning. The end of 1980s witnessed the first wave of rural migrants to the cities. In 2004, Wuhan began to carry out urban village comprehensive reconstruction project learning from the experiences of Beijing, Guangzhou and Zhuhai. The comprehensive transformation project included a total of 147 administrative villages and 15 units of agriculture and forestry in the inner city districts like Jiang’an, Jianghan, Qiaokou, Hongshan, Hanyang, and Wuchang (Suburb District temporarily not included), involving a total population of 356,600 of which 171,000 was an agricultural population. Some urban villages were demolished and redeveloped while others survived after infrastructural and environmental improvement. From 2005 to 2017, urbanization rate in Wuhan increased from about 60% to 80%, although there are still 49 urban villages remaining in inner city of Wuhan.

Since the expansion of Chinese universities in 1999, urban villages in Wuhan city located close to a university encounter a golden opportunity for development. Wuhan is a city with rich educational resources in central China. There are more than 80 colleges and universities in Wuhan, and the number of college students in Wuhan has reached 1.18 million, and is definitely the largest not only in China
but also in the world. Urban villages near the campuses developed along with large groups of peasant-workers swarming into the city. Within a short period, small family-run businesses and shops catering for the needs of college students have become the “logistics department” of surrounding colleges and universities, making up for lack of service functions of colleges and universities. Gradually, marketing reform of higher education makes the college students no longer confined to the campus activities, considerably expanding surrounding areas, including urban villages which provide cheap rent and diversified consumption; attracting teachers and students. At the same time, most university campuses have access to appealing sceneries, like forests, hills, lakes and rivers, which have been upgraded to public landscape and open space by the city government in recent years. Closely connected with the public space and green land or other formal spaces developed by urban planning gives these villages a new driving force for development.

East Lake Village (ELV), case study area in this paper, is in Wuchang district of Wuhan city. It is located on the southeast of Wuhan University, separated from the residential area of the university by a wall. To the east is the famous landscape of Wuhan, East Lake. It is a typical urban village adjacent to high-quality urban resources in the inner city of Wuhan.

3.2. Subjective feelings for ELV

This study examined inhabitants’ subjective feelings of space. The survey included residents, workers and tourists. A total of 213 questionnaires were issued; 209 valid questionnaires were collected. There were 21 landlords, 28 student tenants, 40 city low-income tenants, 23 shop operators, 22 delivery boys, 32 nearby visitors, 22 local tourists and 21 foreign tourists. The evaluation of spatial perception is investigated in three aspects: interior space of the building, street space of the village and urban space along the city road. 6 pairs of opposite adjective words, open and closed, clean and tidy, trendy and outdated, quiet and noisy, convenient and inconvenient, expensive and cheap, are adopted to describe each space level according to survey objects’ image with a measurement scale from -2 to 2. This way, subjective evaluation of space in ELV can be obtained. Additionally, evaluation of overall feeling, like or dislike, was also an important reference index (Fig. 1).

![Figure 1. Subjective feelings survey](image)

Note: Blue line for residents, orange line for workers, red line for tourists

4. Discuss: Sustainable Urban Village

Through semantic differential (SD) method, the following phenomenon was observed:
Evaluation of overall feeling was positive, indicating that ELV in the city is a place with positive significance. Except for only 1-2 indices, the general favorable degree of impression for tourists is obviously greater than that of workers and much better than that of residents. Apart from negative evaluation of fashion sense of streets and alleys, other indices of tourists’ evaluation are all middle or positive. It can be concluded that the favorable degree of impression for those staying for a short time is higher, non-local residents is greater than that of local residents, and the positive significance of tourism is greater than that of living and working in ELV.

The environmental quality of ELV differs in three aspects. The evaluation of street space is obviously lower than that of urban space and interior space. The closure, aging and cheapness of the laneeway space are the main factors that pull down the overall favorable impression, indicating that the environment in ELV has room for improvement. Considering the behavioral trajectory and subjective feeling of residents, workers and tourists, it can also be concluded that the quality of commercial buildings along the city road is much better than that of residential buildings inside the village.

Convenience enhances people's favorable impression of ELV. Conveniences at three spatial levels are prominent subjective evaluation indices. From urban space perspective, convenience is reflected in diverse modes of travel, proximity to other destinations and high accessibility to urban public resources. Conveniences of street space is reflected in clear structure of the street network. There is no cul-de-sacs and easy to find a way out. The life service types of the shops along the street can meet most of the daily needs. The convenience of interior space can meet the needs of living or consumption for all kinds of people.

Economic evaluation shows different groups exhibit different subjective feelings. Only residents think that the space consumption of ELV is cheap, while tourists and operators do not think that the consumption of interior and street space is cheap. Tourists and operators think urban space is relatively expensive. In ELV, low rent is positively correlated with favorable impression of residents, while commercial space, especially along the street, does not appear cheaper compared to other parts of the city.

5. References
[1] Saunders, D 2011. Arrival city: the final migration and our next world. William Heinemann, London.
[2] Xinhua  2017. More graduates choosing to work in second-tier cities. Updated: 2017-07-22
[3] Jenks, M & Bur E (Eds) 1996. Compact city: A sustainable urban form? F&FN Spon.
[4] Rudlin, D & Falk, N 1999. Building the 21st century home: the sustainable urban neighbourhood.
[5] Mindali, O , Rowe, A , & Salomon, I 2004. Urban density and energy consumption:A new look at old statistics. Transport Research Part A: Policy and Practice, 38(2):143–162.
[6] Lin, Y L , De Meulder, B , Wang, S F 2011. Understanding the ‘Village in the City’ in Guangzhou economic integration and development issue and their implications for the urban migrant. Urban Studies 48 (16), 3583-3598.
[7] Huang, Y , Tao, R  2015 . Housing migrants in Chinese cities: current status and policy design. Environment and planning c-government and policy 32 (2), 640 ~ 660.
[8] Liu Y , Li Z , Liu Y , et al. 2015 Growth of rural migrant enclaves in Guangzhou, China: Agency, everyday practice and social mobility. Urban Studies 52(16): 3086–3105.
[9] Long, Y & Wang, H (Eds) 2006, Urban Informality. Southeast University Press.
[10] Mathews, G 2011.Ghetto at the Center of the World: Chungking Mansions, Hong Kong. University of Chicago Press.